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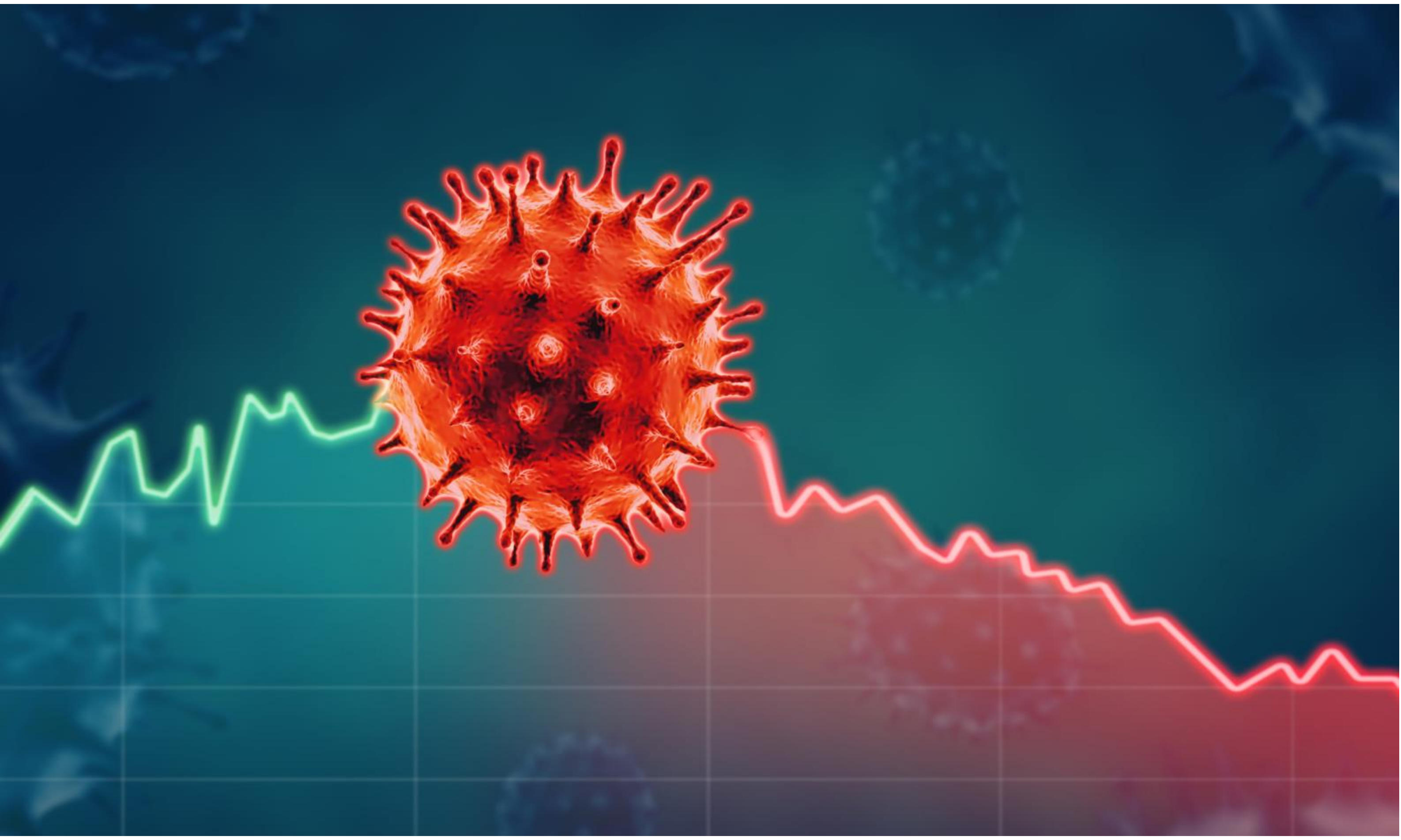

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Unemployment and Midlife Suicide Rates in Australia, 2001-2015: Implications During the COVID-19 Pandemic

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Abstract
The world is experiencing a massive economic shock from the COVID-19 pandemic. Resulting unemployment and socioeconomic disruption have the potential to lead to a major upswing in the population rate of suicide in Europe and elsewhere. We assessed the association between midlife suicide rates and unemployment for Australia. For the midlife group we found a rapid decrease in the rate from 1970s to 1980s, but a more apparent increase after 2007. The increased male suicide rate coincided with the 2008 global financial crisis. The relationship between worsening employment outcomes, including suicide, is a great tragedy and deserves urgent further investigation.

Keywords: Labour, Suicide, Socioeconomic, Regression, COVID-19
JEL: C230, E240, I100, J650

1. Introduction

One million people commit suicide globally each year. While there are likely to be broad secular factors underlying this, such as socioeconomic disadvantage associated with mental illness, many deaths from suicide should be preventable. (World Health Organisation, 2012; Mann, Apter, & Bertolote, 2005; Allen, Balfour, Bell, & Marmot, 2014) The fact that being unemployed increases the risk of a person taking their own life has long been recognised (Platt, 1984) and numerous studies have confirmed a link between unemployment and suicide. (Li, Page, Martin, & Taylor, 2011; Milner, Page, & LaMontagne, 2012)

The COVID-19 pandemic has caused a global economic shock with significant effects on labor markets across high- and low-and-middle income countries in Europe and Australasia. Spread of the pandemic has converged and interacted with three extant global crises that will have a profound effect on spread of the disease: governance, economics, and migration. These are independent crises with different roots, but reflect a challenge to mechanisms to produce and protect essential public goods for an effective policy response.(Bozorgmehr et al, 2020) European transnational governance systems to organise and administer public goods such as health-care support have been severely challenged. Many European countries are barely recovered from a decade of austerity following the 2007-08 financial crisis and likely will face spikes in unemployment. A report from the International Labour Organization (2020) highlighted that the impact on the labour market from the COVID-19 crisis is much more severe for the younger generation and adult females. Lastly, the migration crisis that began in 2015 has led to COVID outbreaks in under-resourced refugee facilities leading to health disasters.

Governments have taken different approaches to managing the economic crisis and resultant risk of increased unemployment. Relief strategies can be classified broadly according to the extent to which economic support is given directly to workers by a government agency (for example, as a benefit) or through a pre-existing employment relationship.(Rothwell, 2020) A number of European countries, and Australia, have attempted to prevent large scale unemployment by channelling relief through employers to their employees – subsidizing the workforce without severing ties with their employers.

Already there are reports of increased suicide rates in European countries.(Vanttinen, 2020) For cultural reasons suicide receives less attention in Asian countries than in the West, and this has been associated with an underemphasis on suicide-related research and somewhat fragmented approaches to suicide prevention.(Chen, et al, 2012) The available data are very concerning: during the Asian Economic Crisis in 1999, " suicide rates soared – 39% in Japan, 44% in Hong Kong and 45% in South Korea. Taiwan and Singapore, which were not as severely affected, showed no link between suicide rates and economic difficulties."(Devitt, 2020)

There is continuing debate about the nature of the relationship between unemployment and suicide: is the association one of true causality or is the association confounded? Pre-existing mental illness predisposes both to unemployment and suicide and thus may be a confounder (Maki & Martikainen, 2012). Additionally, people with psychological problems are more likely to experience unemployment, further increasing the risk of mental illness and consequent suicide. (Allen et al. 2014; Shah, 2009; Frasquilho, Matos, Salonna, Guerreiro, Storti, Gaspar, & Caldas-de-Almeida, 2016)

1.1 *Theoretical context*

The theory of suicide proposed by Hamermesh and Soss (1974) proposes that an individual takes their own life when that person's remaining discounted lifetime utility falls below a certain threshold. In simple terms: the higher the expected income, the higher the expected utility making living more attractive that suicide. In the context of this theory, suicide then is a decision that a rational optimising agent makes based on the available evidence. Such a model, based on rational choice, would predict increasing suicide rates with increasing age. (Koo & Cox, 2008) Yet empirical data such as that of Neumayer (2004) found that, prior to 2000, the effect of unemployment on suicide was weakest in the age group 45 to 65 years, with the strongest effect in the age group 20 to 44 years. The question of whether a person who contemplates suicide truly is making a rational decision is an important one, and it is possible that suicidality is an irrational behaviour due to mental illness, loss of social capital, or social disintegration.(Jarosz, 1985; Helliwell, 2007) It is likely that unemployment increases the risk of suicide due to the loss of supportive resources, diminished social status, and increased relationship difficulties.(Chang & Chen, 2017)

The theoretical effect of unemployment on utility would suggest that labour market institutions – unemployment benefits and legislated employment protections – would have an effect on rates of suicide. Breuer and Rottman (2014) analysed a panel of 25 OECD countries, confirming the relationship between unemployment and suicide and showing that employment protections had a positive effect on suicide mortality. The latter is an important finding and has policy implications: that any interventions aimed at reducing suicide mortality should put emphasis on periods of economic recession; and, that economic and social supports for people facing unemployment should be balanced. By this, we mean that it is important to balance supports against the well-recognised association between 'generous' unemployment systems and the duration of unemployment – the macroeconomic literature finds that long-term unemployment tends to increase with rising unemployment benefits. (Blanchard & Wolfers, 2000)

1.2 Employment, well-being, and suicide

Mental health is a key dimension in all of our lives, and an important predictor of wellbeing. Layard (2013) has reviewed wellbeing and its determinants, and found that happiness and 'life satisfaction' are strongly predicted by past mental health status, with an effect almost as strong as income and educational qualifications. Layard points out the 'heavy economic costs' and importance of mental health, calculating that the overall output loss is close to 7.5% of GDP in Britain, and concluding that, "of all this cost, more than half falls on the taxpayer and the rest on the individuals concerned and on their employers."

Huikari and Korhonen (2016) contend that suicide statistics have a number of advantages over other methods of assessing 'happiness,' and agree with Daly and colleagues (2013) that, "suicide can be considered as a direct measure of an individual's well-being. Further… suicide data measure more objectively well-being effects that, for example, survey data on self-reported well-being or self-reported health statistics." Wellbeing is strongly related to macroeconomic conditions, and in the aftermath of the Global Financial Crisis (GFC) a number of papers have reported an increase in suicide rates in high-income countries. (Chen, Choi, Mori, Sawaka, & Sugano, 2012; Breuer & Rottman, 2014; Chang & Chen, 2015; Huikari & Korhonen, 2016; Blazquez-Fernandez, Cantarero-Prieto, & Pascual-Saez, 2017)

Anne Case and Angus Deaton (2015) investigated whether or not a relationship exists between suicide rates and self-reported well-being, and whether or not either metric is a useful indicator of overall societal well-being. Case and Deaton had sought a benchmark for self-reported well-being to understand if the measure has face validity, and speculated that suicide might be a measure of people's unhappiness. They reasoned that, in regions of the United States where people self-report poorer well-being, the population rate of suicide would be higher. However, they found no such correlation despite rising suicide rates at a national level. Further analysis revealed that after many years of steady improvement, mortality rates among white non-Hispanic men and women had begun to increase. This finding was in contrast to data from other developed countries, where midlife mortality continued to reduce. (Case & Deaton, 2017) Case and Deaton found that mortality declines in cancer and heart disease had been offset by increases in the incidences of suicide, alcohol-related liver disease, and drug overdoses in the 45 to 54 year age group. They termed these causes of mortality 'deaths of despair,' and found that increases in their rates were large enough to offset other population-level longevity gains and cause an overall increase in midlife mortality, thus decreasing overall life expectancy in the United States. (Xu, Sherry, Murphy, & Arias, 2016)

Case and Deaton (2017) proposed that:

> "Contemporaneous levels of resources – particularly slowly growing, stagnant, and even declining incomes – cannot provide a comprehensive explanation of poor mortality outcomes. We propose a preliminary but plausible story in which *cumulative disadvantage* from one birth cohort to the next – in

> [labour] market, in marriage and child outcomes, and in health – is triggered by progressively worsening [labour] market opportunities at the time of entry for whites with low levels of education."

Men of working age are particularly vulnerable to suicide with rising unemployment, and there is a strong association between unemployment and poor health. (Nordt, Warnke, Seifritz, & Kawohl, 2015) Unemployment has direct effects on individuals by mechanisms such as increased rates of depressive illness, financial strains, reduced access to mental health care, or disruption of existing treatments for depressive and other mental illness.(Classen & Dunn, 2012; Allen *et al*., 2014) In a study spanning 2000 to 2011 and involving data from 63 countries, of four economic variables tested (national unemployment rate, GDP, growth rate, and inflation rate) only unemployment correlated with suicide rates at a national level. (Nordt *et al*, 2015) The authors noted that the association was non-linear and somewhat time-lagged, and was stronger in countries with lower baseline unemployment rates that those with higher rates. The authors suggested that, "in countries where unemployment is uncommon, an unexpected rise in the unemployment rate might trigger greater fears and insecurity than in countries with higher pre-crisis unemployment rates."

A study of the impact of unemployment variations on suicide in Western European countries – Austria, Finland, France, Germany, the Netherlands, Spain, Sweden, and the United Kingdom – during the period 2000 to 2010 (thus including the Global Financial Crisis) reported a 'weak' association between unemployment and suicide.(Laanani, Ghosn, Jougla, & Rey, 2014) The study found an increase of 0.3% in suicide rate was associated with each 10% increase in unemployment rate across Western Europe. However, the association only reached significance in three countries: the Netherlands, the United Kingdom, and France. In countries with high baseline unemployment rates, such as Spain, no association was found. The authors stated that while 'economic crisis' might impact on suicide rates, the relationship should not be considered 'causal' at the population level.

A study of longer duration and greater breadth, spanning the period 1960 to 2012 and including 30 countries – including Australia – examined national unemployment and suicide rates in two age groups: 20 to 64 years, and 65 years and older. (Norström & Grönqvist, 2015) The authors identified great heterogeneity between the countries, but reported that overall a 1% increase unemployment was associated with an increase of 0.06% in male suicide. The authors examined the welfare systems in place to provide 'safety nets' in each country. They attempted to rank the generosity of social welfare systems based on 'the generosity of benefits paid to the unemployed, the qualifying period and conditions, duration of benefit payments, and the waiting period before entitlement is activated.'(Bambra & Eikemo, 2009) The effect was strongest in eastern and southern European countries with the weakest unemployment protections. However, in countries with strong unemployment protection the association was weak.

A systematic review of the duration of unemployment reported that long-term unemployment is associated with a greater incidence of suicide, and that the risk is greatest in the first five years but is attenuated thereafter. (Milner, Page, & LaMontagne, 2013) This systematic review noted that there were marked variations in the methods of measurement of unemployment in different studies. In a follow-up review, the authors found that when pre-existing mental health status was controlled for, the relative risk for suicide in unemployment was reduced by one-third, thus confirming the assertion that mental health may be a confounder in many cases. (Milner, Page, & LaMontagne, 2013) Indeed, a meta-analysis has found an overall effect size of 0.51 for unemployment on mental health and concludes that unemployment not only correlates with psychological distress but also directly causes distress.(Paul & Moser, 2009) This meta-analysis also established that the effects of unemployment were stronger in countries with more adverse socioeconomic conditions such as lower levels of economic development, inequality, and lack of social welfare (Paul & Moser, 2009). Similarly, a recent systematic review of the effect of economic recessions on mental health has demonstrated that these periods are associated with a high prevalence of mental health problems and, ultimately, suicidal behaviour. (Frasquilho *et al*., 2016)

A study of unemployment alone examined national data from Australia during the period 1985 to 2006, using cross-sectional data regarding unemployment at a national level and suicide rates (Milner, Page, & LaMontagne, 2012). The authors reported the paradoxical finding that over the study period increasing unemployment at a national level was associated with lower male suicide rates. They also found that when unemployment was decreasing, and during periods when unemployment was of longer duration, male suicide rates increased. Only a weak association was found between suicide and unemployment in men aged 44 to 54 years, and no relationship to female suicide rates was reported. These findings contrast with those of Case and Deaton (2015, 2017) and now are no longer contemporaneous to the findings from the United States. Responding to a gap in the literature, this paper assesses the association between midlife suicide rates and unemployment rates at the regional level by sex, using regional level suicide data for Australia.

2. Methods

The Australian Bureau of Statistics (ABS) compiles national data on all suicide deaths in Australia, and a full explanation of ABS data management can be found at the organisation's website (ABS, 2019). These data are obtained from the state and territory Registrars of Births, Deaths and Marriages, and the notifications are supplemented by information from the National Coroners Information System (NCIS). The management of the death registration systems is the responsibility of each of the eight individual state and territory Registrars. As part of the registration process, information about the cause of death is supplied by the medical practitioner certifying the death, or by a coroner. Other information about the deceased is supplied by a relative or other person acquainted with the deceased, or by an official of the institution where the death occurred.

The ABS uses the *International Classification of Diseases – Version 10 (ICD-10)* for coding of cause of death in Australia. Deaths from external causes are coded according to the mechanism (how a person died) and the intent (whether the death was accidental, a homicide, or from intentional self-harm including likely suicide). Coronial investigations into potential suicide deaths are often complex, with considerable challenges associated with the determination of intent. Thus, coronial findings for some deaths are not available when ABS coding is finalised for a particular reference period – this affects approximately 40% of coronial cases when preliminary coding is completed.

This issue with data quality is addressed by the ABS in two ways. In the first instance, by increasing the length of time from the end of the reference period to publication of data to 15 months allowing more time to receive information on coroner certified deaths. Secondly, by introducing new coding guidelines and a process of revisions to Causes of Death data. The new coding guidelines improve data quality by enabling deaths to be coded to suicide if evidence indicates the death was from intentional self-harm. Previously, coding rules required a coroner to determine a death as intentional self-harm for it to be coded to suicide. However, in some instances the coroner does not make a finding on intent. The reasons for this may include legislative or regulatory barriers around the requirement to determine intent, or sensitivity to the feelings, cultural practices and religious beliefs of the family of the deceased. Furthermore, for some mechanisms of death it may be very difficult to determine suicidal intent (e.g. single vehicle incidents, drowning). In these cases, the burden of proof required for the coroner to establish that the death was as a result of intentional self-harm may make a finding of suicide less likely.

Under the new coding guidelines, in addition to coroner-determined suicides, deaths may also be coded to suicide following further investigation of information on the NCIS. Further investigation of a death would be initiated when the mechanism of death indicates a possible suicide and the coroner does not specifically state the intent as accidental or homicidal. Information that would support a determination of suicide includes indications by the person that they intended to take their own life, the presence of a suicide note, or knowledge of previous suicide attempts. In addition to the new coding guidelines, a revisions process has been applied to all cases registered after 1 January 2006 to improve the quality of the *Causes of Death* collection over time. This revisions process enables coders to re-examine coroner certified deaths either 12 or 24 months after initial processing. Over this time many coronial investigations are finalised. Once coroners have made their determination of the underlying cause of death, the ABS is able to code the death more accurately. If the case remains open on the NCIS, ABS will investigate and use additional information from police reports, toxicology reports, autopsy reports and coroners' initial findings to assign a more specific cause of death where possible.

The revisions process was internally assessed by the ABS in 2010 when the first year of applicable data, that for the 2007 reference period, had completed the full revisions cycle. This assessment found that over the two years of revisions, 16% of deaths which were referred to a coroner were recoded to more specific ICD-10 codes than those initially assigned. Analysis showed a decrease in cases coded to non-specific causes (e.g. Events of undetermined intent (Y10-34, Y87.2) and Other ill-defined and unspecified causes of mortality (R99)) and increases primarily in external causes of mortality, including suicide.

Noting these data quality issues, we were obtained a custom dataset from the ABS detailing the number of deaths in the five largest states of Australia (New South Wales, Victoria, Queensland, South Australia, and Western Australia) for the period 2001 to 2015 inclusive, separated for rural and suburban areas. The data were provided in Excel™ format: the dataset included the number of deaths coded as suicide by age group and sex. As a dominator, we obtained yearly point estimates of the population in the states for age and sex.

Unemployment estimates were obtained from the Australian Bureau of Statistics (catalogue no. 6291.0.55.001, Labour Force, Australia). The ABS dataset provides estimates of unemployment rate over time, and separates rates of unemployment into greater capital city area and for the rest of the state (that is, regional areas).

We used a linear mixed model approach to determine the strength of association between regional unemployment and suicide rates. Recognising the temporal dependency within region, we fitted the year within each region as a random model, and fitted the type of area (rural and suburban) and regional unemployment rate as fixed model. The model coefficient for the unemployment rate indicates how the unemployment rate relates to the suicide rate, and the P value indicates the level of significance of this association. This study received prospective ethics approval from the Australian National University Human Research Ethics Committee (protocol 2015/347).

3. Results

In the first instance historical data on the suicide rates and unemployment rate were used. **Figures 1** to **20** show the regional historical suicide rates suicide rates in males and females for: (1) the 40 to 60 years (midlife) age group; and, (2) for all other age groups plotted with the unemployment rates over the study period.

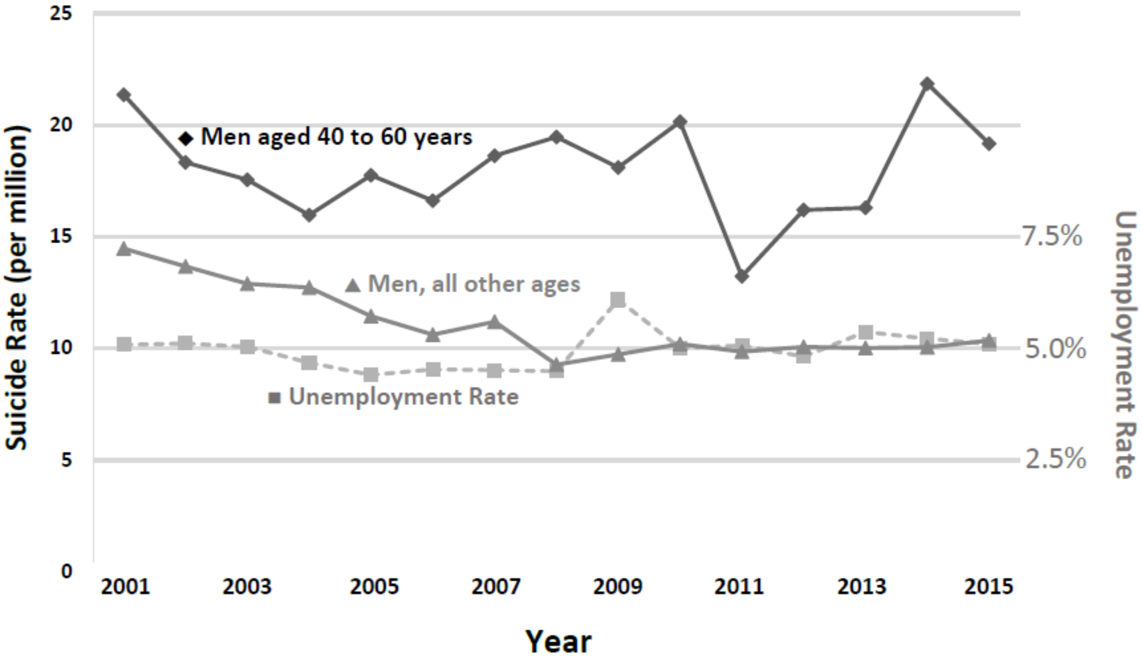

Figure 1. Sydney metropolitan area: yearly male suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

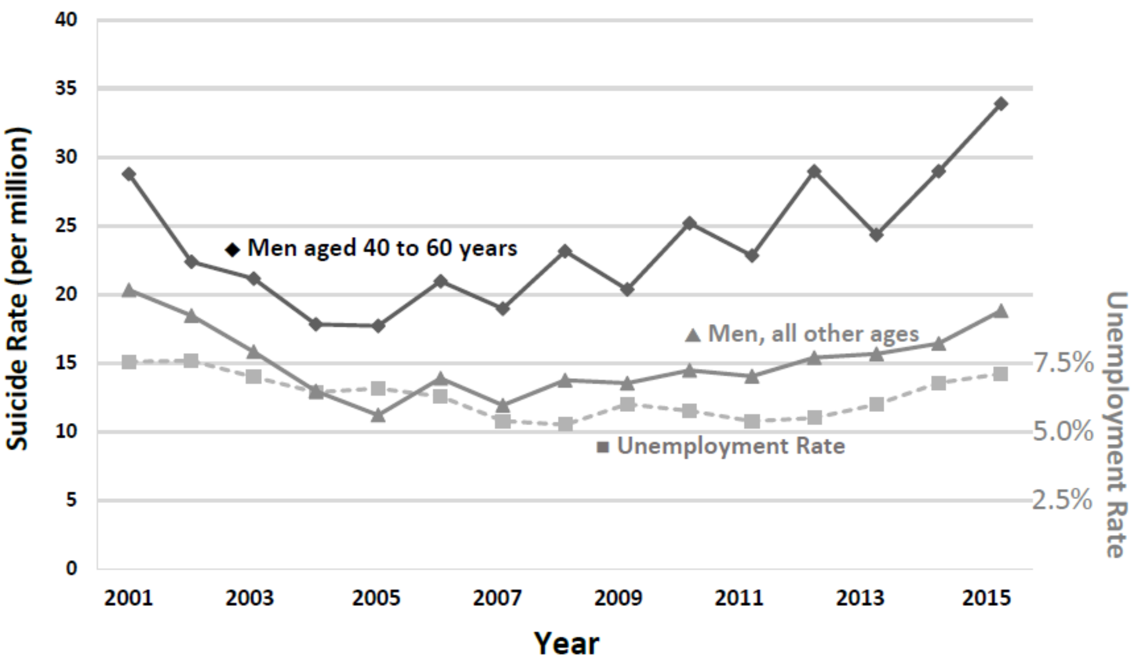

Figure 2. New South Wales excluding Sydney metropolitan area: yearly male suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

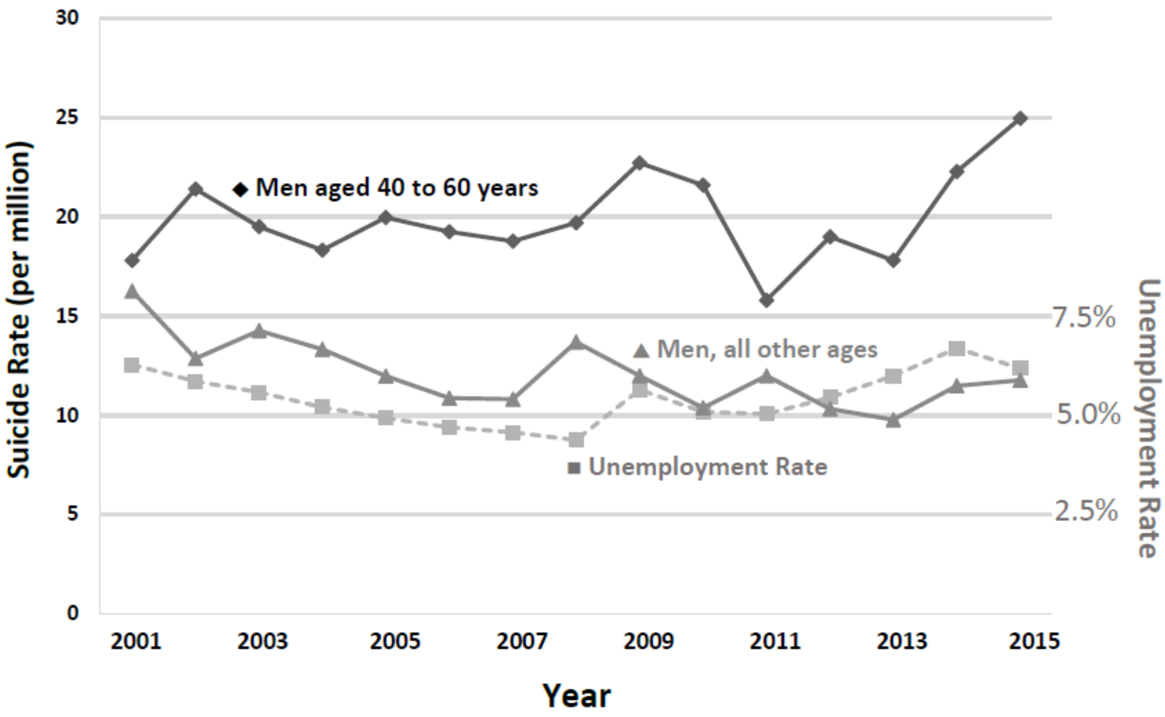

Figure 3. Melbourne metropolitan area: yearly male suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

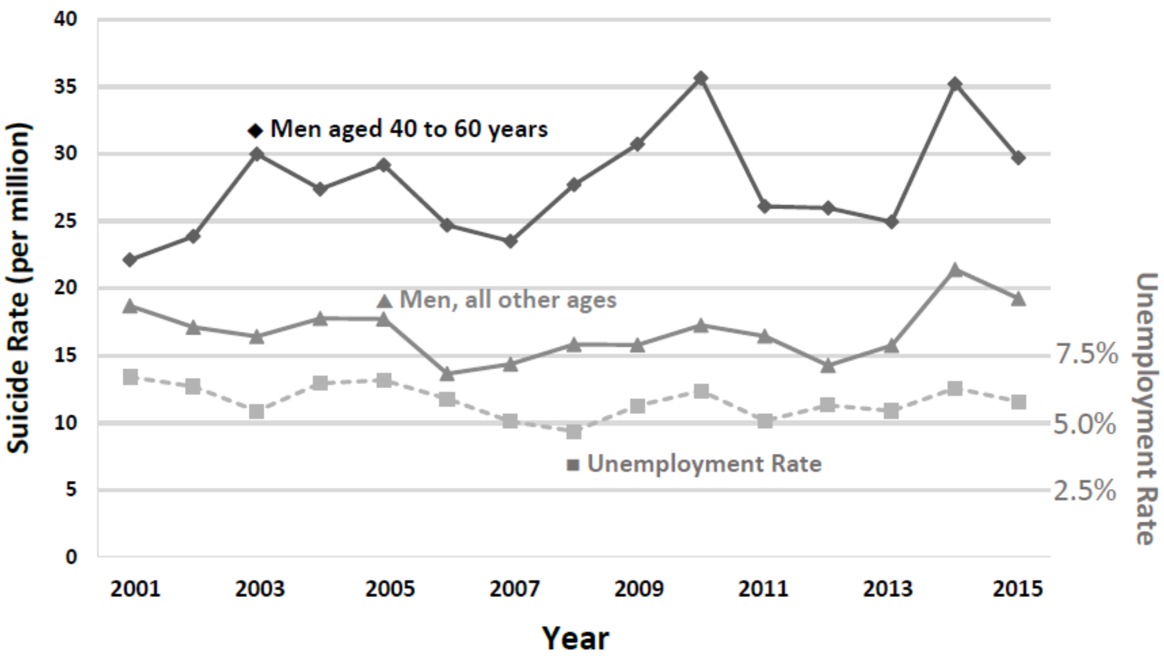

Figure 4. Victoria excluding Melbourne metropolitan area: yearly male suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

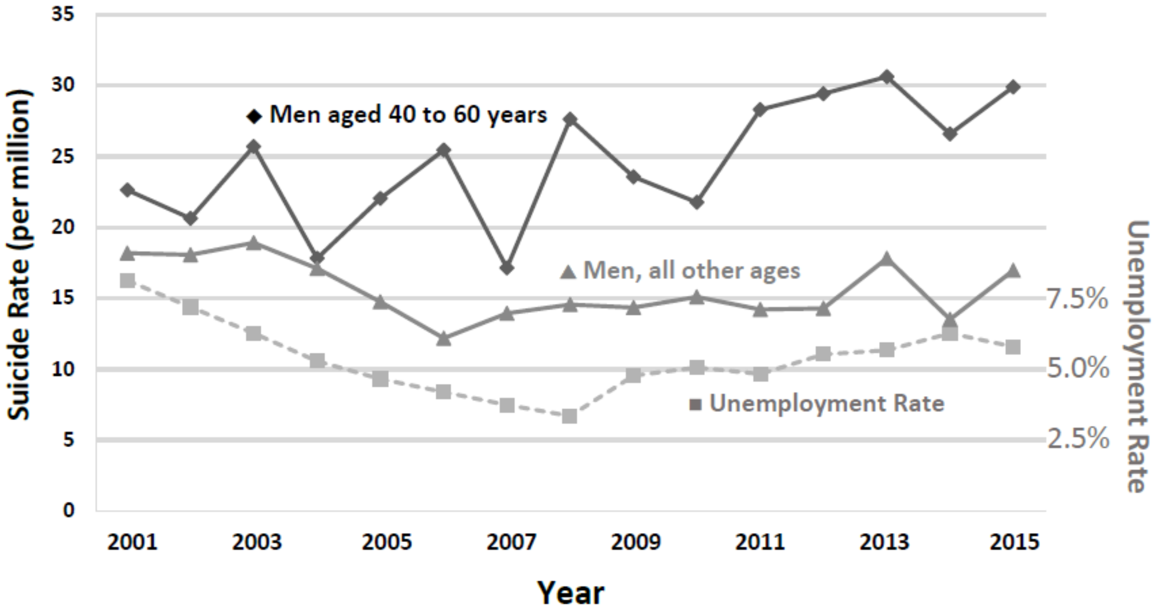

Figure 5. Brisbane metropolitan area: yearly male suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

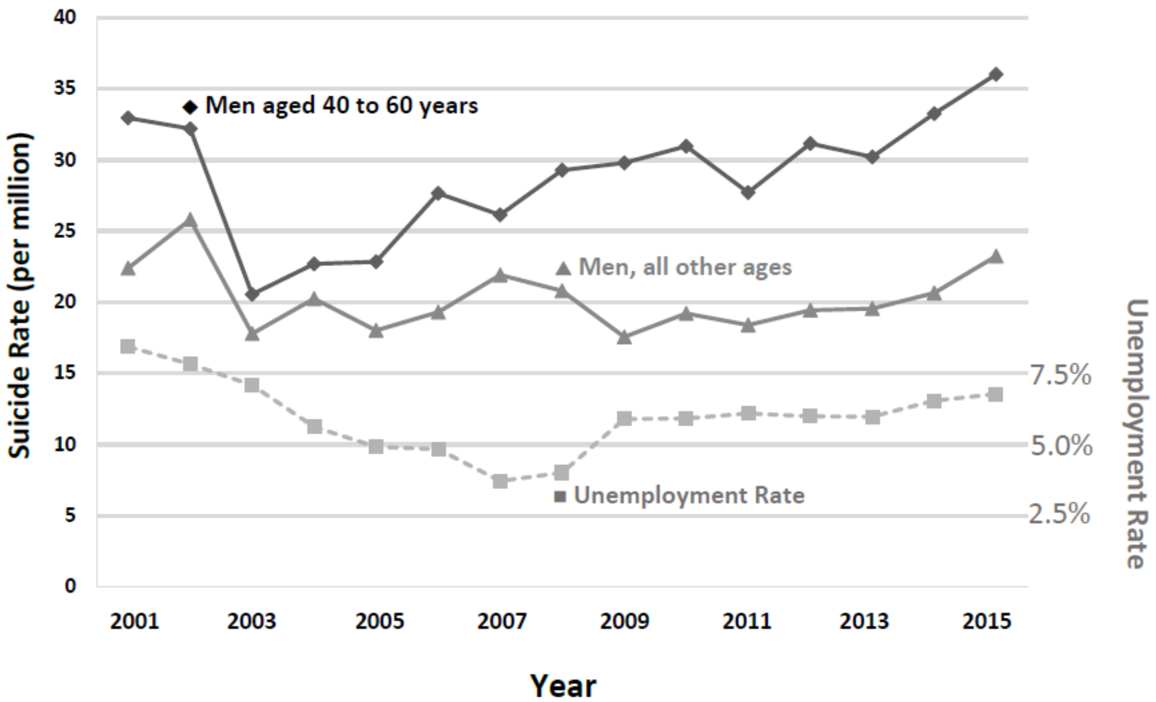

Figure 6. Queensland excluding Brisbane metropolitan area: yearly male suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

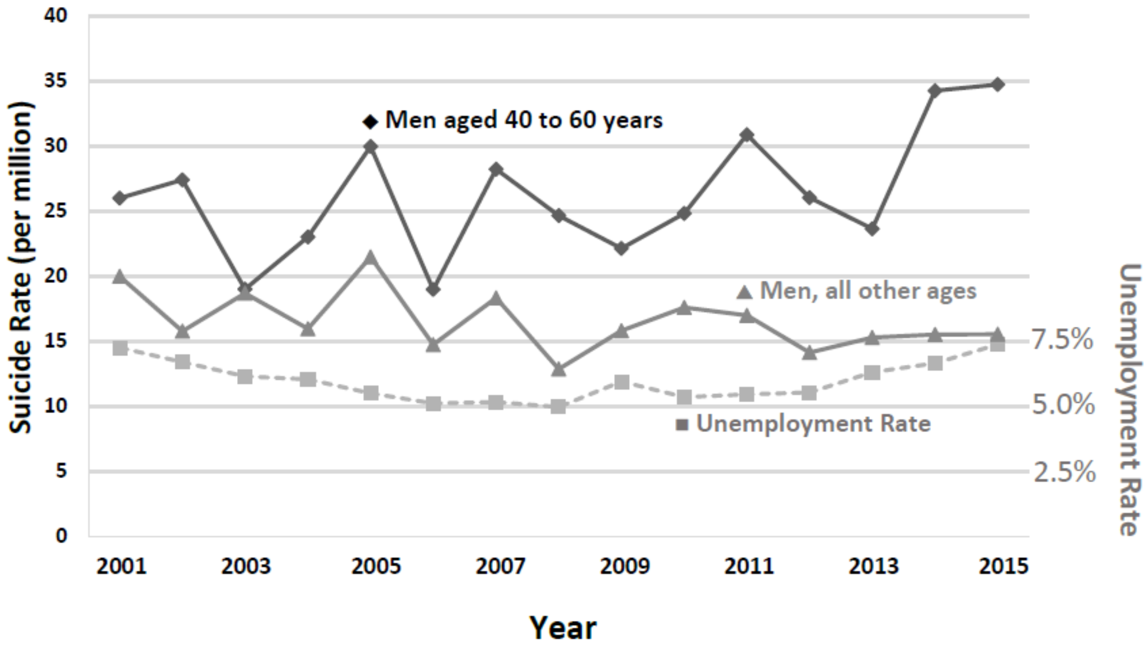

Figure 7. Adelaide metropolitan area: yearly male suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

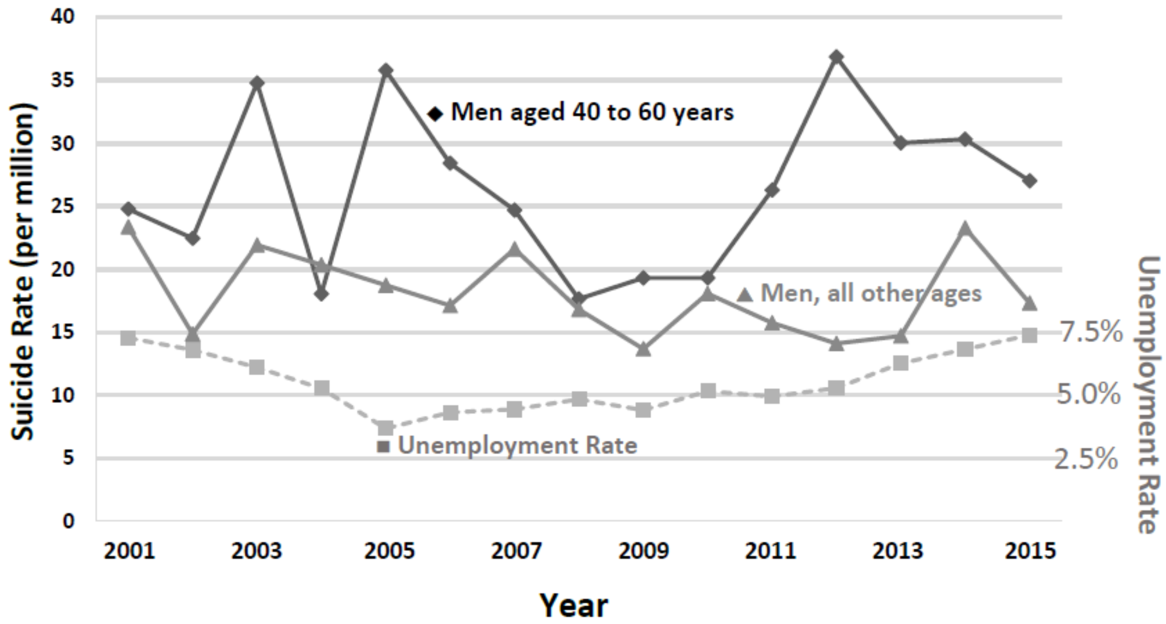

Figure 8. South Australia excluding Adelaide metropolitan area: yearly male suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

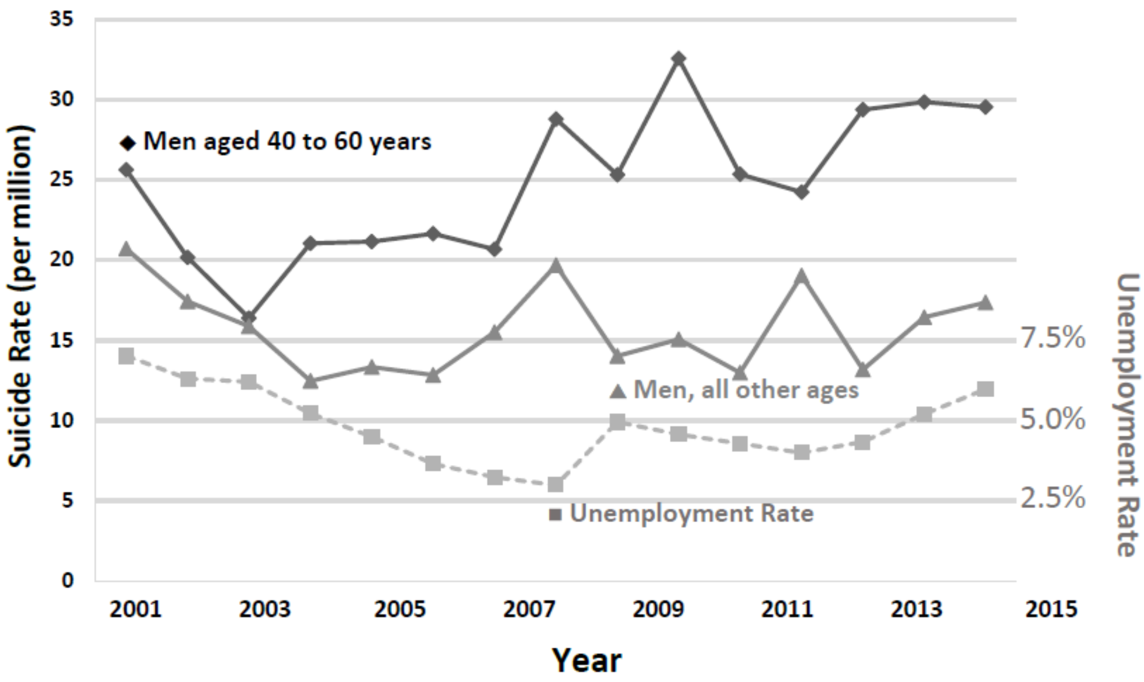

Figure 9. Perth metropolitan area: yearly male suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

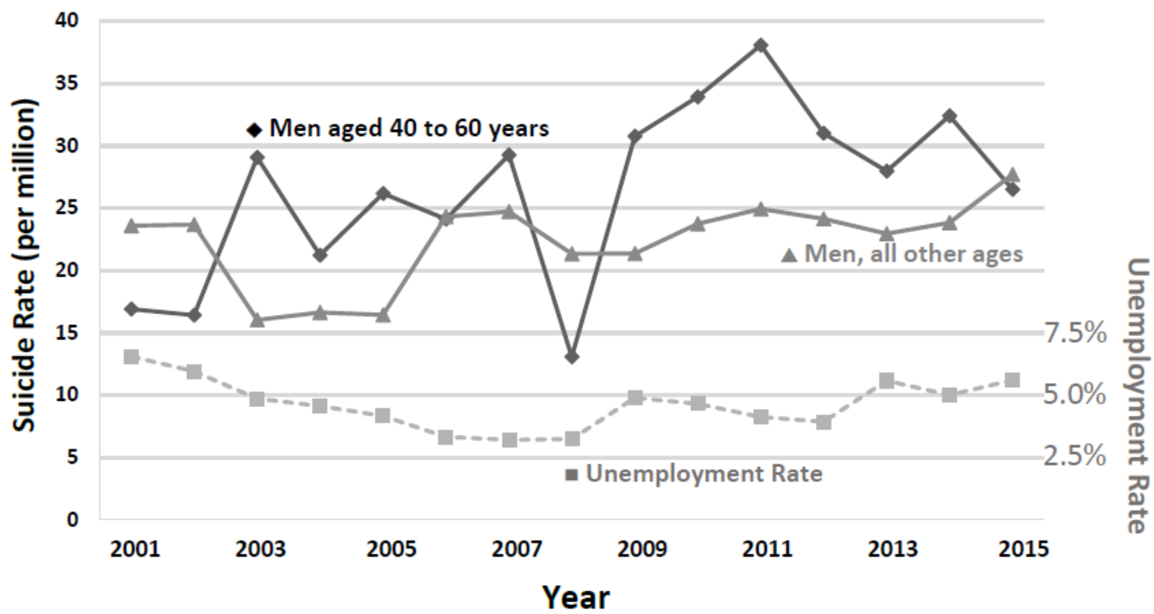

Figure 10. Western Australia excluding Perth metropolitan area: yearly male suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

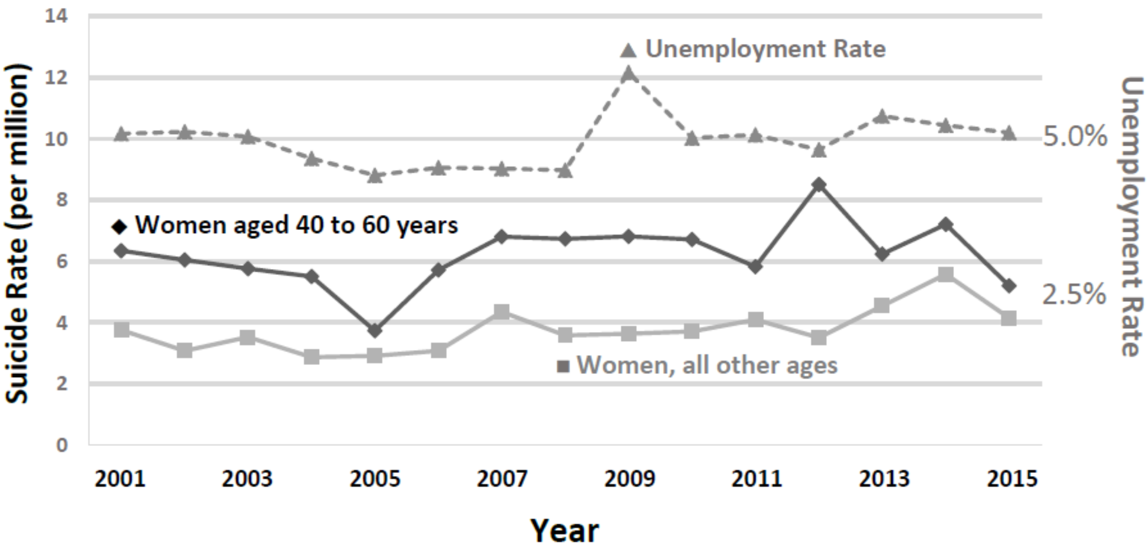

Figure 11. Sydney metropolitan area: yearly female suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

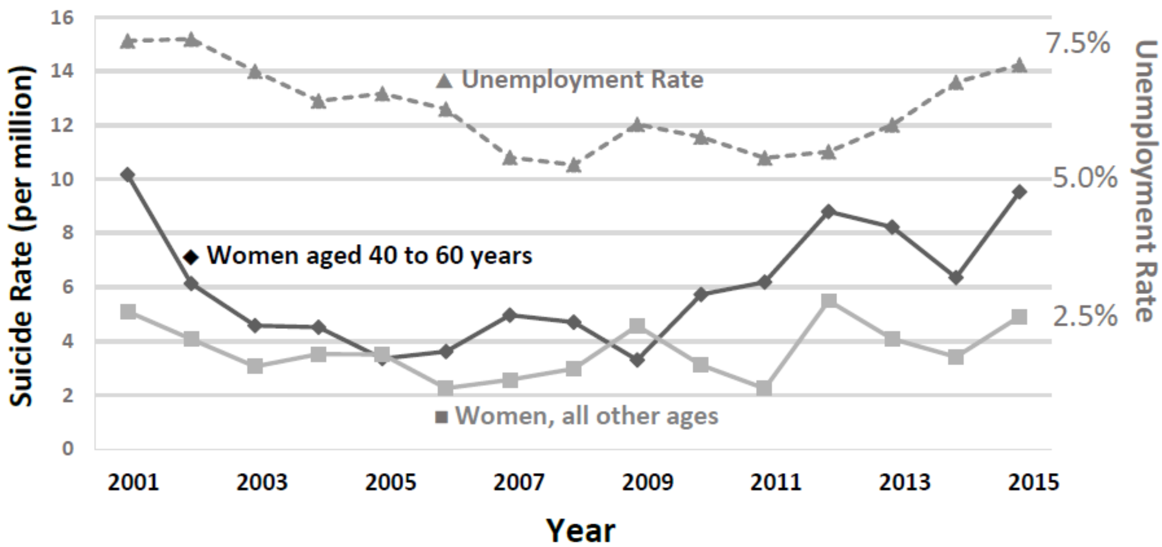

Figure 12. New South Wales excluding Sydney metropolitan area: yearly female suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

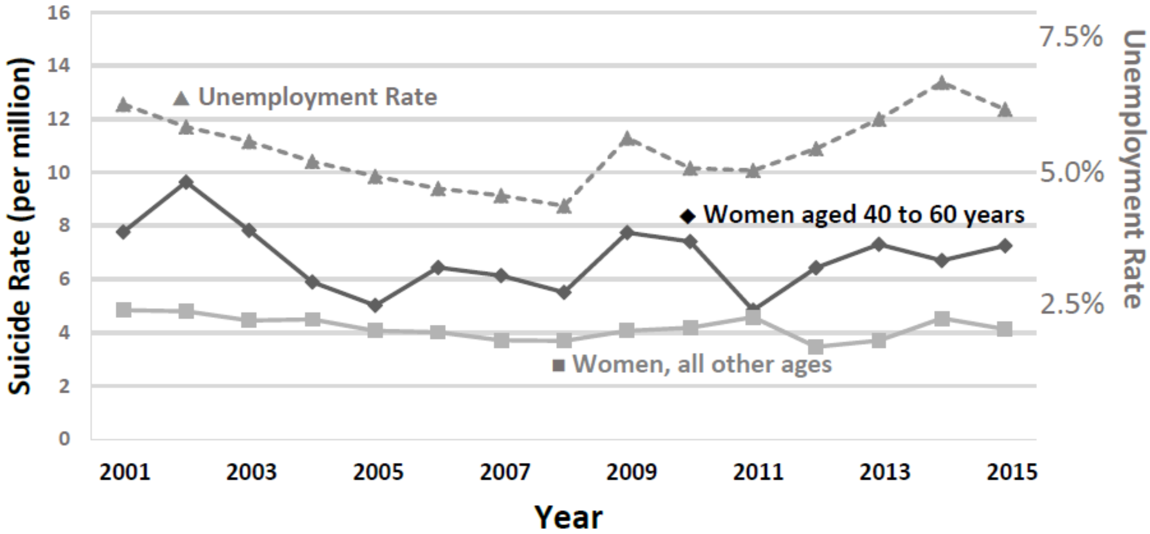

Figure 13. Melbourne metropolitan area: yearly female suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

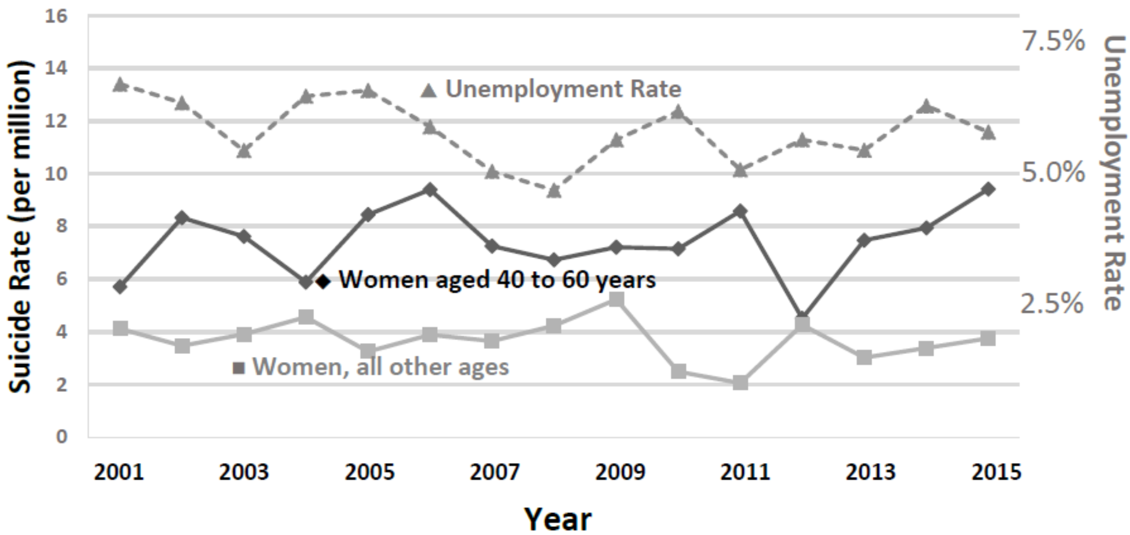

Figure 14. Victoria excluding Melbourne metropolitan area: yearly female suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

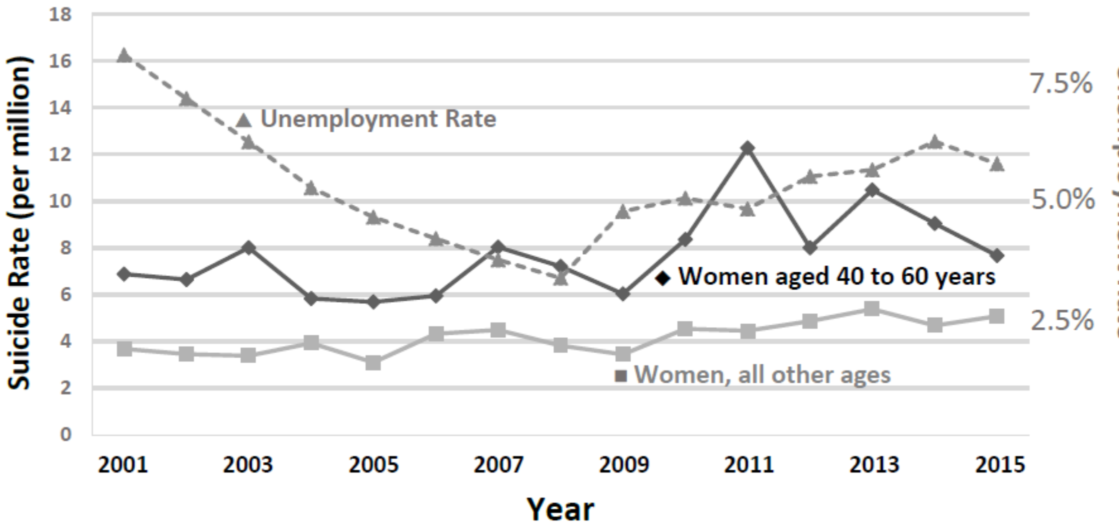

Figure 15. Brisbane metropolitan area: yearly female suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

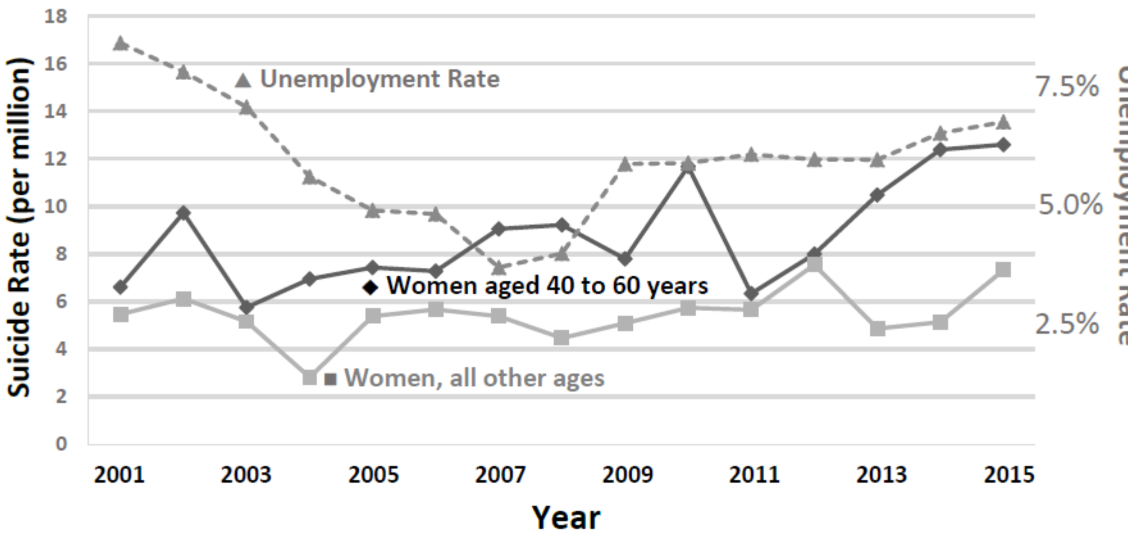

Figure 16. Queensland excluding Brisbane metropolitan area: yearly female suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

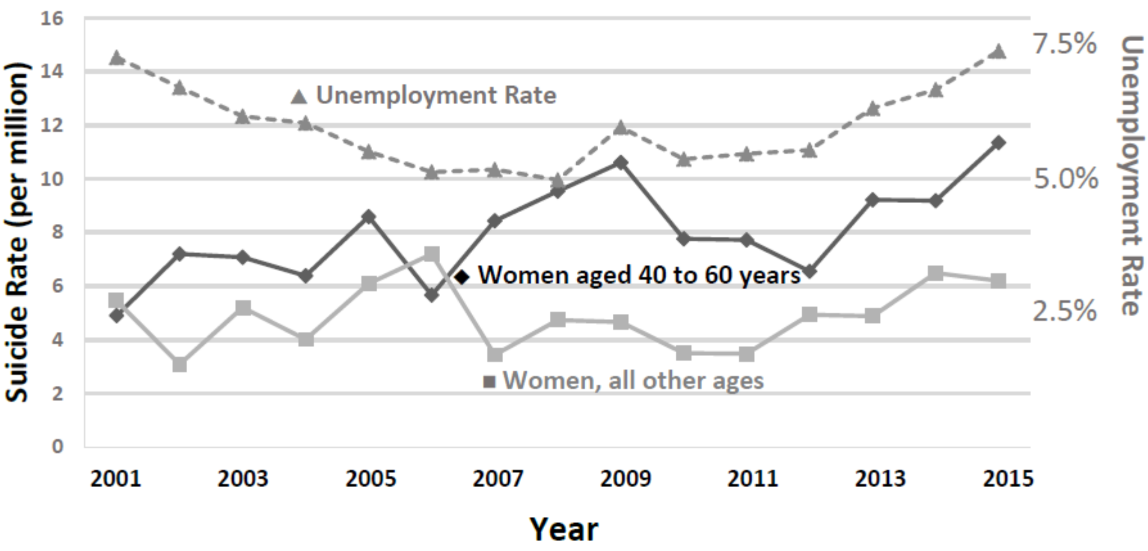

Figure 17. Adelaide metropolitan area: yearly female suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

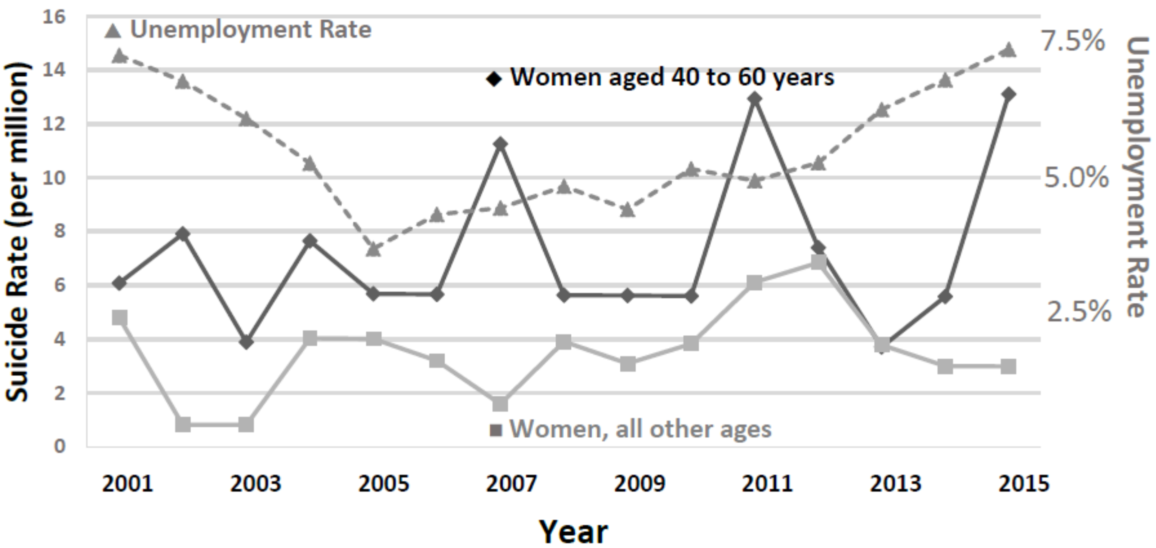

Figure 18. South Australia excluding Adelaide metropolitan area: yearly female suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

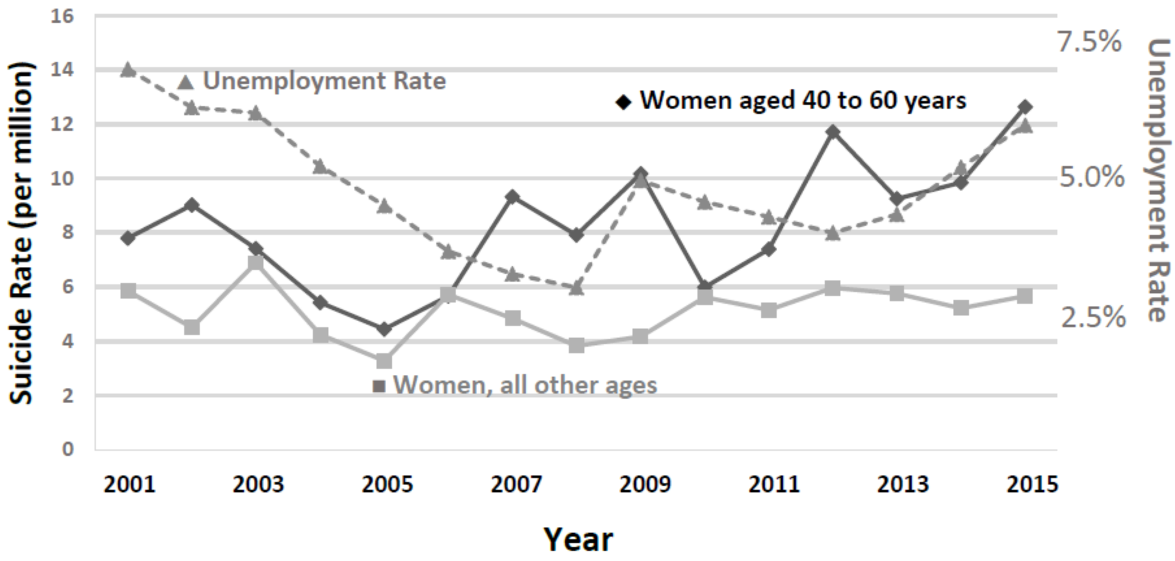

Figure 19. Perth metropolitan area: yearly female suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

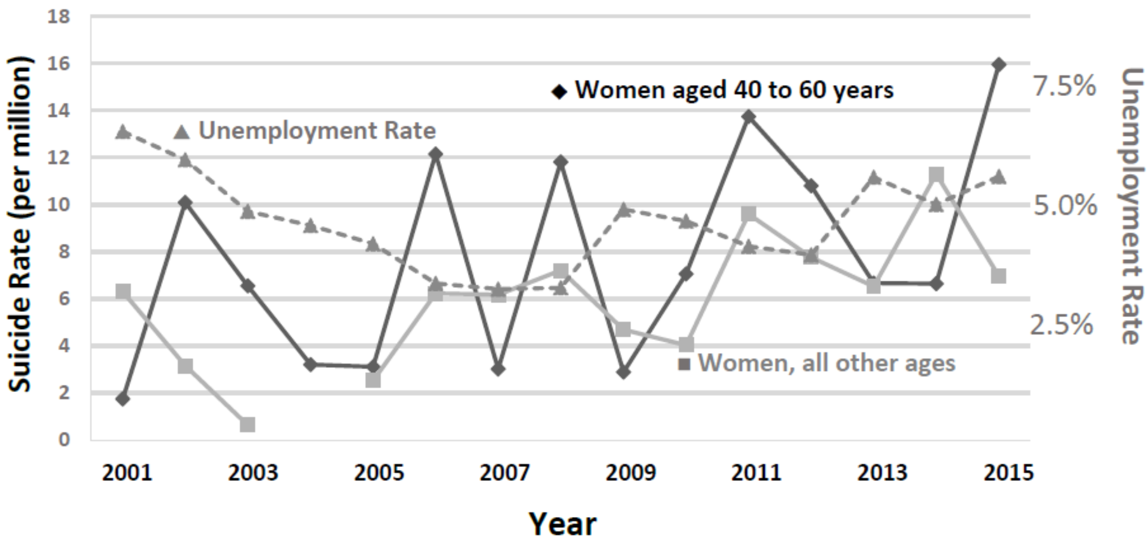

Figure 20. Western Australia excluding Perth metropolitan area: yearly female suicide rate (deaths per million) in two age bands (40 to 60 years; and, all other ages) plotted against average unemployment rate (%), 2001 to 2015 inclusive.

Overall, males had a higher suicide rate than females but the general trend of suicide rate between genders was consistent: this suggests that males and females were exposed to the same influential factors for suicide. While the suicide rates for all other ages remained relatively stable, both male and female midlife age groups showed a large fluctuation after 2009 when the global financial crisis occurred. The unemployment rate reflected the regional financial situation, showing an increase after 2009.

4. Discussion

The analysis revealed the relationship between the midlife suicide rates and the unemployment rates from two perspectives: one confirmed the association between financial stress and suicide rates suggested by the trend in the Australian historical data and the other literature; secondly, the midlife age group experienced a larger fluctuation than other age groups, especially in men. This prompted a secondary *post hoc* question: "is midlife suicide more sensitive to changes of financial situation than the other age group?" We conducted an in-depth analysis to study the marginal effect of financial stress to the midlife group. Results including the coefficients and p-values are shown in **Table 1**.

Table 1. Regression coefficients and significant values for unemployment rates from the mixed models for the historical suicide rates and the marginal suicide rates

Response	Gender	Coefficients	d.f.	P values
Suicide rate for 40-60 group	Male	0.85	1	*0.016**
	Female	0.25	1	0.167
Marginal suicide rate for 40-60 group[1]	Male	-0.01	1	0.513
	Female	0.02	1	0.815

[1]Marginal suicide rate is the ratio of suicide rates for the mid-life group compared to all other ages

To understand the direct association between suicide rates and unemployment rates for the midlife group, we used the suicide rates for the midlife age group as the response variable and the regional unemployment rates as the explanatory variable, conditional on the type of the region (rural or suburban). The first two rows in Table 1 show that midlife male suicide rate was positively associated with regional unemployment rates with a p-value of 0.016, while the female suicide rate did not show significant association with unemployment.

To understand the more in-depth marginal effect of financial stress on the midlife group, we studied the ratio of suicide rates for the mid-life group to all other ages. The ratio used the suicide rates of all other age groups as a baseline, and measured the margin of suicide rate for the midlife group, accounting for the underlying communal factor affecting suicide rates across all age groups at a given time period (for example, health and help facilities, intervention campaigns, etc). This enabled us to answer the question "is the midlife group prone to financial stress than other age groups?" The third and fourth rows in Table 1 show the association between the marginal suicide rates and the unemployment rates. Neither gender showed significant marginal association between financial stress and midlife suicide rate, which suggested that the middle age group is no more susceptible to suicide due to financial downturn than other age groups. The detailed implications of this result will be given in the next section.

Our study suggests that unemployment and suicide are closely linked, with a higher suicide rate and a larger fluctuation in midlife, a finding consistent with Case and Deaton (2015, 2017). The association is significant for male midlife suicide, but not with female midlife suicide, a finding consistent with Milner and colleagues' findings (2012). However, the unemployment rate does not explain the volatility directly since the midlife group is no more sensitive/vulnerable to change in financial situation than the general population.

5. Conclusion

We have assessed the association between midlife suicide rates and unemployment rates at the regional level in Australia and found that, for the midlife group, there was a rapid decrease in the rate from 1970s to 1980s. However, there has been increase in midlife male suicide rate associated with the 2008 global financial crisis, suggesting a link between financial stress and suicide rates. Taking regional unemployment rates as proxy indicator for economic uncertainty faced by individuals, we found suicide rates were positively associated with higher unemployment rates in midlife males but not in females. Rural areas showed a stronger association between the unemployment rate and the suicide rate than urban areas. Suicide is important from many perspectives. The loss of workers has a long-term effect on productivity, both in terms of workforce participation but also in consumption. Suicide represents the endpoint of a spectrum of poor mental health and wellbeing status, imparting a substantial burden with measurable effect GDP. On a personal level, it has profound effects families and communities, workplaces, and social networks. As Denney and colleagues (2009) frame it, "suicide is shaped by social forces, and unlike many causes of death, it does not result directly from degenerative disease or old age. The risk of suicide increases as individuals reach a point of disillusion or disconnect from the world around them."

Australia's industry structure has gone through fundamental changes in recent decades. A quarter of a century ago manufacturing was the largest employing industry in Australia. Today, it is the sixth largest and accounts for 7% of total employment. The decline of manufacturing has been caused by many factors, including technology and increased competition from overseas manufacturers. A recent narrative review has highlighted the impact of specific factory closures may have - such has been the case with the recent shuttering of the Australian automotive manufacture industry - leading to psychological distress, increased self-harm and suicide rates. (Myles, Large, Myles, Adams, Liu, & Galletly, 2017) Nonetheless, technology appears to be playing a large role in making certain jobs obsolete, while promoting other forms of employment. In particular workers who do routine, codifiable tasks are at risk of losing their jobs in the coming years with new industrial Taylorism.

Among the effects of the COVID-19 pandemic globally, it seems likely that spikes in unemployment may be associated with increasing rates of suicide in prime-aged members of the workforce on a global scale. The relationship between worsening employment, its consequences and adverse health impacts, including suicide, is a great tragedy that deserves further investigation. Determining the contributing and indeed, confounding, factors will assist in the evidence-based consideration of possible interventions for the impacts of unemployment on mental health and suicide. The time has come to drive back despair.

Disclosures

Nil to declare

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Networks Composition, a Relevant Factor to Their Resilience: Insights from Agricultural Innovation Platforms in Uganda

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Abstract
Management of project networks involves understanding the characterization of membership, in terms of breadth, depth, and motivations for joining. This study sought to assess the effect of network composition on resilience of project networks among agricultural innovation platforms (AIPs) in Central and South Western Uganda. Like any network, having the right number and value of members is critical in the formation and functioning of an innovation platform. The study was anchored on social network theory adopting explanatory research design grounded on positivistic research philosophy. The study population comprised of 220 actors with a stratified sample of 132 actors in the 22 AIPs in Central and South Western Uganda. Out of the 132 sampled actors, 103 were interviewed representing 78% response rate generally considered adequate for further data analysis. The study used SPSS to analyse data through descriptive and inferential statistics. All study variables were tested at a confidence level of 95%. Results revealed that network composition was moderately embraced among the AIPs but has a significant effect on resilience of project networks. Based on these conclusions, the study recommends that AIP leaders should put in place appropriate mechanisms, which encourage attraction and retention of members while according due attention to their individual interests. The study contributes to the body of knowledge by providing an empirical model, which can be easily adopted by AIPs as well as validating tenets of the theoretical framework by anchoring the study among agricultural based project networks.

Key words: Agricultural Innovation Platforms, Network composition, Project Networks, Resilience

1. Introduction

Globalization and search for sustainable project success has driven actors away from individualistic tendencies towards collaboration and networking (Adekunle, Oluwole, Buruchara, & Nyamwaro, 2013). This shift has led to formation of project networks in various configurations. As a unique development on a rising trajectory, project networks are attracting critical interest from an array of stakeholders (especially scholars) given the temporary nature of projects and the bureaucratic environments of organizations that sometimes house such endeavours (Burström & Jacobsson, 2012). A project network is as an arrangement consisting of nodes ordinarily occupied by strategic business units, households, firms, trade associations, and other types of organizations. Links (relationships) between nodes are manifested through interaction between actors (Kilelu, Laurens, & Cees, 2013).

Ensuring success of projects executed through networks involves putting in place systems that manage and support innovation processes and collaboration among actors (Gustafsoon, Larson and Svensson, 2014). As such, companies and project implementers join collaborative innovation networks to navigate increased complexity in science and technology, higher uncertainty and ever-increasing costs of implementing projects, scarcity of resources, as well as shortened life cycles of innovations (Kilelu, Laurens, & Cees, 2013). However, successful governance of project networks is constrained by their dynamic nature and difficulty in sustainably drawing actors together. Dynamics not well managed and interactions not sustained, make project networks vulnerable and non-resilient.

Resilience of a project network refers to its ability to establish institutional structures that enable it overcome shocks, learn from them, and emerge strengthened and transformed. Resilience is associated with an entity's inner capacities and ability to reconstitute after a shock or sustained attack (Aranda, Zeeman, Scholes, & Morales A, 2012). Beer (1984, 1989) in his famous 'Viable System Model' viewed resilience as the capacity of a network to quickly regain its original state after experiencing trouble. When project networks become resilient, they bring about consistency in project conceptualization and operationalization, relative permanency and reliability of critical governance structures, which together and overtime generate enormous efficiencies necessary for effective project delivery.

Their trajectory rising and importance in project management increasing, project networks continue to face numerous challenges such as unmet stakeholder expectations, low-level or collapsed innovations, corruption, resignation of leaders as well as conflict between actors (Provan & Kenis, 2018). To mitigate these challenges, it is imperative to have proper structures that can ensure resilience of networks and sustainability of projects implemented thereon (Muller, 2017). Achieving this objective calls for finding different ways of facilitating dense interaction amongst network actors so that they are deeply embedded in their interconnectedness. Facilitation of effective interaction and project success on these networks involves putting in place systems that manage and support innovation processes and collaboration (Larson and Svensson, 2014).

Agricultural project networks in the recent past take the form of Agricultural Innovation Platforms (AIPs). Like project networks, AIPs constitute of actors each with different interests that guide the relationships between them (Provan & Kenis, 2018). According to Adekunle (2013), AIPs are intermediary arrangements that bring different actors together in an innovation system with an aim of creating effective and sustainable change as well as to facilitate interactions and learning among stakeholders.

These AIPs provide "a forum in which multiple actors facing a common issue collaborate in identification of problems, share and develop new ideas to better solve those problems, and implement creative solutions to improve livelihoods" (Mulema, 2012). For this reason, they create space where different actors such as researchers, farmers, extension agents, traders, processors, development specialists, and policy makers, come together with an aim of facilitating effective, efficient and targeted interventions.

2. Network Composition and Resilience of Project Networks

Network composition refers to configuration and social construction of network actors in terms of numbers (breadth/density), contribution (depth/centrality), and motivation expressed in terms of actual or apparent interests in the network business. Project networks can be large or small, closed or open (to participation), wide or narrow in scope, deep or shallow in attribution. Therefore, investigating factors behind any network resilience logically calls for understanding the properties behind its composition. Having the right number and value of members is critical in the formation and functioning of innovation platforms (Nederlof & Pyburn, 2012). Understanding the characterization of membership, in terms of size (breadth), value (depth), and motivation (apparent and actual interests) is therefore a key antecedent to successful management of any innovation platform.

Diverse network ties are more likely to acquire diverse knowledge, because pursuing various types of ties affects innovation differently. Feng (2016) opined that diverse (open) networks create weak ties, which are sources of new knowledge and resources as these weak ties bridge gaps between individuals and their social environment. On the other hand, dense (close) networks create strong ties, which are important for positive interaction. However, for such relationships to add value in project networks, there needs to be proper matching between actor positions.

In network formation and management, understanding diverse network actors' interests is key to successful management of collaborations hence resilience. This is because actor motivation to participate in a network influences the nature and outcome of collaborative efforts (Mo, Hayat, & Wellman, 2015). Moreover, literature advances that pursuing strong and long-term relationships with key actors is imperative to avoiding problems associated with discontinuities between projects (Sariola & Martinsuo 2015). It is further advanced that the number of network participants (breadth) has a positive influence on network resilience (Teirlinck & Spithoven 2015).

To understand and establish the relationship existing between network composition and resilience of project networks, the study hinged on the social network theory, which explains a network in terms of nodes and ties whereby nodes are the individual actors within networks and ties are the relationships between actors (Wasserman & Faust, 1994). A social network is therefore a collection of all nodes interconnected by related ties among them. Scholars agree that social network theory is important in explaining relationships (ties) among different actors (nodes) and analysis of formations created out of inter-actor connectedness. Relationships (ties) between actors can be weak or strong depending on the depth and density of their interaction (Granovetter, 1983). This line of thinking forms a very important theoretical foundation to the study of project networks, composition of actors and the governance of their interactions. Conversely, understanding actor composition and their cultural orientations as underpinned by the social network theory, is key to interrogating and understanding their relationships; a very relevant component to this study.

Characterizing network composition can be by size (breadth) and quality of membership (depth) as propagated by (Laursen & Salter, 2006). In their study, they measured breadth as the size of network membership in terms of number of actors; how many members a given network has irrespective of their contribution towards network objectives. On the other hand, network depth was measured as the extent to which different actors influence one another and direction of the network towards achieving common goals.

Teirlinck and Spithoven (2015) studied how network characteristics influence outcomes of publicly funded university research initiatives and found out that number of actors (breadth) is important in stimulating basic research while importance of actors (depth) is important in inspiring action (use) based research. In addition, Sariola and Martinsuo (2015) used a conceptual approach to investigate project networks in a construction industry to appreciate strengthening of third party relationships. The study systematically reviewed empirical literature on project networks, third-party relationships and their strength. Results indicated that for a network to be resilient and outlive the projects implemented thereon, managers/facilitators must realize and take into account the different (unique) interdependencies (ties) which bring diverse actors together.

In the study by Mo, Hayat and Wellman (2015) on motivation for collaboration in scholarly networks it was concluded that actor motivation to participating in a network influences the nature and outcome of collaborative efforts. In addition, understanding different motivations behind diverse network actors is key to successful management of collaborations. For example, the study established that three types of motivation, that is, practical issues, novelty-exploration, and networking drive scholars to network. Results further revealed that showing interests in networking opportunities does not necessarily translate into actual interactions, until there is active involvement of all network stakeholders to enhance their collaborative ties.

Hao and Feng (2016) in their study on insights to understand how heterogeneity in the content of network ties affects radical innovation relied on existing empirical literature to develop a theoretical framework for analysing relationships between network and radical innovation. The study evaluated three types of ties (buyer-supplier, peer collaboration, and equity ties) to demonstrate that network ties can be effective sources of knowledge leading to radical innovation. Thus, the more the network ties a firm has, the more ability it has to acquire diverse knowledge, and pursuing different ties results in different effects on radical innovation. Particularly, buyer-supplier ties and peer collaboration ties contribute to radical innovation by providing a direct path to heterogeneous knowledge (direct effect), while equity ties spur radical innovation in an indirect way (moderating effect). The study further established that diverse (open) networks create weak ties while dense (close) networks create strong ties, important for positive interaction.

However, although there exists vast literature on network composition, majority of studies on formation, functioning, and operationalization of AIPs were conducted by biophysical scientists and to a smaller extent by social scientists. Few of the reviewed studies investigated the coordination of such collaborative efforts from a management perspective. Further, the review of literature revealed that most network managers continue to borrow (with minimum or no creativity) traditional management discourses with no purposeful consideration to the fragility, complexity and dynamic structural and process configuration of project networks. The study found that there existed conceptual, empirical, and methodological gaps in the literature and hence sought to investigate the effect of network composition on resilience of AIPs.

3. Methodology

The study adopted a positivist research philosophy, which contends that a researcher is independent of research subjects, is able to design a research strategy based on existing theory to draw research hypotheses, use a rigorous methodology to enable replication, and quantify all the responses to allow for statistical analysis (Almalki, 2016). The study also used explanatory research design in order to characterize and understand study subjects, while explaining casual relationships between variables as advised by Saunders, Lewis, & Thornhill, (2009). The target population was drawn from actors who participate in Agricultural Innovation Platforms located in Central and South Western Uganda. A total of twenty-two (22) active AIPs, each with six (6) actor organizations i.e. farmers, processors/ traders, researchers, extension agents, government agents and NGOs. Six (6) respondents, each one representing the different categories of actors, were selected from each of the 22 AIPs making a total of 132 respondents.

Data was collected using a semi-structured questionnaire. This enabled the investigator to get informed responses from the respondents while allowing them to provide further insights beyond structured questions. The questionnaire was designed to collect background information of the respondents as well as their opinions on network composition and resilience of project networks among agricultural innovation platforms in central and southwestern Uganda. The study used a survey strategy for data collection, because it allows the researcher to collect data from a sizeable sample at a reasonable cost. The data collection exercise used online software installed on computer tablets and linked to a cloud server. The independent variable of the study was network composition while resilience of agricultural innovation platforms was the dependent variable. Network composition was operationalized through; breadth & depth, apparent and real interest while resilience of project networks was operationalized through; innovativeness, sustainability and reproduction.

Analysis of data was conducted using both descriptive and inferential techniques. In order to characterize variables of interest in the study, descriptive statistics such as mean scores, standard deviation, percentages, and frequency distribution was computed. The study also applied inferential statistics to establish the nature and strength of relationship between network composition and resilience of project networks among agricultural innovation platforms. The direction and strength of relationship between variables was measured using Pearson Correlation Coefficient. In addition, the coefficient of determination, R^2, was computed to measure the extent by which the changes in resilience of project networks are attributable to changes in network composition. The study also carried out the Analysis of Variance (ANOVA) test to confirm whether the selected empirical model was fit for the study. All hypothesized relationships, were analysed using multiple regression. The research hypothesis was tested at 95% confidence interval. The adopted model was summarised as follows:

$$\mathbf{RAIP = \beta 0 + \beta 1\ BD + \beta 2CO + \beta 3AA + \beta 4AR + \varepsilon}$$

Where:

RAIP: - Resilience of project networks among the AIPs
β0: - intercept
β1: - coefficient of breadth and depth
β2: - coefficient of closeness and openness
β3: - coefficient of apparent actual interest
β3: - coefficient of attraction and retention

ε: - Error Term

4. Results and Discussions

4.1 Reliability of the Research Instruments

The study sought to determine the validity and reliability of the research instrument. Face validity and content validity were tested through research experts. The examination of the instrument confirmed their completeness, understand-ability and plausibility of the research items. Further, the constructs had a validity index greater than 0.5 suggesting that the instrument questions were valid in measuring the constructs. Reliability of the research instrument was tested via internal consistency using Cronbach's alpha. The results of the analysis were as shown in Table 1.

Table 1: Summary of Reliability Statistics

Variable	**Cronbach's Alpha**
Breadth/ depth	.826
Closeness/ openness	.814
Apparent/ Actual interests	.838
Attraction and Retention	.792
Resilience of project networks	.863
Overall	.827

Source: Research Data (2019)

The results in Table 1 indicate that the overall reliability coefficient was equal to 0.827. Specifically, the Cronbach's alpha coefficient for Breadth/ depth was 0.826 that of closeness / openness was 0.814, apparent / actual interests 0.838, attraction, and retention was 0.792 while that of resilience of project networks was 0.863. According to Field (2013), a Cronbach's alpha greater or equal to 0.7 indicates adequate Reliability. Field (2013) further stated that the higher the Alpha, the higher the consistency, hence higher reliability. Based on these recommendations, the study concluded that the research instrument was reliable.

4.2 Descriptive Results

The study sought to determine the effect of network composition on network resilience among agricultural innovation platforms in Central and South Western Uganda. The respondents were asked to show the extent to which they agreed on statements concerning variables of the study on a 1-5 likert scale in which 1 represented 'strongly disagree, while 5 represented 'strongly agree'. The study sought to determine the effect of network composition on network resilience among agricultural innovation platforms in Central and South Western Uganda.

4.2.1 Descriptive statistics for Network Composition

Table 2 below presents a summary of the characteristics of network composition through means and standard deviation.

Table 1: Descriptive Statistics for Network Composition

	N	Min.	Max.	Mean	Std. Dev.
Breadth and depth					
The AIP attracts membership from at least 5 occupations e.g crop growers, cattle keepers, teachers, Medics etc	103	2	5	4.28	0.692
The AIP has a membership of at least 500 members.	103	1	5	2.96	1.236
Average				**3.62**	**0.964**
Closeness/openness					
There are no restrictions to join our AIP in regards to resource base or status	103	2	5	4.21	.762
The AIP always seeks to attract new membership	103	2	5	4.01	.869
All new actors are required to pay membership fees	103	1	5	3.69	1.213
Average				**3.97**	**0.948**
Apparent/Actual interests					
The objectives of the AIP are clearly outlined	103	2	5	4.24	.602
All members know the main objectives for which the AIP was founded	103	1	5	3.77	.931
Members are encouraged to openly discuss individual objectives for joining the A	103	1	5	2.94	1.153
Average				**3.65**	**0.895**
Attraction and Retention					
AIP leadership deliberately makes efforts to obtain feedback from members who leave the IP	103	1	5	3.50	.979
Leadership allows non-members to attend AIP meetings	103	1	5	3.45	1.194
The AIP has following-up programme for new members to help them properly integrate in the AIP	103	2	5	3.39	.854
The AIP has a mechanism of following up to assess whether individual objectives are met	103	1	5	2.55	1.026
Average				**3.22**	**1.013**
Aggregate for network composition				**3.615**	**0.955**

Source: Research Data (2019)

Table 2 shows an average mean score of 3.615, which implies that the respondents agreed that network composition was embraced to a great extent among AIPs. At the same time, results indicated that respondents did not differ significantly in their opinions about embracing network composition among the AIPs as shown by a low standard deviation of 0.955. These findings are consistent with those of Sariola and Martinsuo (2015) on project networks who concluded that for a network to be resilient and outlive the projects implemented thereon, managers/facilitators must realize and take into account the different (unique) interdependencies (ties) which bring diverse actors together. By understanding how to manage, coordinate and control different types of relationships successfully, workflow procedures can be improved and better relationships formed at all levels in the network.

Largely, respondents agreed that AIPs were open to new members as shown by a mean score of 3.97. This included the fact that AIPs welcomed new members regardless of their resources or social status. Besides, AIPs actively attracted new membership and charged low or no membership fees. The low standard deviation of 0.948 showed limited variation in the observations made by the respondents suggesting general agreement in the responses.

AIP actors' interests had a mean score of 3.65 indicating that respondents largely agreed that actor interests were being given due consideration. Majority of respondents opined that objectives for forming the AIPs were well outlined and known to members. On the other hand, members' individual interests were not accorded due importance which could affect morale and continued participation. Results suggest that leadership was prioritizing AIP interests over actors' personal interests. The practice is not necessarily bad but to avoid suppressing personal drive, which is necessary for interaction, it is important that leadership at least knows what those personal interests are. The low standard deviation of 0.895 shows that majority the respondents agreed that actor interest is an important element of network governance.

Mean score for breadth and depth was 3.62 meaning that respondents largely agreed that AIPs observed breadth and depth in their operations. This implies that size and diversification in AIP membership was highly regarded as a determinant for network resilience. Majority of respondents had a common view on breadth and depth as shown by low standard deviation of 0.964. Most AIPs observed depth as shown by a mean score of 4.28 and a low standard deviation of 0.692. However, AIPs moderately observed breadth of network composition as shown by a mean score of 2.96.

Attraction and retention of members had mean score of 3.22 meaning that respondents agreed to a moderate extent that AIPs attracted and retained members. This implies that AIP actors believed that attraction and retention affected network resilience to a moderate extent. However, respondent's opinion about the adoption of elements for attraction and retention varied as indicated by a high standard deviation of 1.013.

The finding that closeness/openness, apparent/actual interests, attraction and retention of members affect network resilience of AIPs is in line with the conclusion by Sariola and Martinsuo (2015) that managers should appreciate and take into account unique interdependencies, which bring actors together for their networks to be resilient and outlive implemented projects. Further, Martey, Etwire, Wiredu and Dogbe (2014) observed that willingness of actors to participate in networks is influenced by a number of factors such as platform activities and distance covered. For these reasons, we find that composition greatly affect network resilience. Moreover, Mo, Hayat and Wellman (2015) concluded that collaborative efforts among actors are a necessary condition for network resilience. Therefore, there is need to deal with practical issues such as giving attention to interests of individual members in the AIPs, minimizing restrictions for joining AIPs, making efforts to obtain feedback from members, as well as exercising novelty-exploration to motivate network actors.

4.2.2 Descriptive statistics for resilience of project networks.

Table 3 below shows presents a summary of the characteristics of resilience of project networks through means and standard deviation.

Table 2: Descriptive Statistics for Resilience of Project Networks

	N	Min.	Max.	Mean	Std. Dev.
Network innovativeness					
AIP members are encouraged to generate and share new ideas.	103	2	5	4.29	.651
This AIP is known for generating at least two new ideas/products per year.	103	2	5	4.00	.863
Average				**4.145**	**0.757**
Network sustainability					

This IP has a clear vision and written business plan that signifies staying in operation into a foreseeable future	103	1	5	3.30	1.187
Innovations generated on this AIP (new products, value chains or processes) survive and grow to maturity (for a minimum of 2yrs)	103	1	5	3.63	1.094
Average				**3.465**	**1.141**
Network reproduction					
This AIP encourages replication of similar activities by other farmer groups wit	103	2	5	3.90	1.005
There are at least 2 farmer groups adopting the AIP approach, thus potential of	103	1	5	3.75	1.045
Average				**3.825**	**1.025**
Average for Resilience of Project Networks				**3.812**	**0.974**

Source: Research Data (2019)

The findings show that resilience of project networks had a mean score of 3.812 indicating that a good number of the respondents agreed on the presence of resilience among the AIPs. Results also showed that there were minimal variations on the respondent opinions about resilience of project networks as indicated by a low standard deviation of 0.974. These results are consistent with those of (Aranda et al, 2012) who stated that a firm's inner strength or resourcefulness reinforces its ability to bounce back after a shock or sustained attack.
Further, respondents generally agreed that AIPS practised network innovativeness as shown by a mean score of 4.145. A low standard deviation of 0.757 shows that majority of the respondents agreed that network innovativeness plays a major role in achieving network resilience. Additionally, results showed a mean score of 3.825 for network reproduction meaning that a good number of respondents agreed that AIPs were showing indicators of network reproduction. Respondents however varied in their opinions concerning capabilities for network reproduction as shown by a high standard deviation of 1.025. Moreover, majority of respondents agreed on the potential achievement of network sustainability in the AIPs as shown by a mean score of 3.465. This implies that AIPs were showing considerable signs of network sustainability. There was however a high variation of observations as shown by a high standard deviation of 1.141.

*4.3 Correlation Analys**is***

The study conducted correlation analysis to establish direction and strength of the relationship between study variables. Dancey and Reidy (2004) recommend that correlation coefficient of one (1) shows a perfect correlation while a coefficient of between 0.7 and 0.9 shows strong correlation. On the other hand, a coefficient of between 0.4 and 0.6 indicates moderate correlation while a coefficient of between 0.1and 0.3 shows a weak correlation. A zero (0) coefficient indicates no correlation. The results were as shown in table 4 below.

Table 3: Correlation coefficients for Network Composition

		Resilience	Breadth /depth	Closeness/ openness	Apparent/ Actual interests	Attraction and Retention
Resilience	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	103				
Breadth/ depth	Pearson Correlation	.324**	1			
	Sig. (2-tailed)	.001				
	N	103	103			
Closeness/ openness	Pearson Correlation	.411**	.202*	1		

	Sig. (2-tailed)	.000	.040			
	N	103	103	103		
Apparent/ Actual interests	Pearson Correlation	.568**	.335**	.384**	1	
	Sig. (2-tailed)	.000	.001	.000		
	N	103	103	103	103	
Attraction and Retention	Pearson Correlation	.446**	.250*	.386**	.490**	1
	Sig. (2-tailed)	.000	.011	.000	.000	
	N	103	103	103	103	103

**. Correlation is significant at the 0.01 level (2-tailed).

The results in Table 4 show that correlation coefficient between Resilience and Breadth & depth was 0.324, which indicates a weak positive correlation. The results also showed that correlation coefficient between resilience and closeness and openness was 0.411, which indicates a moderate positive correlation. Resilience and apparent actual interests had a correlation of 0.568, which indicates a strong positive correlation. In addition, attraction and retention had a positive moderate correlation with resilience as indicated by a coefficient of 0.446. All the coefficients had a p-value of less than 0.05 implying that the variables were significant.

4.4 Regression Analysis Results

Multiple regression analysis was conducted at 95 percent confidence level (0.05 level of significance). The model summary results were as shown in Table 5.

Table 4: Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.633[a]	.400	.376	.57566

a. Predictors: (Constant), Attraction & Retention, Breadth and depth, Closeness & openness, Apparent Actual interests

Source: Research Data (2019)

The results in table 5 show that the correlation coefficient (R) was 0.633 implying that there was a strong relationship between network composition and resilience. In addition, the results indicated that the coefficient of determination adjusted R Square (R^2) was 0.376 implying that network composition (attraction & retention, breadth and depth, closeness & openness, apparent actual interests) predicted 37.6% of the variations in resilience of project networks among the AIPs. These results imply that 62.4% of the variations in resilience of project networks was predicted by factors outside the model.

To establish the Fitness of the model in predicting resilience of AIPs in south western Uganda, the study conducted an Analysis of Variance (ANOVA) and the findings are as indicated in Table 6

Table 5: ANOVA[a]

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
	Regression	21.671	4	5.418	16.349	.000[b]
1	Residual	32.476	98	.331		
	Total	54.147	102			

a. Dependent Variable: resilience

b. Predictors: (Constant), Attraction & Retention, Breadth and depth, Closeness & openness, Apparent Actual interests

Source: Research Data (2019)

From the results in table 6, the F statistic for the model was 16.349, greater than the F critical of 2.464 implying that the model was fit to predict resilience of project networks. Moreover, the P value was found to be 0.000, less than the 0.05 level of significance indicating that the model was significant in predicting resilience of project networks among AIPs in central and south western Uganda.

To determine the significance of the model coefficient and the constant, the study conducted a t-test for the study coefficients and the findings are as indicated in Table 7.

Table 6: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.539	.436		1.235	.220
Breadth and depth	.120	.084	.120	1.432	.155
Closeness openness	.196	.096	.179	2.046	.043
Apparent/Actual interests	.421	.105	.380	3.999	.000
Attraction and Retention	.168	.097	.161	1.732	.086

a. Dependent Variable: resilience
Source: Research Data (2019)

Table 7 indicates a constant coefficient of 0.539 meaning that all factors held constant at zero, resilience of project networks would be equal to 0.539. Breadth and depth had a coefficient of 0.120 implying that all factors held constant, and breadth and depth increased by one unit, resilience of project networks would increase by 0.120. In addition, the coefficient for closeness and openness was 0.196. This means that all factors held constant and openness and closeness increased by one unit, resilience of project networks would increase by 0.196. Apparent/actual interest had a coefficient of 0.421 implying that holding all the factors constant and increasing apparent actual interest by one unit, resilience of project networks would increase by 0.421. Moreover, attraction and retention had a coefficient of 0.168 implying that all factors held constant and attraction and retention increased by one unit, resilience of project networks among the AIPs would increase by 0.168. Based on these findings, the study finds that apparent actual interests had the highest effect on project resilience (42.1%) followed by closeness and openness (19.6%), attraction and retention (16.8%), while breadth and depth had the least effect (12%) on resilience of project networks.

The results also indicated that breadth and depth had t-value of 1.432, closeness/openness 2.046; apparent/actual interests 3.999 while attraction and retention had 1.732. All the variables other than breadth and depth had t-values greater than the critical of 1.661 at 0.05 level of significance implying that apparent/actual interests, attraction and retention, and, closeness and openness significantly affected resilience of project networks. Breadth and depth had no significant effect on resilience of project networks. Summarized model is as follows;
RAIP = 0.539 + 0.120 Breadth and Depth +0.196 Closeness and Openness + 0.421 Apparent/Actual interest +0.168 Attraction and Retention

The findings are consistent with Sariola and Martinsuo (2015) who concluded that for a network to be resilient and outlive the projects implemented thereon, managers/facilitators must realize and take into account the different (unique) interdependencies (ties) which bring diverse actors together. Uniqueness of ties is characterized by diversity of apparent and actual interests that define the direction of relationships between actors. Similarly, Reinholt, Pedersen and Foss (2011) found out that an actor's central position in a project network is considered as advantageous, because it provides the actor with direct access to other network members and makes it visible. Literature showed that centrally positioned (widely and deeply connected) network actors are deemed beneficial, because their central positions allow direct access to other network members and enhance network visibility to the outside space. More diverse network ties lead to acquisition of diverse knowledge and information sharing which eventually lead to resilience of AIPs. This study makes a conceptual contribution by showing the influence of actor apparent and real interest on resilience of project networks, not given prominent consideration by previous scholars. The study also empirically shows the relationship existing between network composition and resilience of AIPs. Although conducted in Central and South Western Uganda, the empirical rigor makes the study results generalizable to other contexts.

5. Conclusion

The study sought to assess the effect of network composition on network resilience among agricultural innovation platforms in Central and South Western Uganda. Results showed that although some AIPs required new actors to pay membership fees, majority of them were largely committed to attracting new members irrespective of their resource base and status. It was also established that AIPs in central and South-western Uganda adopted breadth and depth of AIP membership to a large extent. On the other hand, attraction and retention of AIP members was embraced to a moderate extent. Apparent/Actual interests were found to bear the greatest impact on resilience of AIPs. Regression results also showed that network composition was significant in predicting network resilience. Based on these results, the study concluded that network composition has a significant effect on network resilience among agricultural innovation platforms in Central and South-western Uganda.

6. Recommendation

The study established that network composition, measured using breadth and depth closeness and openness, apparent and actual interests as well as attraction and retention, was largely embraced among the AIPs. It was also concluded that network composition was significant in predicting network resilience. For this reason, the study recommends that leaders should put in place appropriate mechanisms which encourage attraction and retention of members. Leaders should balance closing and opening of the network to new members in order to ensure enough width (breadth) to attract many members and enough depth to attract centrally positioned actors. They can make targeted collaboration invitations or waive membership fees where necessary. Leaders should ensure that individual interests of members are accorded due attention. This is because both common and individual interests alike motivate actor attraction towards AIP activities. Where individual interests are disregarded, actors become disappointed and lose interest in AIP activities. Leaders should therefore make efforts to identify and as much as possible take care of actor individual interests.

7. Contribution to the Body of Knowledge

The study contributes to the body of knowledge by providing an empirical model, which AIPs can adopt for their networks composition aimed at achieving resilience. The study also contributes to the body of knowledge by validating tenets of the theoretical framework used in the context of agricultural based project networks.

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The Mediatory Role of Working Hours and Technology in the Relationship between Income and Social Cohesion in Ghana

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Abstract
This study aims at establishing the mechanism through which income/wage influences social cohesion using access to technology and working hours as mediating variables. There is a need for this exposition because indicators of social cohesion such as trust and political participation have experienced a downward trend following Ghana elevation to a middle-income country. The study used dataset from the sixth round of the Ghana Living Standard Survey (GLSS 6) which is a nationally representative survey and the data was analyzed using Structural Equation Modeling (SEM). The key findings are that income positively affects engagement in politics both directly and indirectly. The effects of income on trust, however, is negative. Another key information the study revealed is the crucial role technology plays in social cohesion. Access to technology was found to influence both trust (negatively) and political participation (positively).

Keywords: Social Cohesion, Trust; Income, Access to Technology, Working Hours, Political Participation, SEM

1. Introduction

Sub-Saharan African societies, until contemporary times, were mostly communal-based. Members of these communities saw themselves as one another's keeper. Trust and engagement in political activities by community members were intertwined in their social fabric of life (Avogo, 2013). However, recent statistics exhibits that the level of social cohesion in most sub-Saharan African countries including Ghana is dwindling. The 2005, 2008 and the 2012 Afro-barometer survey report indicated that Ghana is experiencing low and oscillating levels of social cohesion. Though the level of trust shot up from a rate of 0.368 in 2005 to 0.405 in 2008, the figure later plummeted to as low as 0.247 in 2012. A similar picture can be seen for social cohesion in general. The Afro-barometer survey report indicated that the figure for social cohesion dropped from 0.377 in 2005 to 0.365 in 2008 before bouncing back to 0.407 in 2012 (Langer, Stewart, Smedts, & Demarest, 2017). It must be noted that these relatively low indexes of social cohesion in general and trust are happening in an era when the nation is experiencing progression in its economic activities. Ghana has now moved from least developed to middle income economy with most of the economic successes occurring in the 21st century.

Though a great number of empirical studies have been devoted to investigating the effect of economic empowerment on social cohesion, little is known about the transmission mechanism through which the former affects the latter. This paper fills this gap by exploring the sequences by which economic empowerment influences social cohesion indicators such as trust level and political engagement in Ghana using working hours and access to technology as mediators.

2. Literature Review

This segment of the paper looked at literature relating to the effect of the two mediators on trust and political participation as well as how income is linked to the mediators.

2.1 Trust

Perhaps the most accepted definition of trust is by Mayer, Davis, & Schoorman, (1995). The authors defined trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party". It is an undisputable fact among studiers of trust that the concept is a multidimensional social construct (Lewicka & Krot, 2012). Its facets include interpersonal trust, institutional trust as well as trust in politics. Trust is often mentioned as pillar for effective relationships. It is so pivotal to social capital that it should be pursued if a desirable and stable society is to be attained.

2.1.1 Antecedents of Trust

2.1.1.1 Working Hours

There are a number of literature that support a negative relationship between working for more hours and the various forms of trust. Studies that investigated the relationship between work and interpersonal trust asserted that employees who work for long hours usually to have a poorer work-life balance (Yoon & Kang, 2016). Working for long hours can disrupts employees' ability to meet their family's responsibilities which negatively affect spousal as well as parent-child trust. The effect on long working hours on trust at the organizational level is not different from the above findings. For example, a study by Celma, Martinez-Garcia, & Raya (2018) revealed that one more hour at work reduced trust in management by 1.64%. Some plausible reasons for this relationship includes emotional exhaustion, psychological stress among others.

H1: More working hours dwindle trust among citizens

2.1.1.2 Access to Technology

There are mixed results in terms of the relationship between access to technology and interpersonal trust. Studies that have found a positive relationship between the two concepts asserted that technology aids people to be in constant communication with loved ones and can also discuss important issues with ease when one can't be with the other party in person. On the negative side, technology breeds unfaithfulness. Also, spending more time on the technological gadgets can distract partners from not having intimacy (Hertlein & Ancheta, 2014). The media has become an effective tool through which information on political institutions are gathered and citizens' perception are adjusted accordingly. On one side of the coin, studies have shown that the media provide information about inefficiencies in governments and hence can lower the trust people have in the political

institutions. On the flip side, it enables citizens to participate directly in decision-making process in governance which boosts trust in the government (Ceron, 2015).
H2: Access to technology can have either a positive or negative influence on trust

2.2 Political Participation/Engagement

Political engagements are those actions or activities that aim to impact on the state directly. Though earlier researches on this social concept focused narrowly on electoral modalities such as voting and election campaigns for political parties, newer generation of studies in this arena have been widened to encompass attending public meetings; writing articles for mass media; protests or speeches and so on (Park & Perry, 2008). In addition to promoting democracy, political participation plays a central role in the social connectivity of members of the society.

2.2.1 Antecedents of Political Engagement

2.2.1.1 Working Hours

Economic theories argue that time available to workers is devoted either to working or non-working hours. Though there is no guarantee that a reduction in working hours will be translated into non-market activities, it is a likely that on the average, people will participate more in political activities when they work for less hours (Kallis, Kalush, O'Flynn, Rossiter, & Ashford, 2013).

This is evidenced in numerous studies that have revealed a negative relationship between working hours and political participation (Solt, 2008; Quintelier, 2007; Jarvis, Montoya, & Mulvoy, 2005; Róbert, Oross & Szabó, 2016). The conclusions of these studies is summarized in the response of a participant in a survey. When asked about the effect of work on her social activities, Trish, a 30 year old American Indian female responded “No, I used to before I started working. I volunteered in social activities including politics. But not since I started working. It’s just too much. I don’t know how people work and volunteer” (Mcbride & Sherraden, 2004).
H3: The more time citizens spend at work, the less they will partake in political activities

2.2.1.2 Access to Technology

Technologies continue to play a key role in political engagements. Some scholars view ICTs as a source of political socialization that brings citizens closer to the political discourse (Valenzuela, Park, & Kee, 2009). Though there are new forms of ICTs, the traditional media continue to be influential in mobilizing people to participate in political discussions. For instance, using a survey of 1202 respondents, Ye, Xu, & Zhang, (2017) investigated the role the media plays in political participation in modern China. The number of variables used to represent the media included reading newspapers and watching television. The numerous multiple regression estimates revealed that all the indicators motivated people to engage in general public discourse.

It is agreed among many political scientists and scholars that the impact of the internet on political activities outstrips the traditional media. This is so because the former is fundamentally different from the latter in a number of way which all increase its efficacy vis-à-vis political participation. First of all, the internet aids its users (especially the youth) to get access to new information quickly and from diverse sources. This enhances them to be well-informed citizens which boosts their confidence to participate in political discussions (Stanley & Weare, 2004). Furthermore, Social Network Sites (SNS) like Facebook and Twitter permit users to create and join groups they have common interest to deliberate on matters that concern them. These platforms increase their internal and collective efficacies which embolden them to add their voices to political matters arising (Lenzi et al., 2015).

It is not surprising why there is a burgeoning literature that supports the positive effect of internet on political participation (Valenzuela et al, 2009; Stanley & Weare, 2004; Halpern, Valenzuela, & Katz, 2017; Campante, Durante, & Sobbrio, 2017).

H4: More access to technology boost political participation

2.3 Income

2.3.1 Effect of Income on Working Hours

The relationship between income/wage and hours of work is best explained by the labor-leisure theory. The school of thought posits that the effect of income/wage depends on the magnitude of the income (IE) and substitution effect (SE). If the SE outstrips the IE, then a rise in income/wage will result into a reduction in hours of work and vice versa.

There are enormous empirical literature that backs instances where total effect of wage rise on working hours is positive. For instance, Pastore & Verashchagina (2008) explored the socio-economic factors that influenced the labor supply for females in Belarus for the period of 1996 and 2001. The study used data from the Belarusian Household Survey with a sample size of 3818 and 3878 for the 1996 and 2001 surveys respectively. The Heckman two stage approach found out that hours of work is positively related to the hourly wage rate. Explicitly, a percent increase in the wage rate augmented working hours by 0.33 in 1996 and 0.32 in 2001 for Belarusian women. Similar results were attained by Ghatak & Madheswaran (2014), Rice (2005), Bhattarai (2017), (Kabeya, Sam, & Lufuke, 2015) and Zavodny (2000) who all investigated the effect of wage on working hours in different settings.

There are, however, studies whose findings differ from the aforementioned researches. Example of such studies is by Couch & Wittenburg (2001) who used data from Current Population Survey (CPS) to explore the effect of increment of minimum wage on hours of works of teenagers (aged 16 to 19). The several estimation techniques all revealed that working hours of teens are adversely affect when there is a rise in the minimum wage. Skedinger (2011) also studied the impact of a rise in real minimum wage which is collectively agreed upon on working hours among unskilled workers in the Swedish retail sector ranging from the year 2001 to 2005. The finding indicated that soaring minimum wages caused more separations and because separated workers spent fewer hours at workplace before separated, hours of work are less affected.
H5: Income can have a positive or negative effect on working hours

2.3.2 Effect of Income on Access to Technology

The emergence of new Information and Communication technological (ICT) devices have swollen up the collection of normal goods consumers demand. A number of studies have found a positive relationship between income and the usage of these ICT devices (Adikari, 2013; Ismail & Kaleem, 2013; Nishijima, Ivanauskas & Sarti, 2017; Suárez & García-Mariñoso, 2013). One plausible explanation is the direct link between income and the demand for normal goods and services. Another reason is that an increase in income can cause workers to substitute leisure for working hours and as a result devote some of their increased non-labor hours to surf on the internet, watch television and so on. It is worth noting that there are a few studies that showed no relationship between the two variables (Gorodetsky, 2015; Madden & Coble-Neal, 2003).
H6: There is a positive effect of income on access to technology

3. Methods

3.1 Source of Data

The data set used for the analysis of this study is the sixth round of the Ghana Living Standard Survey (GLSS 6). GLSS 6 is a secondary data which concentrates on the household as the main socio-economic unit. The Ghana Statistical Service (GSS) that conducted the survey employed a two stage stratification procedure in selecting the households. First of all, the country was stratified into ten groups in accordance with the number of regions. The data covers demographic characteristics of the household members.

3.2 Measurement Instrument

Items for the measurement of the three constructs (trust, political participation and access of technology) used in the study were obtained in the GLSS 6. Participants of the survey were asked to rank their responses to trust questions on a four-point likert scale ranging from “All the time” (1) to “ Not at all” (4). In the case of political participation, the respondents were asked the number of times they partook in certain political activities. The responses were also on a four-point likert scale anchored at “10 times or more” (1), “5-9 times” (2), “1-4 times” (3) and “0 time” (4). Questions on access to technology centered on how often the participants used certain technological devices in a day. Here too, the responses were on a four-point likert scale from “5 hours or more” (1), “below 5 but more than 3 hours” (2), “below 3 but more than 0 hours” (3) and “0 hours” (0). Figure 1 below summarizes the various relationships to be tested.

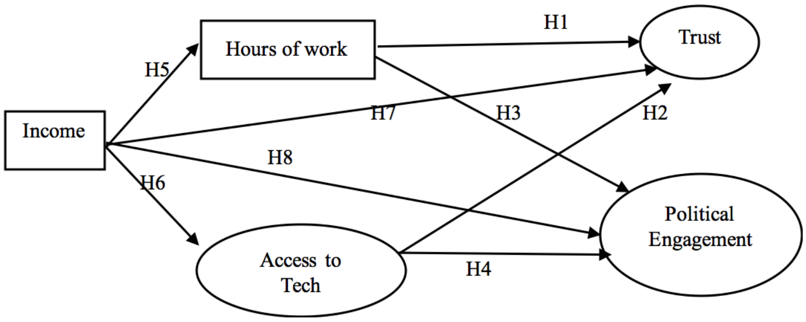

Figure 1. Research model

3.3 Issue of endogeneity

A segment of the model above suffer from endogeneity and no causal claim can be made if the anomaly is not corrected. Endogeneity occurs when the error term of a model correlates with any of the explanatory variable(s), that is $(E[\varepsilon_i \mid X_i] \neq 0)$. Causes of this problem includes simultaneity, measurement error, omitted confounding variable(s), selection biased, common-method variance and model misspecification (Antonakis, Bendahan, Jacquart, & Lalive, 2010). The part of the model where hours of work is affected by income/wage suffer from simultaneity as a result the latter variable is endogenous. Simultaneity occurs when there is reverse causality or the dependent variable reversely influences the explanatory variable. A widely accepted remedy for endogeneity is the two stage least square (2SLS) or instrumental variable estimation (Antonakis et al, 2010). The study used respondent’s belongingness to a trade union as the instrument since this variable is strongly correlated with wage but does not influence employee’s working hours. The error terms of the two stages were estimated to achieve a consistent results.

4. Data Analysis and Results

This study employed Structural Equation Modelling (SEM) to test the hypotheses stipulated in Fig. 1. Two stages are involved in this analytical approach. First of all, a Confirmatory Factor Analysis (CFA) was conducted to verify the validity of the measurement model. After that, a structural model analysis is used to estimate the structural relationships among constructs and test the various hypotheses.

4.1 Descriptive Statistics

The demographic profile of the 1677 participants used in the study is demonstrated in Table 1. Table 2 contained the mean, standard deviation, factor loading, Cronbach’s alpha, average variance extracted and composite reliability of the constructs. It also showed the mean and standard deviation of the various measures of the constructs.

Table 1. Demographic profile of Respondents N = 1677

Variable	Categories	N (%)	Variable	Categories	N (%)
Age Cohort	16 – 25	163 (9.72)	Educational	No Educ.	12 (0.72)
	26 – 35	471 (28.09)	Background	Basic Educ.	1394 (83.12)
	36 – 45	536 (31.96)		Sec. Edu.	189 (11.27)
	46 – 55	353 (21.05)		Ter. Edu.	82 (4.89)
	56 – 65	154 (9.18)			
Gender	Male	824 (49.14)	Marital	Married	1303 (77.70)
	Female	853 (50.86)	Status	Unmar./Div.	374 (22.30)

Table 2. Mean, Standard Deviation, Factor Loading, Cronbach's Alpha, Average Variance Extracted and Composite Reliability of indicators

Construct	Mean	SD	FL	CA	AVE	CR
Factor 1: Trust				0.895	0.716	0.938
How much do you trust people in your family?	2.95	1.04	0.703			
How much do you trust people in your village?	2.37	0.97	0.948			
How much do you trust members of other ethnic group?	2.10	0.87	0.831			
How much do you trust people in the same religion?	2.19	0.89	0.903			
How much do you trust business owners and traders?	2.34	0.89	0.846			
How much do you trust politicians?	2.33	0.93	0.828			
Factor 2: Political Engagement (within the last 12 months)				0.853	0.645	0.844
How many times did you attend a town meeting?	2.87	0.97	0.698			
How many times did you express your views on the media?	2.3	0.65	0.876			
How many times did you attend political rallies?	2.47	0.77	0.824			
Factor 3: Interest in Technology				0.916	0.828	0.935
On the average, how many hours do you use of the internet?	2.90	0.30	0.942			
On the average, how many hours do you use of the PC?	2.92	0.27	0.932			
On the average, how many hours do you use of the Ipad?	2.88	0.32	0.854			

4.2 Measurement model Analysis

4.2.1 Confirmatory Factor Analysis (CFA)

A confirmatory factor analysis (CFA) was conducted by the study using Stata 14. The relevance of this analysis is to test how best our data fit the hypothesized measurement model constructed based on theory. Thus CFA is used to verify the validity of the measurement model aspect of the SEM before the structural model is estimated. It also aids to explore the convergent and discriminant validity as well as the reliability of the various constructs in the measurement model. The results showed the measurement model was a good fit given the accepted cut-off values for the various criteria (Schreiber, Stage, King, Nora, & Barlow, 2006). The ratio of Chi to degree of freedom (Chi^2/df) was 2.36 which fell below the cut-off level of 3. The root mean squared error of approximation (RMSEA), on the other hand, was 0.028 and is below the threshold of 0.08. Furthermore, the Tucker Lewis index (TLI = 0.99) and the Comparative fit index (CFI = 0.993) were above their required value of 0.90 while the Standardized root mean squared residual (SRMR = 0.027) was also below the 0.08 cut-off point. It is worth noting that all the factor loadings for the various constructs surpassed the accepted value of 0.4 and were also significant at $p = 0.001$ as displayed in Table 2 above (Acock, 2013). The study employed Cronbach's alpha (CA), Composite Reliability and the Average variance extracted (AVE) to test the convergent and discriminant validity of the constructs. The Cronbach's alpha values for trust (0.895), political engagement (0.853) and interest in technology (0.916) in Table 2 were all above the 0.7 minimum standard value and hence demonstrated a high internal consistency of the constructs. The values for the composite reliability for the three constructs exceeded the 0.7 benchmark while their AVEs surpassed the required value of 0.5. These results affirmed the conclusion of the Cronbach's alpha. It can therefore be concluded that the measurement model fits the data very well and hence it is valid.

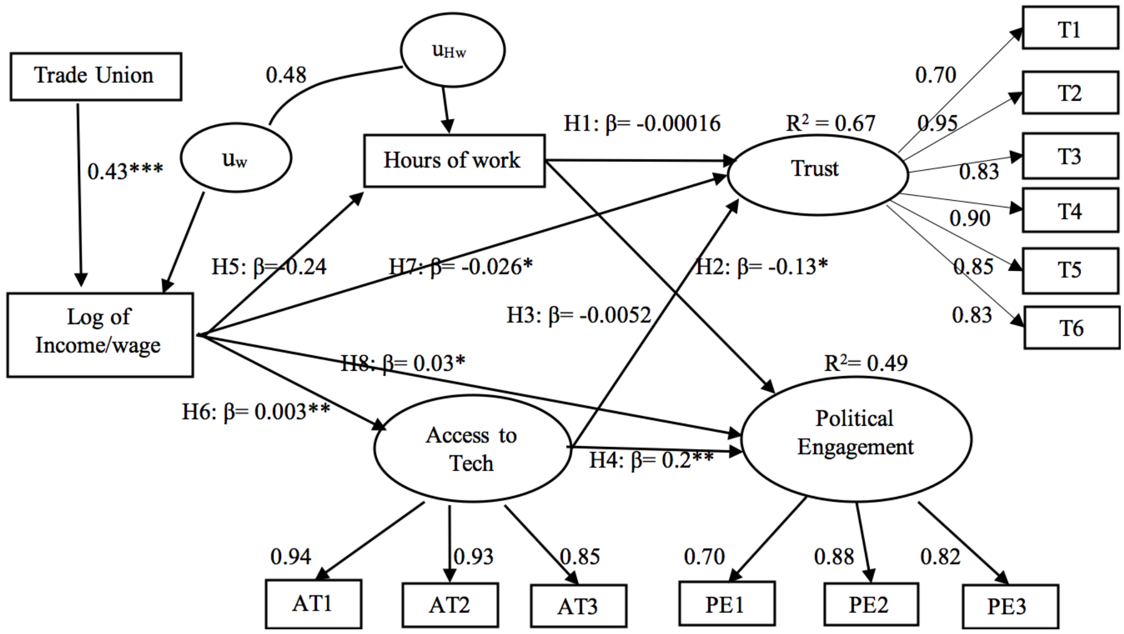

Figure 2. Structural model

4.3 Structural model analysis

Fig. 2 showed estimates of the structural relationship among the various measures and their significance levels. It was demonstrated from the figure that though income has negative effect on hours devoted to work (H5: β= -0.24, $p > 0.1$) and a positive impact on access to technology (H6: β= 0.003, $p < 0.05$), the effect on hours of work is not significant. Of the three variables (income, hours of work and access to technology) that are linked to trust, only hours of work has no significant effect on the latter. Income, access to technology, hours of work together with the covarites accounted for 67% of the total variation in trust ($R^2 = 0.67$).

It was further unearthed that income had positive and significant effect on political engagement (H8: β= 0.03, $p < 0.05$). In addition, hours of work was estimated to adversely affect participation in political activities. Lastly, the structural analysis showed that access to technology positively influenced engagement in political activities and the effect is significant (H6: β= 0.2, $p < 0.05$). Forty nine percent ($R^2 = 0.49$) of the total variation in political engagement was explained by the model.

It is important to note that the instrumental variable, that is respondent's belongingness to a trade union, strongly influence the endogenous variable (income/wage). The estimation brought to light that respondents who are members of a trade union earn more than those who are not unionized and the effect is significant at 1 percent. Also, the study computed the correlation between the error terms of income/wage and hours of work to attain consistent/unbiased estimates. It was found out that the correlation between the 2 error terms is significant figuring around 0.48.

The model is a good fit as all the fit indices met their required criteria. The ratio of chi square to degree of freedom (Chi^2/df) was 1.78 which fell below the cut-off point of 3. The root of mean squared error of approximation (RMSEA = 0.022) and standardized root mean squared residual (SRMR = 0.02) were all less than their threshold value of 0.08. Furthermore, the comparative fit index (CFI = 0.989) and Tucker Lewis index (TFI = 0.984) also surpassed their bench mark value of 0.9. It can therefore be concluded that the data is well fitted by the overall model.

5. Discussion

This study contributes to growing literature on social cohesion by exploring the mechanism through which income influences the latter. The estimations unearthed in the structural model give some major insights on how income influenced the two indicators of social cohesion which are trust and political engagement. However, the results should be interpreted with caution due to the following limitations. The study is cross sectional in nature and the unique culture of Ghana makes it difficult to generalize the findings. Also, the data did not include certain measures of trust and political participation which would have given a more appropriate estimate of the two constructs. Nonetheless, the findings uncovered in this study add to the ever-expanding empirical study on social cohesion.

First of all, the study revealed that income has both direct and indirect effects on trust. The study sought to find the influence of income on trust through two routes thus via hours of work and access to technology. Though it was found out that income does not influence trust through hours of work, the impact is significant and negative through access to technology. The implication is that trust tends to plummet among wealthier individuals due to their more access to technology. This result is consistent with the finding of Przybylski & Weinstein (2013) that with increased access to technological gadgets such as phones, internet etc. due to rise in income, intimate relationships are usually interfered with calls, texting, browsing and so on. Also, more access to technology can serve as a breeding ground for unfaithfulness and solitude. These effects can adversely affect the quality of relationship among individuals which can have a negative repercussion on trust.

Similar to the results in the case of trust, the study showed that the effect of income on political participation is both direct and indirect. Here too, the study investigated the impact of income on political participation via two paths thus through hours of work and access to technology. Similarly, the transmission through hours of work was found to be insignificant. However, it was shown that higher income boosted access to technology which also propelled participation in political activities. This result is not surprising as it dovetailed the findings of a number of studies which posited that with increased access to technology, both traditional and modern ICTs devices, citizens gain access to numerous information from diverse source which motivates them to partake in voting, attend election campaigns for political parties, public meetings, protest, contact public officials and so on.

6. Conclusion

The study succeeded in providing empirical answers for most of the hypotheses investigated. Several insightful revelations were made which can help foster social cohesion among citizens. In compliance with most literature, participation in political activities in Ghana is boosted when there is economic growth. Income, as evidenced by the estimation, positively affects engagement in politics both directly and indirectly. In contrast, the impact of economic growth on trust was negative. This disclosure can serve as a guide to policy makers that as economic growth is pursued, effective policies should be implemented to minimize the associated drop in trust level. Another key information the study revealed is the crucial role technology plays in social cohesion. Access to technology was found to influence both trust (negatively) and political participation (positively). This implies that access to technology by citizens should be given much attention in the pursuit of an effective democratic governance especially in Ghana. The results also signal to civic organizations as well as policy makers to institute appropriate measures to mitigate the adverse effect of technology on trust such as organizing community based social gathering anchored on efficient interactions and so on.

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Ethics of Marketing to Children: A Rawlsian Perspective

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Abstract
Children constitute an important demographic for marketers. Driven by their insatiable hunger for profits, marketers are recklessly and relentlessly targeting the children with their actions and promotions. However, there are growing concerns and widespread criticisms associated with marketing to children. With the arguments for and against marketing to children polarized to extremes, the assessment of moral strengths of these arguments would be of great importance and consequence. John Rawls, in his monumental book, Theory of justice, has provided us with a framework for examining and adjudicating the rightness or wrongness of an action in a fair and unbiased way. In this study, an attempt is made to examine the ethics of marketing to children from a Rawlsian perspective. From Rawls 'original position', behind the 'veil of ignorance', many criticisms associated with marketing to children stand their ground, making it next to impossible to grant blanket approval for actions of marketers targeting children. The instances of the use of force, coercion, and deception by marketers violate the Rawlsian ideas of justice. Further, the actions of marketers also contradict the principles of justice derived from the original position. From a Rawlsian perspective, marketing to children is anything but just.

Keywords: Marketing to Children, Marketing Ethics, John Rawls, Theory of Justice, Original Position, Veil of Ignorance

1. Introduction

Marketers consider children's segment extremely lucrative, for they buy products and services for their consumption, influence their parental purchases, and are also potential customers in making (McNeal, 1992; Mediasmarts, 2015). Recent estimates suggest that the children accounted for over a trillion dollars in their purchases, and influenced another $670 billion in parental purchases (Mayo & Nairn, 2009; Schor, 2004).

Driven by their greed for profits, the marketers are going all-out with their marketing promotions targeted at children, capturing them young and holding them captive for the remainder of their lives (Calvert, 2008). Changing demographics, permissive parenting, ubiquitous media presence, intrusive technologies, and insensitive regulators have aided marketers in targeting children. Marketers outfox the children and their parents by assessing specialized knowledge from the fields of anthropology, psychology, and sociology (Kunkel et al., 2004).

There is a fiercely contested on-going debate on the ethics of marketing to children which is polarized to the extremes (DCSF, 2009). Critics have vehemently argued that children lack the necessary cognitive and developmental abilities to decipher the persuasive intent behind marketing promotions and also lack the required defenses to resist the onslaught of marketers, making them uniquely vulnerable (Kunkel, 1988; C. Oates, Blades, & Gunter, 2002; Rozendaal, Buijzen, & Valkenburg, 2009). They launch a scathing attack on the marketers, terming their actions 'unfair', 'exploitative', 'hostile', 'toxic' and 'deceptive', with some critics even labeling them 'child molesters' (Linn, 2004; Moore, 2004; Nader, 1999; Palmer, 2007; Schor, 2004). Marketers have altogether a different take on the subject of marketing to children. Marketers insist that children are autonomous beings with recognizable needs and wants, who have every right to fulfill those needs and wants, just like the adults do (Cowell, 2001). Marketers often indulge in self-praise for the part played by them in developing the children into competent consumers (Cowell, 2001; Davidson, 1998; Kline, 2010). With the arguments for and against marketing to children polarized to such extremes, the assessment of the moral strengths of these arguments would be of great importance and consequence. John Rawls, in his monumental work, Theory of Justice, proposed widely accepted and valued philosophical arguments for examining the ethics of a subject in a fair and unbiased way. In this study, we examine the ethical issues arising out of marketing to children from a Rawlsian perspective. The arguments of Rawls with his concern for the most vulnerable parties of an agreement in cases of unequal power seems to be the most appropriate for examining the ethical issues concerning children. Employing Rawlsian principles, the ethics of marketing to children are examined through an imaginary 'Veil of Ignorance' from the 'Original Position'.

2. **Ethical issues in marketing to children**

There are growing concerns and widespread criticisms connected with marketing to children (Oates, Newman, & Tziortzi, 2014; Watkins, Aitken, Robertson, & Thyne, 2016). These concerns stem from the view that considers children to be 'uniquely vulnerable' who do not possess the requisite cognitive and developmental abilities to indulge in the marketplace activities. Researchers found that younger children do not recognize the difference between commercial and non-commercial content, increasing their susceptibility to marketing messages (Wartella, 1980). Marketers use their rational might and creative talents to further blur the difference by employing subtle and sophisticated forms of marketing (Grohs, Reisinger, Wolfsteiner, & Haas, 2013). The increased susceptibility of children results in undue advantage to marketers, thus granting them the position of power in their relationship with children. Previous researchers have exposed the vulnerability of children resulting from their inability to recognize the persuasive and selling intent behind the marketing messages, and employ the cognitive defenses to guard themselves against the actions of marketers (Edling, 1999; Kunkel et al., 2004; Rozendaal, Buijzen, & Valkenburg, 2011). The new-age hybrid models of communication and engagement have made it doubly hard for the children to decipher the motives behind the marketers' actions (Verhellen, Oates, De Pelsmacker, & Dens, 2014). Children's inability to decipher the intentions of marketers led to the actions of markets being labeled as 'unfair' or 'deceptive' (FTC, 1981). Also, the lack of 'skepticism' among children further increases their susceptibility and decreases their ability to resist the actions of marketers (Moses & Baldwin, 2005). Marketers are also accused of commodifying childhood and treating children as consumption vehicles driving their profits (Langer, 2004). The identities of children are woven around commodities, making it difficult for them to resist participation in market culture (Linn, 2004; Schor, 2004; Steinberg & Kincheloe, 1997). The reckless implication of children into the consumer culture was linked to a host of undesirable physical, social, and psychological outcomes. (Goleman, 1995; Hill, 2011; Kilbourne, 1999; Kline, 1993; Linn, 2004; Schor, 2004).Marketers are often criticized for promoting materialistic orientations among children(Opree, Buijzen, van Reijmersdal, & Valkenburg, 2014). The increased proclivity for materialism was linked to social, educational, psychological, and behavioural problems in children (Dittmar, Bond, Hurst, & Kasser, 2014; Ku, Dittmar, & Banerjee, 2012; Roberts & Clement, 2007; Vandana & Lenka, 2014). Marketers use children to 'pester' or 'nag' their parents into a purchase, which could lead to discontentedness and conflict when the purchase requests of the children are denied (Goldberg & Gorn, 1978; Nash & Basini, 2005; Powell, 2003). Driven by marketing promotions, children often employ unsophisticated persuasion strategies like whining or anger that could also lead to possible conflict with their parents (Buijzen & Valkenburg, 2007). Marketers are charged with promoting unsafe and unhealthy products to children, including tobacco, alcohol, and foods high in saturated fat, salt, and sugar, disregarding the health and well-being of the children (CTFK, 2012; NHTSA, n.d.; SAMHSA, 2016; WHO, 2008, 2018; WHO European Office., 2018). Also, the distorted image of body and self, promulgated by the marketers was linked to many unintended consequences, including body-dissatisfaction, eating disorders, and behavioral problems (Bissel, 2007; Neumark-Sztainer, 2005). The attempts by the marketers to sexualize childhood and objectify children are well documented (APA, 2007; O'Donohue et al., 1997; Reichert & Lambiase, 2003). Marketers are also criticized for assigning stereotypical roles based on gender in their promotions, which distorts the self-identity of the young girls and lowers their confidence (Kilbourne, 2004; Maker & Childs, 2003). Studies have found that the excessive use of violence in marketing promotions desensitizes the children, and promotes aggressive and violent behaviors in them (Anderson, Gentile, & Buckley, 2007; Shanahan, Hermans, & Hyman, 2003).

3. The Rawlsian Perspective

Rawls, a contractarian, believed that society is an arrangement of agreements, both implicit and explicit, that have been rationally agreed upon by its members, and that are to be followed by individual members (Rawls, 1971). He assumed that the ideal members of the society are 'moral', 'free', and 'equal' individuals, who possess the understanding of the rational good and have a sense of justice (Freeman, 2019). Since these members already held positions in society and also have access to factual knowledge, their judgments may be distorted, resulting in unfair principles or agreements. Rawls believed in 'justice as fairness', and designed a thought experiment, which he calls 'original position', to overcome the prejudices and distortion in our judgments resulting from the social positions held by us (Rawls, 2001). In the 'original position', the parties to the social contract have no access to information that might otherwise result in their inclination towards principles that are better suited to them, thus incorporating procedural justice (Rawls, 1971). The essential feature of the original position is the 'veil of ignorance'. Rawls, in his quest for fairness and equality, demands a thick imaginary veil on all participants, depriving them of the knowledge about the self, others, society, and its history (Freeman, 2019; Rawls, 1971). From the 'original position', behind the 'veil of ignorance', the philosophical ideas of justice gathered from various sources are examined, and the best possible conception of justice that advances their interest is chosen. Rawls thinks that only two principles of justice can be chosen from the 'original position' (Rawls, 1971). The first principle guarantees equal basic liberties to all individuals in society. Further, the second principle permits inequalities under the conditions of fair and equal opportunity, and those that favor the least advantaged (Rawls, 1971; Sandel, 2009). Rawls also attaches priority to liberty and opportunity over economic gains, making it impossible to trade-off between the two (Rawls, 1971).

4. Examining ethical issues from a Rawlsian perspective

To begin with, we examine what Rawls had to say about the question of whether children can be a party to the social contract. For Rawls, the parties to the social contract must possess two moral powers, having a conception of the good, and having a sense of justice (Rawls, 1999). Does that mean that children who possess limited capacities are denied the protection of justice that is granted to adults? Rawls explicitly states that any being with a capacity for moral powers, whether fully developed or yet to be developed, should receive complete protection under the principles of justice (Rawls, 1999). According to him, even the potentiality to moral powers is sufficient ground for claims to justice (Cahill, 2013; Rawls, 1999). Children grow up to become adults with fully developed moral powers required to become a party to the social contract. Such future potentiality substantiates their claim to be protected under the principles of justice. From the Rawlsian perspective, it is very unlikely that children will be a party to the social contract, nonetheless, they are granted complete protection under the principles of justice (Cahill, 2013; Rawls, 1999). Rawls also details reciprocal grounds for delivering justice, claiming that "those who can give justice are also owed justice" (Rawls, 1999). Accordingly, though the children do not have fully developed ideas of justice, they nonetheless have some understanding of it, and hence, deserve justice on reciprocal grounds (Cahill, 2013; Rawls, 1999). Thus, Rawls bestows upon children the equal rights to an adequate scheme of liberties and opportunities. Rawls also mandates the consideration of childhood circumstances while deliberating on the justness of action from the original position.

Let us examine the rightness or wrongness of the marketers in targeting children from the 'original position' behind the 'veil of ignorance'. In such a position, we don't know if we are marketers, parents, policymakers, social activists, or any other interested parties; we don't know the effect of our decisions on us; we don't know whether we tend to gain or lose in the process; we don't know our disposition towards marketing (in general) and marketing to children; we are unaware of our social and economic positions and limitations; we don't know if we are the majority or minority, and we don't know our interests and surrounding circumstances (Rawls, 1971). Original position remedies the moral arbitrariness and injustice resulting from the unequal distribution of primary goods (Hall, Journal, & Boynton, 1977). And, from such an impersonal and impartial position, we decide on the fairness of marketing to children. In such a position, do we wish to position the might against the meek? The marketers' fully developed rational capacities, unlimited access to knowledge, and resources grant them the position of might in their relationship with the children. The limited cognitive and developmental abilities of children leave them defenseless against the onslaught of marketers. What if, the vulnerabilities of our children are exposed, and are left alone to be exploited by the greedy marketers? Research suggests that children do not understand the intentions of marketers. In the absence of such an understanding, the actions of the marketers are deemed to be 'unfair' and 'deceptive'(FTC, 1981). From the Rawlsian perspective, there can be no justice in the absence of 'fairness'.

Rawls mandates that any idea of justice should be devoid of threats of force, coercion, deception, and fraud (Rawls, 1971). Cage (2012) in a scathing attack on marketers accused them of the use of intimidating, agitating, interrupting, pestering, nagging, poking, and stimulating tactics on children, which are intended at forcing the child to act in a market-desired manner. No right-thinking person would permit his/her child to be forced by a stranger (marketer). Marketers are also accused of targeting the gullible children, exploiting their emotional fragility, and coercing them into a purchase (IP, Mehta, & Coveney, 2007). Marketers are also accused of deceiving children in their quest for bottom lines. Marketers use a generous dose of 'puffery', a deceptive technique of making exaggerated claims, in their communications and promotions. Use of puffery with children who cannot invoke 'skepticism' as a cognitive defense would create false impressions and deceive them into favorable response or purchase. Marketers also confuse children to elicit a favorable response from them. Researchers have reported that fast food retailers use packaging and presentation to create a false association between their standard range of products and their healthier alternatives (Bernhardt, Wilking, Gottlieb, Emond, & Sargent, 2014). Do we allow the children to be deceived by marketers? With arguments claiming the presence of force, coercion, and deception in marketing communications targeted at children, the blanket approval for marketing to children from the original position seems next to impossible.

Marketers alter the reality around children's existence, linking their identities, happiness, and success with commodities. Commodities are woven into the fabric of their existence. Do we allow our children to become vehicles of consumption? Do we disregard the negative consequences associated with their reckless implication in commercial culture? Children are used as instruments to pester their parents into a purchase. The denial of purchase requests leads to anger and discontent, leading to conflict. Can we allow someone to induce conflict between parents and their children for their self-interest? Such conflict inducing actions, ignoring the resulting consequences, would be impermissible from the original position. Marketers exhibit a blatant disregard for the health and safety of children by promoting unsafe and harmful products to children. Marketers through their promotions entice and addict children to alcohol and tobacco, ignoring the staggering social and economic costs associated with it (CTFK, 2012; Grant & Dawson, 1997; Worland, 2015). They circumvent the laws that prevent them from doing so, showing scant respect to the agreed principles of social co-existence. They also conveniently ignore the research findings implicating them for their contributory role in the worldwide obesity crisis among young children. The present generation of children is the first in the last 200 years to have a shorter life expectancy than their parents (Olshansky et al., 2005). Do we permit the marketers to turn our kids into underage drinkers and tobacco consumers? Do we permit the marketers to cut short the lives of our children, and inflict suffering upon them? The attempts of marketers to sell unsafe and unhealthy products, endangering the lives of children, would never merit approval from the original position.

Marketers tap into the inner feelings and emerging curiosities of children, and in the process sexualize their childhood (APA, 2007; Bakan, 2011). The sexualization of childhood is associated with a range of negative consequences, including the lack of confidence, body dissatisfaction, eating disorders, depression, low self-esteem, and other social, psychological, and sexual problems (APA, 2007). Can we ignore the harmful effects of the sexualization of children, jeopardizing their health and well-being? Such attempts of marketers to sexualize childhood would be deplorable and unpardonable from the original position. Rawl's first principle of justice demands equality in the distribution of primary goods, including rights, liberties, opportunities, powers, income, wealth, and the social bases for self-respect (Rawls, 1971). The self-respect of the individuals is placed on par with the rights, liberties, powers, and economic opportunities. Therefore, all the actions that undermine self-respect would be avoided in the original position. The sexualization of childhood undermines the self-respect of the children and hurts their self-esteem, thus violating the principles of justice, and therefore would never be approved from the original position. Marketers also resort to gender stereotyping in their promotions. In the original position, one is not aware of his/her gender and therefore would never approve of any actions which impose a certain identity on a particular gender that would undermine the self-respect or self-esteem of individuals associated with individuals of that gender. Marketers use violence to grab the attention of the children, engage them, generate fear in them, shock them, and generate market-desired responses from them (Jones, 2002; Jones, Cunningham, & Gallagher, 2010; Ruiter, Abraham, & Kok, 2001). Inducing fear among children and forcing them to act in market-desired fashion is akin to coercion, and hence would not be permitted from the original position. Shock affects the rational responses of the individual and anything that takes rationality away from individuals would never be permitted. This is more so in the case of children, for they possess only limited rational capacities. Depiction of violence is also associated with an increase in aggressive behaviors among children (Anderson et al., 2007). The perpetrators of violence indulge in violation of the rights and liberties of the affected parties. Since the depiction of violence is associated with an increase in aggressive behaviors, and aggressive behaviors are associated with violation of rights and liberties, the depiction of violence would be criticized for encouraging the violation of rights and liberties of individuals in society, and therefore would never be considered just from the original position.

Marketing to children violated the principle of liberty that guarantees a set of equal rights for all the participants in society. The marketers enjoyed the position of power, and children were left helpless in their defense against them. This allowed the marketers to infringe on the rights and liberties of children with utter disregard for their health and well-being. This also violated the necessary condition of equality. The difference principle permits inequalities only when it benefits the least advantaged. Children are considered least-advantaged in the context of their relationship with marketers. The actions of marketers are known to make the children worse-off, and would not be considered just. However, marketers defended their actions directed at children. They argue that children live a market-driven society and that their market participation is a social and economic necessity. Rawl's priority rules gave priority to liberty and opportunity over economic benefits, making it impossible for the trade-off between the two. Marketers claim that freedom is fundamental to a free-market economy and that they should be allowed to exercise freedom completely, including marketing to children, for they believe that all that they are doing is educating the customer (Cowell, 2001). According to the principle of liberty, members of society have equal rights to the adequate scheme of equal basic rights and liberties only when they are compatible with a similar scheme for all others (Rawls, 1971). Marketers in exercising their freedom are violating the conditions of freedom granted to children under the same principle.

5. Conclusion and Implications

Rawls provides us with a theory that helps to impersonally and impartially examine and settle the conflict arising out of marketing to children. Though Rawls does not include children in the social contract for the lack of fully developed social powers, he nonetheless argues for consideration of childhood circumstances while deliberating the justness of any action, and also guarantees them full protection under principles of justice. Examining the ethics of marketing to children from the 'original position' behind the 'veil of ignorance' brings forth many instances of injustice meted out to children, under the guise of free-market ideals and claims of educating them to become competent consumers. The accusations against marketers for exploiting the gullibility of children, recklessly implicating them into consumer culture, promoting materialistic ideals, causing disharmony in parent-child relationships, promoting unhealthy and unsafe products, sexualizing childhood, and excessively depicting violence seem to stand ground when viewed from the original position. Also, the marketers' use of force, coercion, and deceptive tactics to elicit market-favored responses from children contradict the Rawlsian idea of justice, thus constraining us from according blanket approval to the actions of marketers targeted at children. For Rawls, justice is fairness. However, there can be no fairness in the relationship between the might and the minor. Further, there can be no fairness when one party (marketers) causes substantial harm and induces great damage to the other party (children). In an unequal relationship between the might and the minor, the might is accused of trampling the rights and liberties of the minor, thereby violating the principle of liberty. In the context of marketing to children, the children are considered least advantaged and the actions of marketers further worsen their condition, thereby violating Rawl's difference principle. From a Rawlsian perspective, marketing to children is anything but just. The Rawlsian perspective provides the much-needed narrative to draw the attention of all stakeholders, including policymakers and the members of civil society, towards the injustice meted out to children by the marketers and the inherent dangers accompanying it, and elicit their support for a tougher regulatory framework to restrict the actions of marketers directed towards children. It is a wake-up call for the marketers to self-regulate their actions directed at children, lest they attract stringent sanctions for restricting the same.

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To Examine the Factors Influencing Tourist Intention to Revisit to the Maldives with the Use of Social Media Marketing as the Moderating Influence

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Abstract

This paper presents a study on "to examine the factors influencing tourist intention to revisit to the Maldives with the use of social media marketing as the moderating influence." This research will be examining tourist's intention to revisit towards Maldives and what is the moderating influence by social media marketing. There are four main research objectives set out to achieve they are to determine the influence of social media as a marketing factor on the tourism industry, to examine the factors influencing tourist revisit intention, to examine the influence of social media on marketing and to determine the influence of novelty, adventure, social contact, relax and escape on tourist's intention to revisit. The aim of the study is to improve and give a better recommendation to the main industry in Maldives, which is tourism. As it is the main reason for tourist visit can be put under the five individual variables as novelty, adventure, social contact, escape and then relax. The methodology used in this paper is quantitative and hence a survey approach was acquired.

Keywords: Business, Impacts, Influence, Revisit, Social Media, Tourism

1. Introduction

1.1 Introduction to problem

Maldives in South East Asia is recognized as a 'paradise on earth' glorified for it is scattered green islands, white beaches and under water beauty. Current economy of this island national with lesser natural resources is predominately depend on the tourism industry, playing a decisive enterprise, in earning foreign exchange revenues and accommodating employment opportunities in the tertiary sector. Regrettably, even though scope is immense

and some promotional events are held to attract tourists annually, there is still a huge gap present between the strategies adopted and the optimum outcome (Kundur, 2012).
One of the strategies adopted to promote tourism industry in Maldives is social media. Prevalent social media applications such as Facebook, Twitter, Instagram and WhatsApp aids tourists in simply digitizing moments (Munar & Jacobsen 2014). According to Naafiz (2017), social media plays a significant role in tourist decision to some extent.

However, the problem lies with using the best possible social tool to its full capacity and at the same time a good marketing strategy are what ensures the success of tourism destination. Island based countries similar to Maldives like Seychelles, Mauritius, use emerging new technologies like social media to advertise not only their natural and man-made resources. They advertise their unique traditions, food and culture through social media (Naafiz, 2017).

The main challenge in promoting Maldives tourism sector is the narrow marketing focus of the service providers. This includes focusing only on promoting white sandy beaches and the beautiful reef fishes of the sea (Naafiz, 2017). The tourist requires more than these reasons, hence there is a need to explore new aspects which can be used to promote Maldives tourism industry using the social media.

According to Larson (2011) there can be several other reasons to why a tourist can decide to revisit. The normal American travelers spend about fourteen days or less on an excursion in any one territory. There is a whole other aspect to an outing than simply the landscape of a country. A vacationer must choose what experience they need. They therefore need to prioritize depending on the experience they require. Which means a vacationer who needs to unwind and lay by the sea may have to pass up opportunity to visit historical places in the territory - this may require another outing (Larson,2011).

The objectives of this paper are to find the factors influencing tourist intention to revisit Maldives with the use of social media marketing as the moderating influence.

This paper aims to determine the influence of social media on marketing for tourism, to examine the factors influencing tourist revisit intention, to examine the influence of social media on marketing and to determine the influence of novelty, adventure, social contact, relax and escape on tourist's intention to revisit.

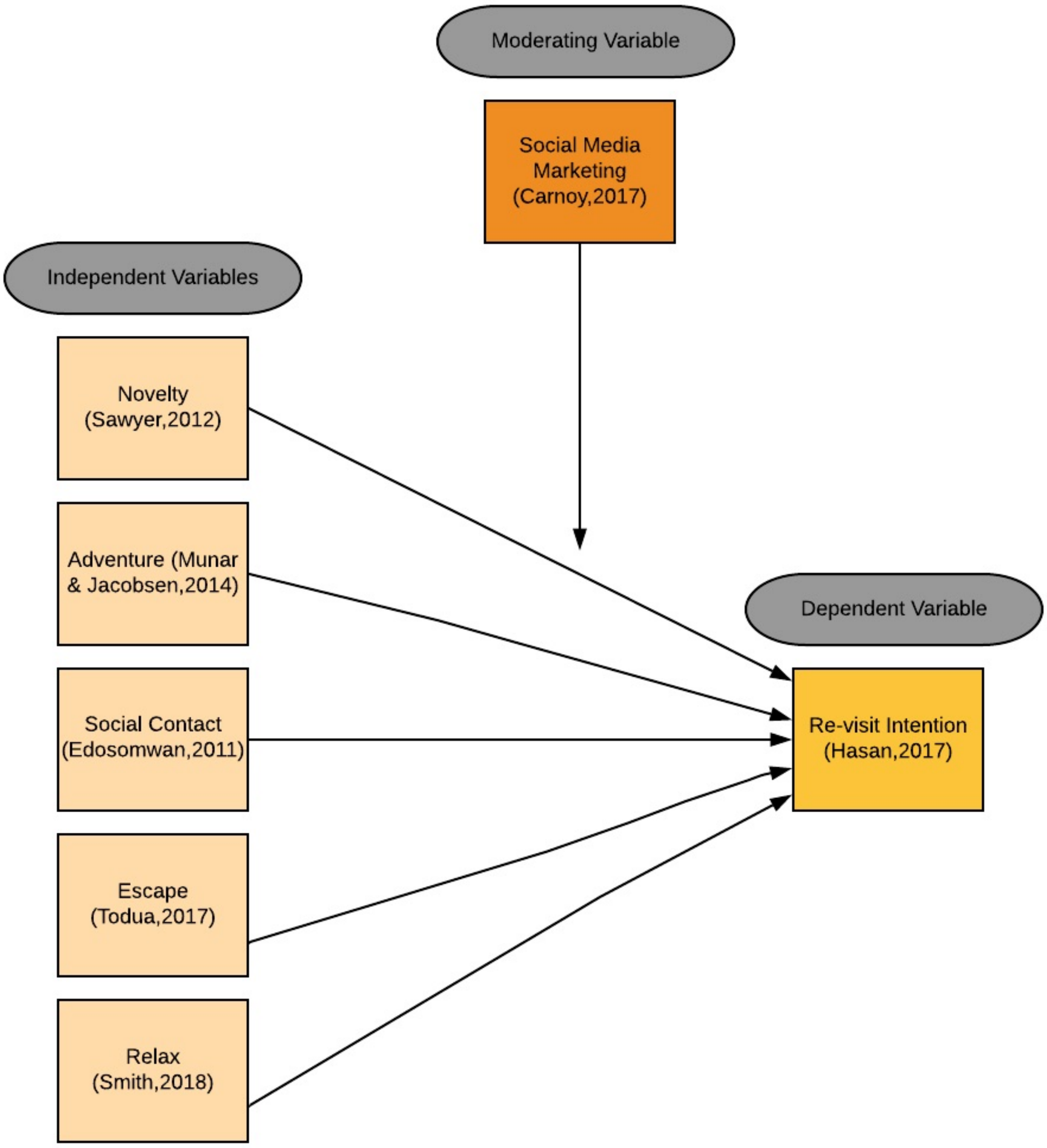
1.2 Literature review

People have a full trust on what people post on their social media's like Facebook, Instagram, blogs, snaps, etc. People share online their own travel experiences and special moments, their opinions about the accommodation, hotels, restaurants, airlines, or even car rental services of the place (Kazak, 2016). In a world of digital connectivity, these social media platforms are an effective, extensive way of advertising and marketing the tourism industry (Jashi, 2015).

When booking travel, 89% of millennial plan travel activities based on content posted by their peers online. Travel agencies are not obsolete they are still responsible for 55% of all airline bookings, 77% of cruise bookings, and 73% of package bookings. But many agencies have shifted their focus from in-person to online experiences as they adapt to new technology and market trends (Carnoy, 2017).

There are many successful social media marketing conducted. Iceland had a successful campaign in 2010, where visitors to their website could explore a-ö of journeys, tastes and living in Iceland, with rich features on the Northern Lights, ice climbing or birch syrup ((Durrenberger, 2015). In 2013, South Africa had a hashtag campaign using "#MeetSouthAfrica", collaborated with 14 international travel bloggers, a usual strategy in other marketing discipline. This generated more than 9,000 tweets, 77.8 million Twitter impressions, and more than 1000 photos shared on Instagram (Office, 2017).

Even though Maldives tourism industry is marketed, there is no research done on the area of how social media have affected the marketing of tourism industry in Maldives. Nor there has been a research done on the factors influencing the revisit intention of tourists to visit Maldives. Therefore, the outcome of this study will help the policy makers in making policies with regards to the use of social media techniques to boost tourism sector of the country.



1.3 Conceptual framework

Figure 1: Conceptual Framework

The conceptual framework explains the main platforms referred in "social media" in the study. It includes Facebook, Twitter, Snapchat and Instagram which is the most commonly used platforms in Maldives. The framework further depicts a relationship between social media and tourism sector; however, the study will further prove whether the relationship is negative or positive. Hence, according to the framework social media where's tourist revisit intention is the dependent variable. The moderating variable is social media marketing.

The independent variables are novelty, adventure, social contact, escape and relax. According to Cohen (1972), travelers tour in a quest of novelty; yet, most of them need to remain in their relief region or "environmental bubble" in order to completely experience the experience (Mak, 2015). Adventure skill a type of tourism involving tour to far off or distinguished locations in order to take section in physically challenging out of doors activities.

By social contact there is a need to want for people to interact with people, it may additionally be in the shape of talking, smiling, shaking fingers etc. Social contact serves the common or higher correct to ensure the sustainability of the gadget in question and shield the persons within it. As such, the social contact normally guides moral behavior. In Escape this type of vacationer has a pretty clear notion the place he needs to go and he is not touring away from his domestic (such as it is the case with escape), he is journeying towards a constant destination. Cultural tourism is primarily based on the thought of search and it now and again consists of non-secular or non-secular experiences. Relax is where the vacation is mostly leisure travel. This is the place the predominant motivation is to take a holiday from day-to-day life. Leisure travel is often characterized with the aid of staying in pleasant motels or resorts, relaxing on seashores or in a room, or going on guided excursions and experiencing local traveler attractions (Hasan, 2017).

The two hypothesis explored in this paper are "null hypothesis" that there is no influence of social media on marketing for tourism, there are no influence on the tourist intention to revisit, there is no influence of social media on marketing, there is no influence in novelty, adventure, social contact, relax and escape on tourist intention to revisit. Alternative Hypothesis is that there is influence of social media on marketing for tourism industry, there are influence on tourist's intention to revisit, there is influence of social media on marketing, there is influence in novelty, adventure, social contact, relax and escape on tourist intention to revisit.

2. Method

2.1 Research approach

The research approach used for this paper is Epistemology, which is referred to the "the nature and forms [of knowledge], how it can be acquired and how communicated to other human beings" (Saunders, 2012). The research philosophy used for the paper is positivism, as its best works on quantifiable observations (GuhaThakurta, 2016) this research requires statistical evaluation as well. Furthermore, exploratory research is carried out when a topic needs to be understood in depth, especially if it hasn't been done before (Bhat, 2018). Thus, exploratory research design was chosen for this research as it is imperative to study perceptions and opinions on social media in marketing tourism in Maldives and exploratory design will be able to draw out the thoughts and opinions of respondents.

2.2 Sample size

As per the Tourism Ministry Annual Report (2018), more than 1,000,000 tourists visited Maldives in 2018 and in order to determine the sample size the highest value in the Population category was selected; 1,000,000 (Sekaran, 2016). According to Sekaran (2016), the sample size was determined to be 384. For this research pilot testing was done with 10 tourists. Both hard and soft copies were disseminated to 10 resorts (40 questionnaires per resort) and resort agencies, to be filled by guests on vacation. Out of the 384 questionnaires, 304 questionnaires were filled, which is response rate of 76%.

2.3 Research method

The questionnaire was designed based on a scholar of Su & Huang (2018) the title, how does perceived destination social responsibility impact revisit intentions: the mediating roles of destination preference and relationship quality. Second article was from, Andajani (2016) title international tourists motivations and revisit intention to Indonesia, and then the last school is from Lee, Chen, Liou , Tsai & Hsieh (2018) it is about evaluating international tourists perceptions on cultural distance and recreation demand. The questionnaire includes questions to test the research questions and the conceptual framework.

2.4 Research Design

The methodology used for this research is quantitative, as numbers provide a better perspective to make important business decisions (Neuman, 2015). Non-probability sampling was used in this research, whereby survey was conducted among tourists, however the members of the population do not have equal chance of being selected in this type of method (Saunders, 2012). The questionnaire used to survey the population were made in English in order to make it easier for tourists to comprehend.

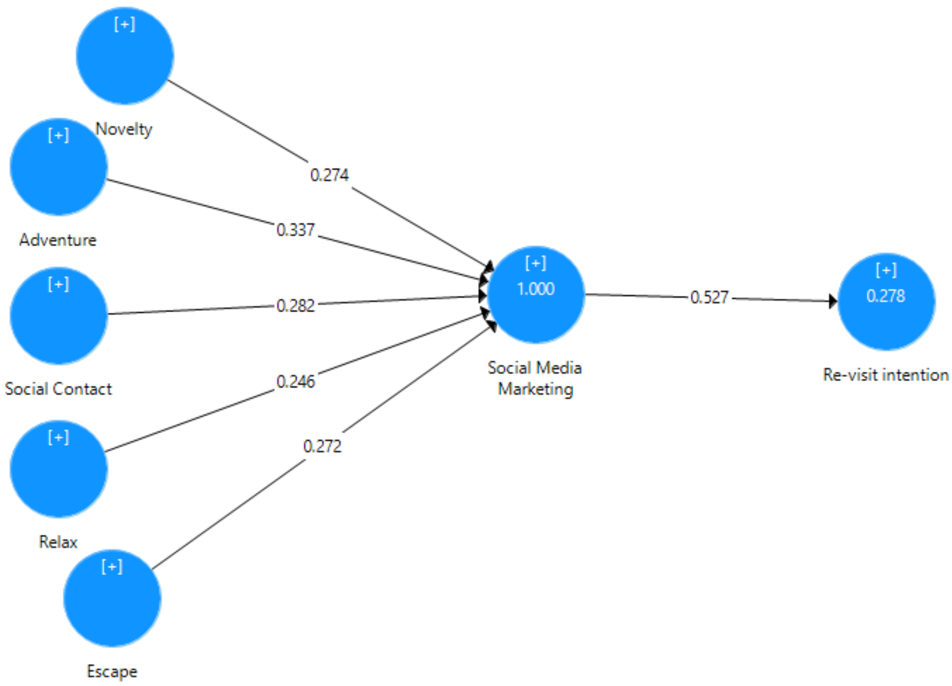
2.5 Data analysis

The data analyses method that will be used for this research is SmartPLS 2019 (latest version). The "statistical package for the social sciences" (SPSS) is a package of programs used for manipulating, analysing and presenting data; the package is widely used in the social and behavioural sciences (Flynn, n.d).
The correlation coefficient was used to measure the degree of correlation between the dependent and independent variables. Pearson correlation coefficients applied in testing the impacts of green marketing on consumers purchase intention. The correlation between two random variables, X and Y, is a measure of the degree of linear association between the two variables. The population correlation, denoted by ρ, can take on any value from one to one (Ezirim and Nwokah, 2019).

3. Results

3.1 Algorithm Test

Figure 2: Shows the relationship between the variables.



Algorithm test reveals the relationship between the Independent Variable (IV)s and Dependent Variable (DV) and it shows the regression "r" value. The "r" value will always be in between +1 and -1, if the value comes near to +1 then the relationship between IVs and DV are stronger, conversely if the value comes near to -1 then the relationship between IVs and DV are negative.

In reference to Figure 2, the relationship between "novelty" and "social media marketing" the "r" value is 0.274, indicating that association between "novelty" and "social media marketing" is positive but weak as it is below 0.5. About "adventure "and "social media marketing "the "r" value is 0.337, indicating that association between "adventure" and "social media marketing" is positive but weak. The variable "social contact" and "social media marketing" the "r" value is 0.282, indicating that association between "social contact" and "social media marketing" is positive but weak. The fourth variable "relax" and "social media marketing" the "r" value is 0.246, indicate a positive but weak. The last variable "escape" and "social media marketing" the "r" value is 0.272. which is same as rest, positive but weak. To depict the "social media marketing" and "re-visit intention" the "r" value is 0.527 which indicates a positive and strong relationship.

To sum up, as there was no indication of a negative value, hence it can be concluded that all variables demonstrates a positive relationship with one another, meaning as one variable increases, the other also increases. However, some of the values were below 0.5 hence determining a weak relationship (Landau, 2017).

First of all, according to figure 2 considers that the bootstrapping algorithm analyses the significance of relationships. That is, whether the effect of a certain IV on a certain DV is significant. The strength of the relationships can be obtained by applying the PLS algorithm. Thereby, the path coefficients indicate to which extend an IV affects a DV (the bootstrapping indicates whether these relationships are significant). The R^2 value (coefficient of determination) is only applicable for DVs. It indicates how well all IVs explain this DV. For instance, a value of 0.4 indicates that 40% of the variance in the DV is explained by the IVs (Landau, 2017).

Accordingly, this primary way to compare the strength of relationships is looking at the path coefficients. Furthermore, this could calculate the effect strength f^2 for each IV, which indicates to which extent this IV contributes to the explanation of a DV (Landau, 2017).

3.2 Bootstrapping test results

Figure 3: Bootstrapping Test Results

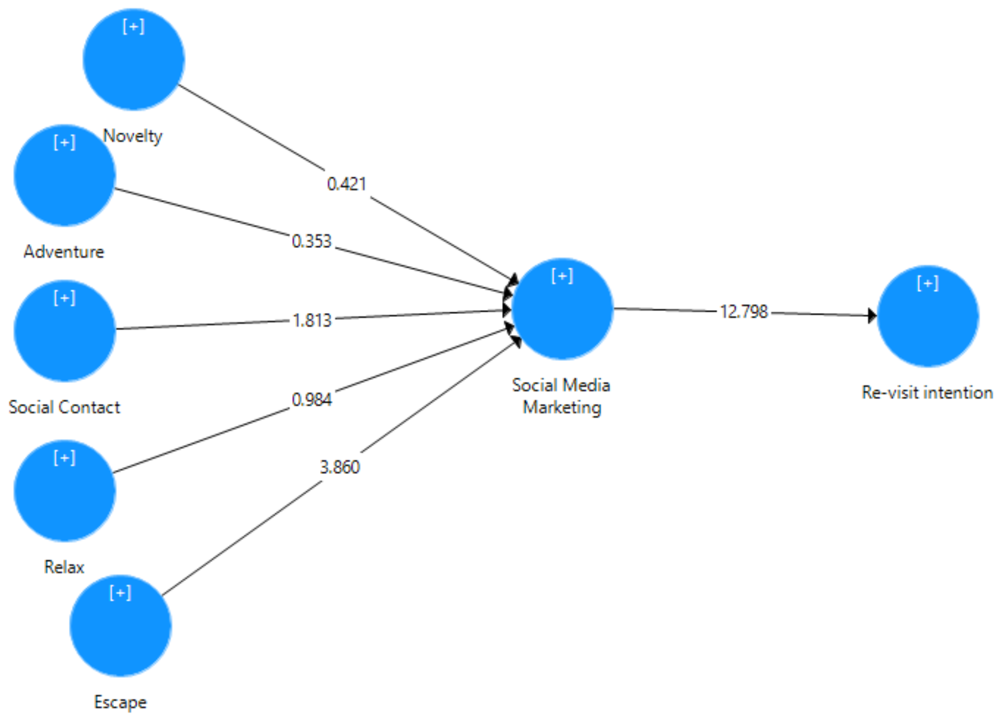


Table 1: Statistics (Path Coefficients)

	T Statistics (|O/STDEV|)	P Values	%
Adventure -> Social Media Marketing	0.353	0.724	72.4%
Escape -> Social Media Marketing	3.860	0.000	0%
Novelty -> Social Media Marketing	0.421	0.674	67.4%
Relax -> Social Media Marketing	0.984	0.326	32.6%

Social Contact -> Social Media Marketing	1.813	0.070	7%
Social Media Marketing -> Re-visit intention	1.798	0.000	0%

Bootstrapping test result indicates the significant level between the variables and this test is run at 95% confidence level. From the above diagram the path coefficient value indicates the T-statistics values and from the above table (1) shows the p-values. If the p-values are more than 5% then accept alternative hypothesis and reject null hypothesis, conversely if p-value is more than 5% then accept null hypothesis and reject alternative hypothesis.

Looking into more details from the above Figure 2 and Table 1 the significance level, between “adventure” and “social media marketing”, it indicates that the “t-statistic” value and “p value” as 0.353 and 0.724 respectively. Since the p-value is more than 5%, then there is no significant association between “adventure”,” novelty”, “relax”, “social contact” “re-visit intention” and “social media marketing” indicating that accepting the null hypothesis and rejection of alternative hypothesis.

However, between “escape” and “social media marketing” the “t-statistic” value and “p value” as 3.860 and 0.000 respectively. Since the p value is less than 5% then there is a significant association between escape and social media marketing indicating that rejection of null and acceptance of alternative hypothesis Therefore, this concludes that social media marketing is a significant factor that influence escape only.

3.3 Ancillary Analyses

According to Chahoud, Chahine, Salameh & Sauleau (2017) “Discussions of validity usually divides it into several distinct “types”. However, a good way to interpret these types is that they are other kinds of evidence—in addition to reliability—that should be taken into account when judging the validity of a measure” (Chahoud, Chahine, Salameh & Sauleau, 2017).

Table 2: Reliability and credibility test results

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Adventure	0.689	0.711	0.812	0.524
Escape	0.705	0.704	0.836	0.629
Novelty	0.659	0.677	0.797	0.499
Re-visit intention	0.914	0.918	0.924	0.392
Relax	0.634	0.632	0.804	0.577
Social Contact	0.701	0.748	0.831	0.625
Social Media Marketing	0.838	0.844	0.868	0.282

Table 3: Internal model residual correlation

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Adventure	0.689	0.711	0.812	0.524
Escape	0.705	0.704	0.836	0.629
Novelty	0.659	0.677	0.797	0.499
Re-visit intention	0.914	0.918	0.924	0.392
Relax	0.634	0.632	0.804	0.577
Social Contact	0.701	0.748	0.831	0.625
Social Media Marketing	0.838	0.844	0.868	0.282

An internal consistency test was performed focusing on Cronbach's alpha, Rho_A, Composite Reliability and then Average Variance extracted (AVE) as depicted in Table 3.

Table 4: Heterotrait-monotrait ratio of correlations (HTMT)

	Adventure	Escape	Novelty	Re-visit intention	Relax	Social Contact
Adventure						
Escape	0.519					
Novelty	0.790	0.463				
Re-visit intention	0.425	0.521	0.318			
Relax	0.768	0.523	0.476	0.444		
Social Contact	0.476	0.403	0.514	0.602	0.465	
Social Media Marketing	1.052	0.837	0.992	0.582	0.943	0.827

The heterotrait-monotrait ratio of correlations (HTMT) is a new method for assessing discriminant validity in partial least squares structural equation modelling, which is one of the key building blocks of model evaluation (Hair, Hult, Ringle & Sarstedt, 2013). The interpretation of the finding on Table 4 is that the discriminant validity is achieved for the study. Since there is no negative value and also no lower values.

4. Discussion

The aim of this study is to examine the factors influencing tourist intention to revisit to the Maldives with the use of social media marketing as the moderating. The overall objective of this thesis is to check on the mediating effect of tourism destination and moderating influence of tourism culture on the relationship between social media marketing and tourist revisit intention to Maldives.

The independent variables are novelty, adventure, social contact, escape and relax. The moderating variable is social media marketing and then dependent variable is revisit intention. The results generated depicted a negative regression coefficient. A path loading from X to Y it is the predicted increase in Y for a one-unit increase on X holding all other variables constant (Anglim, 2013), in the results X had increased and Y is predicted to decrease.

The findings of the research conclude that social media marketing had no significant impact on the independent variables including adventure, novelty, relax, social contact and revisit intentions. Hence, this concludes that the hypothesis was contradicted for the mentioned variables (Table 1).

However, social media marketing had a strong impact on the independent variable "escape" (Table 1). Meaning that the hypothesis "there is an influence between escape and social media marketing" were supported.

Even though most of the hypothesis were rejected, this demonstrates that the policy makers at Maldives should focus more on social media marketing of novelty, adventure, social contact, escape and relax as a reason to visit the country again. In the Maldives, like many developing nations, tourism play a major economic role, hence due to the delicate nature of the country, to sustain the industry, its management is vital. Although, tourism in Maldives have been sustainably managed, there are many problems for which the country has to find appropriate solutions. The major problem is unavailability of tourism inputs within the country. As a result, tourism balance is not very favorable and the linkages with other sectors of the economy and tourism are very limited.

If social media is not used in the promotion of tourism industry of Maldives, the country is going to lag behind in the development of the sector. In addition to this, destination revisit intention has been, viewed as an important research topic both in academia and the tourism industry. It is important to observe tourists' revisit intentions from a time perspective because the intention often changes over time.

The findings of this research can be beneficial for the policy makers, academicians who would like to do more research on the tourism industry of Maldives as well as the resort owners. The data collected during the process of this research study is unique in its contribution to this field of knowledge. Looking at to the significance of the study, this study is one of its kind in Maldives as there is no research done in this area. Therefore, the outcome of this study will help the policy makers in making policies with regards to the use of social media techniques to boost tourism sector of the country. Furthermore, as per the researcher knowledge there has not been any research done on this discipline in Maldives therefore this study will be used a reference material for the future academics.

Though tourism and social media technology is a thoroughly researched area, this study brings novelty as it is the first social media marketing analysis study conducted on the Tourism Industry of Maldives. This study will be beneficial and is expected to become a reference material for future researchers conducting studies on similar context.

The limitations in conducting this research includes time constraint, limited resources, lack of support given by resorts and language barrier as not all the tourists were familiar with the English language. As the sample size was large, the limited time did not accommodate for the provision of a proper response time, hence the research results could have been better/enhanced if more response time was provided. Moreover, this research is conducted by using questionnaire survey only as a research instrument. Questionnaires, can be focused on some other areas like from senior tourist's managers or interview can be directed to tourists to obtain deeper knowledge from them or do an observational survey for the tourist's actions.

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Appendix A
Questioners Form

To examine the influencing factors to tourist revisit intention to the Maldives with social media marketing as the moderating influence.

Dear Respondents,
I am Rana Ahmed Hameed, a final year student in Doctorate in Business Administration (DBA) at Mantissa College Malaysia.
I am currently conducting my final year thesis on a mediating effect of tourism destination and moderating influence of tourism culture on the relationship between social media marketing and tourist revisit intention to Maldives.
I would appreciate if you could spare some time to complete this questionnaire as it would only take 10 to 15 minutes of your time. Please note that all information will be kept confidential and it will only be used for academic purposes.
Thank you so much for your time, have a nice day.

SECTION 1 - DEMOGRAPHICS

(Please fill the following)

1. Gender
- a. Male ☐
- b. Female ☐

2. Age range
- a. Below 25 ☐
- b. 26 - 35 ☐
- c. 36 - 45 ☐
- d. 46 and above ☐

3. Education level
- a. Primary ☐
- b. Secondary ☐
- c. Undergraduate ☐
- d. Postgraduate ☐
- e. Doctorate ☐

4. Race
- a. Asian ☐
- b. European ☐
- c. Australian ☐
- d. American ☐
- e. African ☐
- f. Others *(please specify)* Click or tap here to enter text.

5. Salary Range in USD (per month)
- a. Less than 500 ☐
- b. 501 - 1000 ☐
- c. 1001 - 2500 ☐
- d. More than 2501 ☐

6. Reason for travel
- a. Holiday ☐
- b. Conference ☐
- c. Medical ☐
- d. Education ☐
- e. Others *(please specify)* Click or tap here to enter text.

7. Number of days stays in Maldives

a. 0-7 days ☐
b. 8-14 days ☐
c. 15-30 days ☐
d. More than 30 days ☐

8. Accommodation type

a. Budget ☐
b. 1 - 3 star ☐
c. 4 - 5 star ☐
d. 5 star and above ☐

SECTION 2 – PERSONAL INTERESTS

9. Through which social media(s) did you discover Maldives?

a. Instagram ☐
b. Facebook ☐
c. Twitter ☐
d. Snapchat ☐
e. Pinterest ☐
f. TripAdvisor ☐
g. Internet ☐
h. None of the above ☐

10. Rate the following type of Social Medias on a scale of 1-5, 1 being least favorite and 5 being most favorite.

Platform	5	4	3	2	1
Instagram	☐	☐	☐	☐	☐
Facebook	☐	☐	☐	☐	☐
Twitter	☐	☐	☐	☐	☐
Snapchat	☐	☐	☐	☐	☐
Pinterest	☐	☐	☐	☒	☐
TripAdvisor	☐	☒	☐	☐	☐
Tumblr	☐	☐	☐	☐	☐

11. Rate your social media interaction level for the following.

	Continually throughout the day (5)	3-5 times a day (4)	Once a day (3)	Monthly (2)	Weekly (1)	Never (0)
General social media interaction	☐	☐	☐	☐	☐	☐

Social media interaction when abroad	☐	☐	☐	☐	☐	☐
Taking pictures as a priority when abroad	☐	☐	☐	☐	☐	☐

12. How often do you use the following means to arrange your accommodation?

	Always (4)	Mostly (3)	Sometimes (2)	Never (1)
In person	☐	☐	☐	☐
Through travel agency	☐	☐	☐	☐
Internet	☐	☐	☐	☐
From a person in Maldives	☐	☐	☐	☐
Directly from resort	☐	☐	☐	☐
Others *(please state)*	Click or tap here to enter text.			

SECTION 3 - SOCIAL MEDIA MARKETING

13. Novelty: I visit Maldives because

	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
To attend events that I have never attended before (e.g.: sport events, carnivals, cultural activities and festivals)	☐	☐	☐	☐
Of the desire to explore destinations I have not previously visited	☐	☐	☐	☐
I like to understand and discover unfamiliar things	☐	☐	☐	☐
To travel and enjoy a dynamic and verified lifestyle	☐	☐	☐	☐

14. Adventure: I visit Maldives because

	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
I like to discover something new	☐	☐	☐	☐
I want to get close to nature	☐	☐	☐	☐
I want to experience unfamiliar destination	☐	☐	☐	☐
To do something challenging	☐	☐	☐	☐

15. Social Contact: I visit Maldives because

	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
To make friends with people who are exciting and unexpected	☐	☐	☐	☐
To interact with other tourists, as it is exciting	☐	☐	☐	☐
To try home stay with a local family during my travels	☐	☐	☐	☐

16. Escape: I visit Maldives because

	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
To get away from home	☐	☐	☐	☐
To experience different lifestyles	☐	☐	☐	☐
To do something about my boredom	☐	☐	☐	☐

17. Relaxation: I visit Maldives because

	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
To rest	☐	☐	☐	☐
To relieve stress and tensions	☐	☐	☐	☐
To gain experience in a simple lifestyle	☐	☐	☐	☐

Section 4 - Re-Visit Intention

18. Social responsibility of Destination: The management organization and service providers of Maldives are

	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
Environmentally responsible	☐	☐	☐	☐
Give back to the local community	☐	☐	☐	☐
Successful in generating and allocating their tourism revenues	☐	☐	☐	☐
Treat their stakeholders well	☐	☐	☐	☐
Act ethically and obey all legal obligations to fulfill their social responsibilities	☐	☐	☐	☐

19. Destination preference

	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
Maldives would be my first choice for a journey	☐	☐	☐	☐
Maldives is more attractive than any other destination	☐	☐	☐	☐
I am more interested in visiting Maldives than any other destinations	☐	☐	☐	☐
I intend to visit Maldives, even if other destinations offer a better tourism experience	☐	☐	☐	☐

20. Tourist satisfaction

	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
Overall, I was satisfied with my visit to Maldives	☐	☐	☐	☐
Compared to my other experience, I was satisfied with my visit to Maldives	☐	☐	☐	☐
Compared to an ideal situation, I was satisfied with my visit to Maldives	☐	☐	☐	☒

21. Tourist destination identification

	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
I am very interested in what others think about Maldives	☐	☐	☐	☐
Maldives success is my success	☐	☐	☐	☐
When someone says positive things about Maldives, It feels like a compliment to my self	☐	☐	☐	☐
When someone criticizes Maldives, I would feel embarrassed	☐	☐	☐	☐

22. Intentions

	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
I intend to revisit Maldives again	☐	☐	☐	☐
It is very likely that I will revisit the destination in the future	☐	☐	☐	☐
The likelihood of my return to the destination for another travel is high	☐	☐	☐	☐

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A Gravity Model Analysis of IFDI - Exports Nexus: A Case Study of Indian Exports

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Abstract
The impact of Inward Foreign Direct Investment's influence on a country's exports to the FDI source is a subject matter of significance. This paper applies an augmented gravity model of international trade with Foreign Direct Investment integrated into it to empirically estimate the factors that influence India's exports to its top ten FDI source countries. The top ten investor countries account for about 87 percent of the total FDI inflows into India and 40 percent of Indian exports in 2018. This paper attempts to examine whether the Inward Foreign Direct Investment flows from these nations influence the exports to these nations from India. To this end, IFDI stocks that the top ten investing countries hold in India and the exchange rate between Indian Rupee and their currencies are embedded into the augmented gravity model for international trade. Findings indicate that IFDI stocks have a highly significant and positive role to play in India's exports to the ten FDI source countries. Besides, the economic size of the investor nation, geographical distance, and geographical distance are significant determinants of the export volume as expected. However, the limited period of data used in the panel data regression may have affected the results. The findings may change if this element is altered. Further study, with a longer period, should be conducted to test the IFDI - Exports Nexus confirmed in this paper. In general, the government of India should continue improving the investment policies as well as undertake further export-oriented reforms in the economy to push India's exports.

Keywords: India, IFDI, Gravity Model, IFDI - Exports Nexus

1. Introduction

1.1 Inward Foreign Investment and Exports

In this era of globalization, international trade and investment are becoming increasingly popular. Exports, for all nations, serve as a method to generate the foreign exchange essential for funding the import of goods and services; obtaining economies of specialization, scale, and scope in production; and for benefiting from the experience in export markets. Furthermore, export success serves as a measure of industry competitiveness of a country. Foreign Direct Investment, on the other hand, is an important source of capital for growth in developing economies. Developing countries frequently suffer from capital shortage, which is reflected in the savings-investment and import-export. To bridge this gap, inflows of foreign capital and growth in exports are deemed necessary.

Majority of the empirical literature supports that FDI and trade have a relationship. UNCTAD (2004) estimates that Multinational Corporations (MNCs) account for two-thirds of world exports. Since MNCs are responsible for a large proportion of world trade, it can be inferred that there is a close link between flows of FDI and trade. MNCs' production in a host country can generate demand for intermediate goods from the parent, resulting in a complementary relationship between flows of FDI and exports (Majeed and Ahmed, 2007). FDI traditionally played an important role in natural resource exports (ESCAP /UNCTAD 1994), and its role is growing in the exports of certain processed agricultural products. It is also playing an increasing role in services (UNCTAD 1998).

1.2 The Case in India

In 1991, the Government of India resorted to macro-economic reforms and structural adjustments (New Economic Policy/NEP) intending to bring in unison the real savings of the country and the needed investment in view. FDI inflows started pouring into Indian shores in 1991-92. The adoption of liberal and open policy measures concerning the private sector, FDI, trade, technology, and competition significantly facilitated the rapid growth phase for the Indian economy after 1991. The policy helped increase the FDI inflow into India and the increased inflows of FDI led to the expansion of cross-border production by multinational enterprises and their networks of closely associated firms in India. The improved policy and legal environment coupled with an abundant supply of cheap factors of production attracted foreign investors from various countries to invest in India. Consequently, the registered Foreign Direct Investment stocks in India rose to a cumulative level of US$ 609,838 million in March of 2019 (Department for Promotion of Industry and International Trade, Government of India). Export-oriented FDI has been driving rapid export growth in many developing countries including India. It helps overcome barriers and difficulties arising from the 'country of origin' issues.

The top ten largest FDI source countries for India from 2000 to 2018 are Mauritius, Singapore, Japan, Netherlands, U.K., U.S.A., Germany, Cyprus, UAE, and France. These countries account for approximately 87 percent of the total FDI inflows into India and 40 percent of the export volume in 2018. Figure 1 shows the average exports from India to its top ten FDI source countries along with the average investment inflows to India from these countries for the time from 2014 to 2018 (the time-period in this study). The values are in million US$.

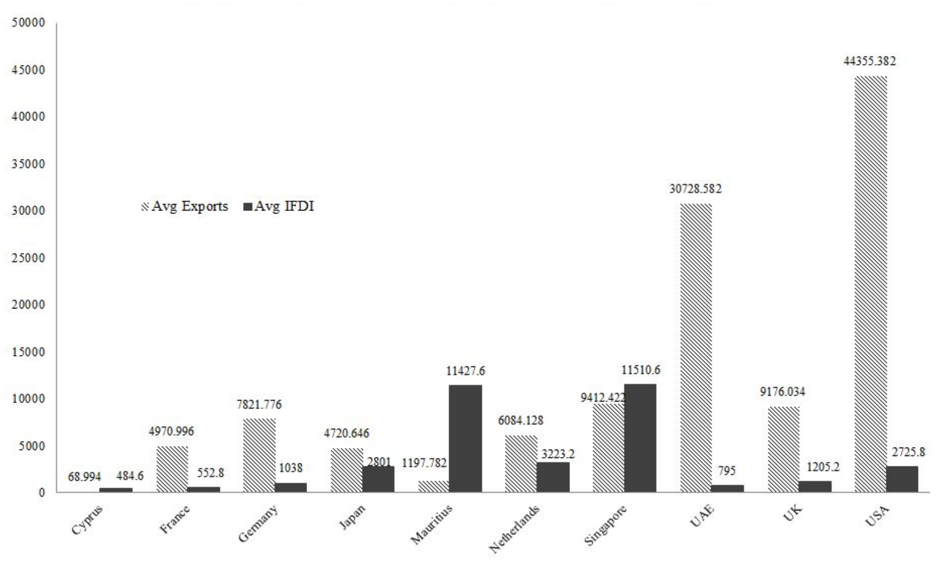

Figure 1. Indian Exports to its top ten FDI source countries

Figure 2 presents the cumulative IFDI according to each country's share in the total volume. It can be seen that Mauritius has the largest share and France has the smallest share among the top ten countries holding IFDI stocks in India.

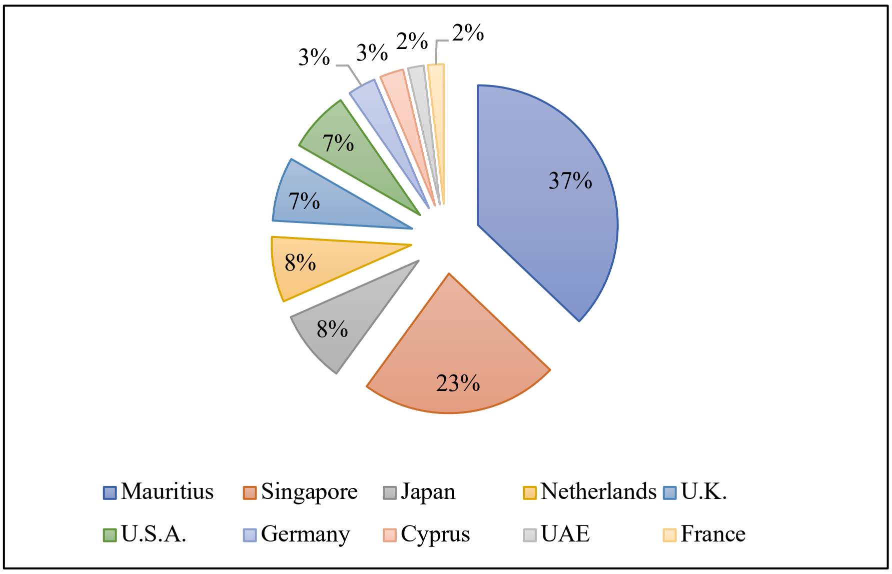

Figure 2. Cumulative IFDI from the top ten source countries

1.3 Literature Review

The relationship between FDI and trade has attracted extensive attention from many scholars (Mundell, 1957; Vernon, 1966, Dunning 1988, etc.). The role played by inward FDI in the export performance of developing countries is one of the intensely debated issues in the literature of development economics.

Comparative advantages vary across countries. Developing countries have a comparative advantage mostly in labor and natural resource endowments. Multinational enterprises relocate their production units into countries with cheap labor and natural resources. Dunning's (1988) eclectic paradigm of international production combines three main factors in explaining international production: ownership factors (O) specific to firms, location factors (L) specific to home and host countries, and internalization factors (I) of firms (OLI framework).

MNCs are utilizing their ownership advantages through controlling specific assets in facilitating their foreign subsidiaries to reduce costs and generate returns. One of the most important location factors that act as an incentive for firms to invest abroad relates to lower costs of production. It is suggested that a firm's decision will have a pro-export bias in a high-cost host country and a pro-investment bias in a low-cost host country (Liu et al., 2016).

The differences in comparative advantages between countries play a determinative role in explaining the FDI-trade nexus (Helpman et al., 20044). The main purpose of MNE investing abroad is occupying local markets by direct green-field investments. Using host countries as an export platform is another motivation. The latter form of FDI, which is export-oriented, considerably boosts the exports of FDI host countries. Emerging outsourcing activities in the last decade is a typical example of export-oriented FDI.

Many studies find that FDI promotes the exports of FDI recipient countries. Aitken et al. (1997), in their study, established that FDI has a significant impact on exports. They examined the case of Bangladesh and found that the entry of a single Korean Multinational in garment exports led to the establishment of many domestic export firms, creating the country's largest export industry. Hu and Khan (1997) attribute the spectacular growth rate of the Chinese economy during 1952 to 1994 to the productivity gains largely due to market-oriented reforms, especially the expansion of the non-state sector, as well as China's "open-door" policy, which brought about a dramatic expansion in foreign trade and FDI. Magalhaes and Africano (2005) observed a strong complementary relationship between inward FDI and Portuguese exports while outward FDI has no impact on the exports. Greenway et al. (2004) and Kneller & Pisu (2007) observed that Multinational Corporations (MNCs), generated positive export spillovers and significantly increased the exports from local firms. Conversely, Barrios et al. (2003) found no evidence of export spillovers to local firms from the existence of MNCs in Spain. Ruane and Sutherland (2004) agree with Barrios' findings using the case of Ireland.

Sahoo and Mathiyazhagam (2003), in their study about IFDI in India, noticed that a positive correlation existed between FDI and exports. Chaturvedi (2011) analyzed the sector and country-wise FDI inflow to India and observed that Mauritius, Singapore, the USA, and the UK invest in India in the computer hardware and telecommunication sectors. The study revealed that foreign investment flows led to an increase in exports. UNCTAD (1999) stated that Transnational Corporations (TNCs) can uplift export competitiveness. Contrary to the above, the study by Hanson (2001) reported weak evidence in favor of the positive impact of FDI on the host countries. However, the country experiences with respect to the role of MNEs in export promotion vary a great deal because MNEs are highly selective about the location of export-platform, export-orientation, or offshore production (Kumar & Siddharthan, 1997).

For testing the FDI-export nexus in the context of India, the gravity model in this paper, as it is the most successful empirical trade device. The traditional gravity model of trade as proposed by Tinbergen (1962) follows the theory that bilateral trade flow is directly proportional to home and partner's GDP (economic size) and distance between two countries (transportation costs etc.), i.e., "the higher the national income, the higher the import demand, and since greater distance increases transport cost and thus increase the price of imported items" (Kabir & Salim, 2010). Kalirajan (2008) observes that including other factors than GDP and geographical distance can better describe trade possibilities and provide more consistent and adequate results.

Geographical distance serves as a proxy for transaction costs in gravity models. For geographically close countries, the transportation costs will be lower making exports easier and faster. However, geographical distance alone may be an inadequate estimate. Therefore, it is often enhanced with other proxies in academia. Adjacency, both in geographical proximity as well as cultural aspects, may lead to increased trade between countries. Countries that are culturally close to each other share similar tastes and preferences. It is also assumed that the past colonial relationship between trade partners will lead to more trade (Frankel et al., 1995). All these elements affect international trade and complete the geographical distance variable to reflect the economic distance. As such this paper will use all the variables above to study the Indian exports.

Rahman et al. (2006), using the gravity equation, revealed in his study that Bangladesh's trade is determined by the size of the economy and distance. Blomqvist (2004) applied the gravity model for Singapore and found that GDP and distance variables are important variables for Singapore's trade flows.

This basic model can be augmented with many factors, including FDI inflows. If a country is a recipient of export-oriented FDI, its export volume would be larger (Xuan & Xing, 2006). This is consistent with the theory that the products of FDI firms simply substitute the domestically made ones at the FDI source country. Given this unique impact of FDI on exports, it is reasonable to integrate IFDI into the augmented gravity model. Furthermore, exchange rates between the FDI source and the host country may play an important role in the inward FDI flows and export volumes.

One drawback of using gravity equations to study exports as a whole is that it overlooks the biases in estimation due to the use of the same parameters for different components of exports. Exports consist of inter-industry as well as vertical and horizontal intra-industry parts. Each part is different and is explained by a different trade theory. Therefore, one should remove unnecessary restrictions from the gravity model to account for the differences in components of exports.

Insights into the FDI - exports relationship will contribute towards a better understanding of the process of internationalization and its potential impacts on exports. There is hardly any study that conducted panel data estimation on the effects of IFDI from the top ten FDI source countries on exports from India to these specific countries. The objective of the study is, therefore, to find out if there is a positive relationship between IFDI and exports- with these specific countries in mind- using an augmented gravity model with IFDI embedded into it.

A panel framework allows the assessment of how the variables evolve through time and the evaluation of the specific time or country effects. Previous studies have used time series, non-specific (investing country-wise), data, and ARDL models to study the impact of IFDI on exports. Consequently, this paper contributes to the existing literature by presenting a different perspective. However, the limited time-period may have influenced the findings in this research.

The role played by inward FDI in the export performance of developing countries is one of the intensely debated issues in the literature of development economics (Teodora & Marinela, 2011; Elbeydi et al., 2010). This study attempts to analyze the impact of IFDI from these major investing countries to India on Indian exports to these countries (export performance). The paper suggests the existence of a positive relationship between the IFDI and export with regard to the major ten FDI source economies for India.

2. Method

2.1 The Model: An application of the Gravity Trade Theory

The gravity equation has been traditionally used to predict trade flows across countries. It was originally inspired by Newton's universal law of gravitation in physics which states that gravitational attraction between the two objects is proportional to their masses and inversely related to the square of the distance between them (Zhang & Kristensen, 1995; Christie, 2002).

The gravity model is expressed as follows:

$$F_{ij} = \frac{M_i M_j}{D_{ij}^2} \tag{1}$$

where,

F_{ij} is the gravitational attraction

M^i and M_j are mass of two objects *i* and *j*

D_{ij} is the distance between *i* and *j*

The gravity model for trade is parallel to this law: "the trade flows between the two countries is proportional to the product of each country's economic mass generally measured by GDP, and each rise to the power of quantities to be determined divided by the distance between the countries respective economic centers of gravity, generally their capitals, raised to the power of another quantity to be determined" (Christie, 2002). The gravity model for international trade was first introduced by Tinbergen (1962) and Pöyhönen (1963) to interpret the bilateral trade flow patterns among the European countries. Ever since then, the gravity model has been used and progressively improvised in empirical studies of international trade flows.

The gravity model belongs to the class of empirical models concerned with the determinants of interactions (Karagoz & Saray, 2010). The traditional gravity model forecasts that exports X_{ij} from region i to region j is proportional to the output Y_i of the exporter region and the expenditures Y_j of the importer region and inversely proportional to the distance D_{ij} between the two regions.

The classic gravity equation can be written as follows (after taking natural logarithms on both sides):

$$LnX_{ij} = \alpha + \beta_1 LnY_i + \beta_2 LnY_j + \beta_3 LnD_{ij} \qquad (2)$$

where,
X_{ij} is the export volume between country i and country j
Y_i and Y_j are the economic masses of the two countries i and j, represented often by GDP
D_{ij} is the distance between i and j

If a country is a recipient of export-oriented FDI, its export volume would be larger (Xuan & Xing, 2006) as the products of FDI firms simply substitute the domestically made ones at the FDI source country. Therefore, IFDI stocks will be integrated into the augmented gravity model to study the exports to the top ten IFDI investor nations. Furthermore, exchange rates between the FDI source and the host country may play an important role in the inward flow of FDI and export volume. Therefore, adding the exchange rate variable is also reasonable.

The concept of distance does not only imply the geographical distance (i.e. transportation costs) but also to elements influencing transaction costs such as a common language, free trade/preferential trade agreement, colonial links, etc. Frankel et al. (1995) show countries with colonial links trade more with each other.

A drawback of the model is the absence of a persuasive derivation of the model based on economic theory. Various researchers, notably Anderson (1979), Bergstrand (1985), and Deardorff (1998), have tried to render the model with a theoretical basis. Nevertheless, none of these derivations generate the gravity model in its most general form. Another imperfection of the gravity model is the absence of substitution between flows and disregard of third party effects on bilateral trade.

2.2 Data, Definition of the Variables, and Estimation of the Empirical Model

To analyze the pattern of Indian exports to its major FDI investor nations, panel data covering the period from 2014 to 2018 for ten country pairs (India- country j pair, where j is the FDI investor in India) is set up. There are 5 observations for each pair and a total of 8 variables including the dependent variable. In the traditional gravity model, IFDI is not included as a standard independent variable. The analysis in this paper, however, includes IFDI. Consequently, the endogeneity between GDP and IFDI may cause multicollinearity. To trim down the possible bias induced by the multicollinearity, the GDP of India from the right side of the gravity equation is removed and substituted into the dependent variable as the ratio of exports to the GDP of India ($Ln(X/Y)_{ijt}$). Subsequently, the possible multicollinearity caused by the correlation between India's GDP and IFDI is eliminated. At the same time, the impact of India's GDP is not ignored.

Based on the results of recent empirical studies on the relationship between the IFDI and exports, and to ensure an adequate examination of the Indian evidence, this study will be required to answer the following hypothesis (in the case of India):

H_0: There is a positive relationship between export to source country and IFDI stocks from the source country in India

H_1: There is no positive relationship between export to source country and IFDI stocks from the source country in India

The study uses the following augmented gravity model with IFDI:

$$Ln(X/Y)_{ijt} = \beta_1 + \beta_2 LnY_{jt} + \beta_3 LnIFDIstock_{jit} + \beta_4 LnER_{ijt} + \beta_5 LnDist + \beta_6 CLang + \beta_7 BTA_t + \beta_8 ColLink + e_{ijt} \quad (3)$$

where,
(1) *Ln* = Natural logarithms; e_{ijt} = error term, β represent the coefficients;
(2) $(X/Y)_{ijt}$ = Ratio of exports to GDP in year *t* from country *i* (India) to country *j* (10 countries that invest the most in India); Export volumes collected from Department of Commerce, Government of India, GDP of India from World Bank database.
(3) Y_{jt} = Country *j*'s GDP in year t (in US $ millions); collected from the World Bank database.
(4) $IFDI_{stockjit}$ = Foreign Direct Investment stock in India from country *j* at time *t* (measured in US $ millions); retrieved from Department for Promotion of Industry and International Trade, Government of India.
(5) ER_{ijt} = Exchange rate between Indian Rupee and country *j*'s currency (Direct quotation); collected from the World Bank database, calculated w.r.t US$.
(6) *Dist* = Distance between capital cities in the countries *i* and *j*; taken from CEPII geodist calculations (2011).
(7) *CLang* = Dummy variable: 1 if country pair (*i* and *j*) shares a common official language, 0 otherwise.
(8) BTA_t = Dummy variable: 1 if country pair (*i* and *j*) has bilateral agreements between them at time t, 0 otherwise; data from Department of Commerce, Government of India.
(9) *ColLink* = Dummy variable: 1 if country pair (*i* and *j*) shares common colonial history (same colonizers), 0 otherwise.
Matyas(1997), Egger (2000), etc., suggested the use of panel data in the gravity model since panel data is a general case of cross-sectional and time-series data. A panel framework allows the assessment of how the variables evolve through time and the evaluation of the specific time or country effects.

Table 1. Descriptive statistics of the variables

Variable	Obs	Mean	Std Deviation	Min	Max
$Ln(X/Y)_{ijt}$	50	-20.0105	1.7510	-24.4600	-17.7260
LnY_{jt}	50	27.4116	0.0927	23.1704	30.535
$LnIFDIstock_{jit}$	50	9.7830	0.9628	8.0210	11.8091
$LnER_{ijt}$	50	3.2910	1.7052	-0.5996	4.6537
LnDist	50	8.6186	0.4071	7.7463	9.3976

Tips: All values are rounded to 4 decimal places

3. Results and Discussions

The estimated results obtained from the model in this study have similarities with previous studies in the application of the gravity model to evaluate bilateral trade and foreign direct investment. The regression results for the augmented gravity model for Indian exports are reported in Table 2 below. The gravity model of India's exports has been estimated by Random Effect Model. The null hypothesis is rejected and the alternate hypothesis that IFDI has a significant and positive effect on the exports to FDI source countries is accepted. Estimated coefficients had nearly all the expected signs except for Exchange Rates between the countries' currencies and the bilateral trade agreement effect.

Table 2. Results of Panel Gravity Model Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-45.9797	9.0196	-5.10	0.000***
LnY_{jt}	1.4016	0.1631	8.59	0.000***
$LnIFDIstock_{jit}$	1.0244	0.3183	3.22	0.002***

$LnER_{ijt}$	-0.0796	0.0847	-0.94	0.353
LnDist	-2.6459	0.5740	-4.61	0.000***
CLang	0.4934	0.5519	0.89	0.376
BTA	-2.3852	0.4566	-5.22	0.000***
ColLinks	2.1859	0.8157	2.68	0.001**
R-squared :	0.8427	F(7,42) :		32.14
Adj R-squared :	0.8165	Prob > F :		0.0000

Tips: *, ** and *** denote 10%, 5% and 1% significance level, respectively

As it is seen, the export ratio of India with its top ten investor countries is significantly affected by the IFDI stocks and economic size of the investing countries. Greater levels of IFDI lead to greater levels of exports. Specifically, a one percent increase in IFDI stock will boost exports ratio (exports/GDP) to the FDI source country by 1.02 percent. Besides, the higher the GDP of the investor, the higher is the volume of exports from India to it. Distance is negatively related to exports, as expected. Increasing distance between the partners decreases the export volume. The coefficient for Exchange Rates is insignificant. This may be because it is the home country's MNCs in India that are exporting most of the products to the home country, and as such exchange rates may not matter. However, it is not verified (further study is required). The negative coefficient for bilateral trade agreement may be because, in the presence of a bilateral trade agreement, investments from source countries are not required. The bilateral trade agreements, by themselves, will allow exports from India to these 10 nations. Therefore, in presence of a trade agreement, IFDI is deemed unnecessary. The home countries will not invest in India, India will not receive export-oriented FDI and India's exports to these countries will be determined solely by demand for Indian goods in these countries. However, this is just a theory and further in-depth study is essential to understand this phenomenon.

Colonial links are seen to have a positive influence on exports, as expected. However, sharing a common official language does not have any significant effect on the exports to FDI source countries. The R-squared value is 84.27% (percent of variance explained), implying that the model is acceptable and the model is well fitted.

4. Conclusions

The macroeconomic reforms and structural adjustments in the Indian economy in mid-1991 liberalized trade and investments and greatly enhanced India's economic growth, export performance, and FDI inflows. India ranked fifth in the top 10 investment nations list in 2018 (Times of India). It also emerged as the top recipient of Greenfield FDI Inflows from the Commonwealth (The Commonwealth trade review in 2018). The top ten investor nations in India accounted for a whopping 87 percent of the total IFDI in India from 2000 to 2018. Besides, the exports to these ten countries accounted for roughly 40 percent of India's total exports in 2018. As such, a need arises to investigate whether the FDI inflows have an impact on the exports, with respect to India and its top ten IFDI source nations.

The main purpose of this study is to examine the effect of IFDI stocks that the ten countries included in the study hold in India on India's exports to them. The study employs the gravity model of trade to analyze Indian exports to ten major investors. The traditional gravity model is augmented to include the IFDI stocks variable along with the exchange rate, colonial links, common language, and bilateral trade agreements, the final three being dummy variables. Estimation results indicate that IFDI stocks have a very significant influence on exports. A one percent increase in IFDI stocks would give rise to a 1.02 percent increase in the exports to GDP ratio. It is also revealed that exports between India and the top ten investors in India are mainly affected by the economic size of the investing country, geographical distance, bilateral trade agreements, and colonial links. Positive relations are found between exports and economic size/GDP of the investing nation and colonial links. Geographical distance, as expected, adversely affects exports. However, the negative coefficient for existing bilateral trade agreements is unexpected and needs further analysis.

The study also has some limitations. The time period used is in the panel data regression only ranges from 2014 to 2018. Analysis with large scale data of space and time should be conducted to get improved results. Exports are studied in general; analysis based on inter-industry and intra-industry trades or whether the exports are manufactured goods or natural resources may give interesting and different results. However, the study was successful in explaining the IFDI - exports nexus and the results are in accordance with most of the existing literature.

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Intention to Implement 5S Management Among Students in Higher Education Institutions

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Abstract
The aim of this research paper is to analyze intention for implementing 5S management among students in higher education institutions. The quality management method using 5S approach is function to standardized process to properly implemented creates and maintains an organized, safe, clean and efficient workplace. In this study. The 5S method was implemented to create conducive and efficient place for student activities related to academic. This study implemented quantitative method using survey development with application Technology Acceptance Model, in analyzing student intention of implementing quality management for study workspace and living space. The sampling procedure using stratified random sampling method for students that have intention and experience in implementing quality management in their daily life. The number of respondents is 120 students that studying in higher education institutions. This study developed confirmatory factor analysis for measurement model. The absolute fit index, incremental fit index and parsimonious fit index is meet the requirement level to prove measurement model is robust, reliable and represented the actual data. The structural model in this study analyzed using maximum likelihood estimator. This study indicates all of the exogenous variable have significant and positive effect to the endogenous latent construct. The Perceived Usefulness (PU) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.507 with probability value is less than 0.001. Next, the Perceived Ease of Use (PE) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.433 with probability value is less than 0. 001. Then, the Religiosity (R) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.348 with probability value is less than 0.001. The finding of this study contributes to the body of knowledge in 5S quality management and it helps policy makers in university to develop conducive environment for students.

Keywords: Technology Acceptance Model, 5S Quality Management, Structural Equation Modelling, Confirmatory Factor Analysis

1. Introduction

The 5S quality management was generalized by Toyota Production System in Japan. The main objective of 5S is to helps a workplace remove items that are not needed (sort), organize the items (straighten), clean (shine), label the items (standardize) and always organized workplace over the long term (sustain). Toyota Production System was introduced this system in year 1980 and applied in others industry in year 1990.

In current economic condition the high cost in operation management, unprecedented overflow of high-quality products contributed to continuous improvement for customers satisfaction. Besides that, organization was continuously improved the quality of products and services for sustain their position and reputation. By improvement the quality of products and services, organization can adopt the 5S practices. The Japanese manufacturing industries such as Honda, Toyota and Mitsubishi come in the list of top positions worldwide. It is a notable thing that Japanese not only achieve high level of productivity and profitability at home, but also gain success in the company's operating overseas (Randhawa and Ahuja, 2017; Hitomi, 2004).

Therefore, companies in Malaysia was encouraged to apply the 5S practices for improving the organization's productivity and profitability. 5S practices was applied in organization in order to improve the workplace environment by systematically and effectively plan, implement and monitor. Even there are many organizations apply the concept of 5S practice, but the most important is either there are really aware the important of application 5S concept in their workplace environment or not. This is because 5S practice is the hard practice to implement because of the organization are very busy and they believe that 5S is only a clean-up process. However, many successful organizations were applied the concept of 5S in their workplace and shows the excellent achievement. Thus, this study tries to explore a new insight of 5S practices in the higher education organization by investigate the awareness of 5S practice.

2. Literature review

Takasi Osada was the first person who developed the framework of 5S based on five pillars in Japanese acronym for Seiri (organization), Setion (neatness), Sesio (cleaning), Seiketsu (standardization) and Shitsuke (discipline) (Randhawa and Ahuja, 2017a). 5S framework give a good workplace environment to employees and give a good impact on the quality of their work. According to Gapp, et al., (2008) a primary objective of practicing 5S is to maximize the level of workplace health and safety in conjunction with increased productivity. It can be proved that most of the companies applies the 5S practices are satisfy and recommend this approach. For example, Sphoorti Machine Tools Pvt. Ltd. was successfully applied the 5S practices in productivity and hence profit levels. Besides that, 5S practices was increase the enthusiasm and punctuality among the workers and safer working conditions (Purohit and Shantha, 2015).

5S practices is very important because it can help organizations to reduce costs by maximizing process efficiency, effectiveness and performance through the establishment and maintenance of a high-quality, clean working environment (Suárez-Barraza and Ramis-Pujol, 2012; Hirano, 1995; Ho, 1999; Liker, 2004; Liker and Hoseus, 2008). Therefore, study by Srinivasan, et al. (2016) show that two important aspects of safety climate (management commitment and involvement) can be significantly, positively influenced by successful 5S events, which may translate to improved safety overall. Gupta and Chandna (2020) analyze the implementation of 5S in a scientific equipment manufacturing company and found that the organization become progressively beneficial and increasingly productive.

The practice of 5S has turned out to be a significant contributor in the strengthening the performance of manufacturing organizations from their earlier not so encouraging and unimpressive performance levels (Randhawa and Ahuja, (2017b). Thus, 5S implement in organizations can be defined as a methodology that results the workplace become clean, uncluttered, safe, and well organized to help reduce waste and optimize productivity. 5S practice also was designed to help build a quality work environment, both physically and mentally (Abu Bakar, et al., 2019). Therefore, the function of 5S practices is to improve process of efficiency and safety, reduces waste, prevents errors and defects in organizations.

This study was adopted the Technology Acceptance Model Theory (Davis, 1989) with two primary factors influencing an individual's intention to use new technology: perceived ease of use and perceived usefulness. Various study used theory acceptance model in their researches. For example, Kuciapski (2017) used the theory of acceptance and use of technology to explain the determinants that affect employees' intention to use mobile devices and software for knowledge transfer during the process of knowledge management. Lindsay (2011) adapted technology acceptance model for mobile policing. Then, Gamal Aboelmaged (2010) used technology acceptance model to predict e-procurement.

Therefore, the main objective of this study is to examine the intention of 5S practice in the daily life among students in higher education. Students are encouraged to explore the information regarding the 5S practice using internet. This study used the questionnaire method to explore the awareness of 5S practice in higher education. This questionnaire is focused on the intention of students use internet in gather information regarding 5S practice. This study was introduced a new variable known as religiosity as addition variables. This is because in the religious of Islam, the factor of cleanliness is very important and compulsory to perform.

2. Research methodology

This main objective of this study is to evaluate the intention to implement 5S quality management among students in higher education institution. This study implemented Technology Acceptance Model as framework for analysis. The determinant factors that involved in this study are Perceived Usefulness (PU), Perceived Ease of Use (PE) and Religiosity (R).

2.1 Participant Characteristics and Sampling Procedure

The participants in this study are students that have experienced and knowledge in practicing quality management in their life including study workspace and daily life activities. This study using stratified random sampling method. This study prepared 140 surveys are submitted and 120 surveys are returned back. The percentage of survey response rate is 85.7 percentages. The demographic characteristics for gender respondents are 80 female students and 60 male students. Each respondent was given time to answered the survey in their preferred time using online platform. Each of the construct have six items that composed 24 items in this study to evaluate intention among students in implementing 5S quality management in their life and environment. This study using ten-points of measurement scale to make sure all data is interval that valid parametric analysis in statistic of structural equation modelling.

2.2 Theoretical Framework and variables selection

This study used Technology Acceptance Model (Davis, et al., 1989). This theory assumes that perceived usefulness and perceived ease of use are always the primary determinants of technology adoption in organizations (Lu, et al., 2003). Therefore, this study choose three variables in measuring the intention of implementation 5S among higher education students. The variables are perceived ease of used (Adams, et al., 1992), perceived usefulness (Chau, 1996) and religiosity (Bukhari, et al., 2019). The main function of this variables is to identify the intention of students in implement 5S practice in their life in higher education institution.

2.3 Confirmatory factor analysis

In this study, the measurement model was analyzed to developed reliable findings that fit with actual data from real questionnaire. This study implemented confirmatory factor analysis (CFA) in developing measurement model that meet requirement for model fit indexes. The confirmatory factor analysis involved with unidimensional checking, factor loading checking, modification checking, outlier detections.

For measurement model, this study performed validity test for convergent, construct and discriminant validity. The convergent validity is function to show that measures that should be related are in reality related. In this study, the convergent validity assessed using Average Variance Extracted (AVE) as shown in Equation (1).

$$AVE = \frac{\sum_{i=1}^{n} \lambda_i}{n} \qquad (1)$$

Where,

λ_i: Standardized factor loading for item *i*.

n: Number of items that measure a latent construct.

In developing a construct that meet convergent validity, the value of AVE should be greater or equal to 0.5.

Next, this study developed construct validity using three types of model fit indexes namely absolute fit index, incremental fit index and parsimonious fit index. The absolute fit index was measured using Root Mean Square Error of Approximation (RMSEA). The RMSEA avoids issues of sample size by analyzing the discrepancy between the hypothesized model, with optimally chosen parameter estimates, and the population covariance matrix. RMSEA is an absolute fit index, which evaluates how far a hypothesized model is from a perfect model. The calculation for RMSEA is shown in Equation (2).

$$RMSEA = \sqrt{Max\left(\left[\left(\left(\frac{\chi^2}{df}\right)-1\right)/\left(n-1\right)\right],0\right)} \qquad (2)$$

Where,

χ^2: Chi-square value.

df : Degree of freedom.

n: Sample size.

In attaining reliable measurement model, the value of RMSEA should be lower than 0.08. RMSEA is the fit index of the difference between observed and hypothesized covariance matrix.

Next, this study also checked the construct reliability (CR) to measure reliability and internal consistency of the measured variables representing a latent construct. The value of CR should be larger than 0.6 to prove a construct is reliable. The value of CR derived using Equation (3).

$$CR = \frac{\left(\sum_{i=1}^{n} \lambda_i\right)^2}{\left(\sum_{i=1}^{n} \lambda_i\right)^2 + \left(\sum_{i=1}^{n}\left(1-\lambda_i^2\right)\right)} \qquad (3)$$

Where,

λ_i: Standardized factor loading for item *i*.

n: Number of items that measure a latent construct.

4. Results and discussion

This study evaluated the relationship between three exogenous constructs (perceived usefulness, perceived ease of use and religiosity) with an endogenous construct (Intention to implement 5s management). The sample size is 120 students of higher education institutions in Malaysia. This study implemented structural equation modelling to analyzed the correlation and path analysis. The confirmatory factor analysis was performed to developed measurement model that has better fit indexes between actual data and proposed model.

4.1 First stage of confirmatory factor analysis

Confirmatory factor analysis (CFA) is functions to performs the assessment of fit between observed data and an a priori conceptualized, theoretically grounded model that specifies the hypothesized causal relations between latent factors and their observed indicator variables. The process of CFA evaluating three main components namely unidimensional characteristic, validity and reliability for all latent constructs. Figure 1 shows the first stage of confirmatory factor analysis for measurement model for assessing intention in implementing 5S management.

Unidimensional characteristic is achieved when the measuring items have acceptable factor loadings for the respective latent construct. Unidimensional characteristic indicates that is the items in a questionnaire measure only a single construct. Figure 1 shows factor loading for items for each construct are higher than 0.6. Therefore, measurement model in Figure 1 achieved unidimensional characteristic.

Then, this study evaluated the fitness of the measurement model using absolute fit index, incremental fit index and parsimonious fit index. Table 1 shows the fit indexes of measurement model in first stage of confirmatory factor analysis.

The absolute fit index determines how well the hypothesized theoretical model fits the sample real data and demonstrates which proposed model has the most superior fit. This measure provides the most fundamental indication of how well the proposed theory fits with the real data.

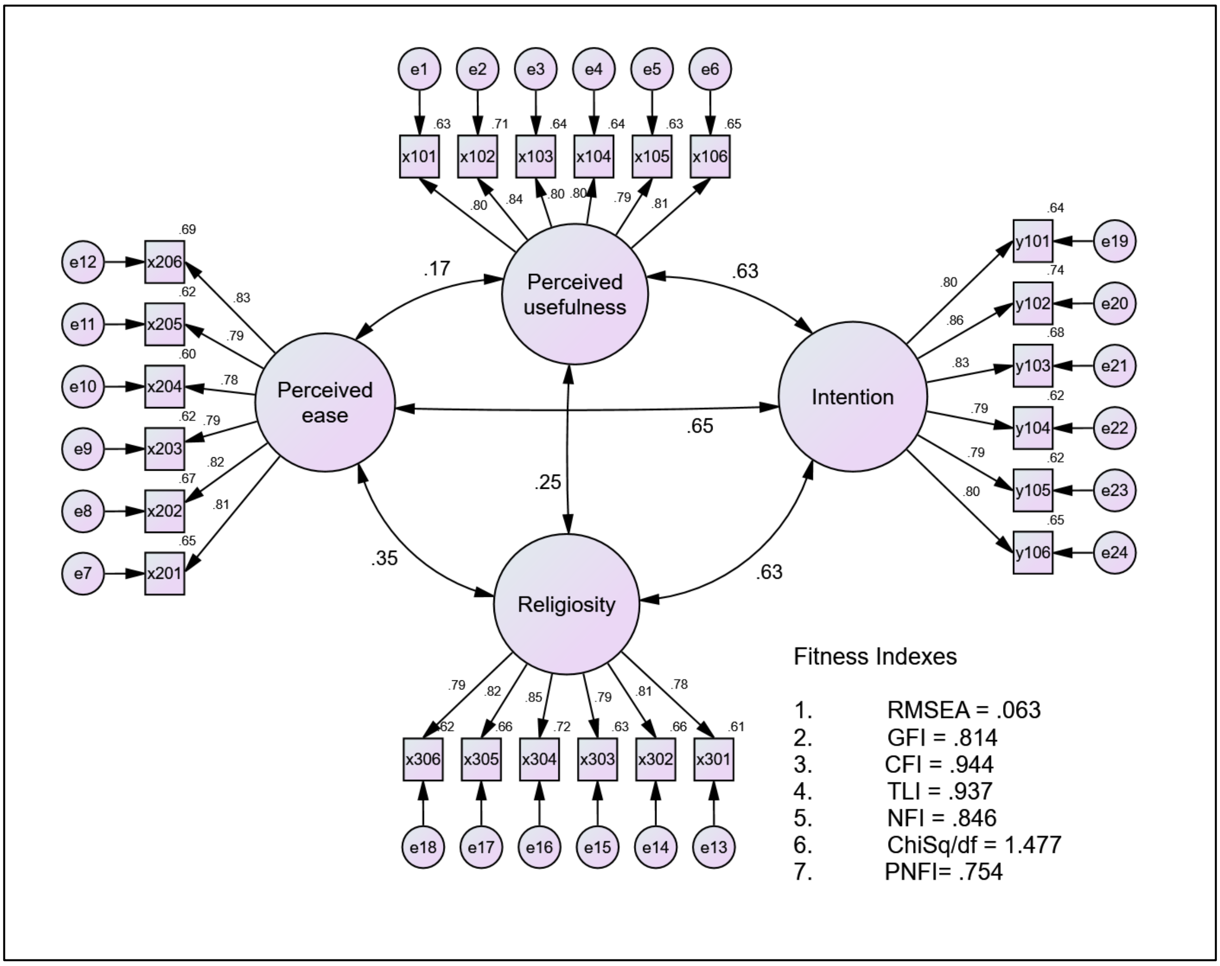

Figure 1. First stage of confirmatory factor analysis

In this study, the absolute fit is tested using Root Mean Square Error of Approximation (RMSEA) and Goodness of Fit Index (GFI). The RMSEA value for measurement model in this study is smaller than acceptable value 0.08. Therefore, according to RMSEA the measurement model shows good fit between proposed model and actual data.

However, the value of second index, GFI is 0.814 which is smaller than requirement level. Therefore, the measurement level need some modification to increase the GFI value.

The second group of model fit is incremental fit which measured using Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Normed Fit Index (NFI). The incremental fit is comparing how well the proposed model fit with an alternative baseline model which is null model. In most cases, the null model is a single construct model with all indicators perfectly measuring the construct. In this study, value of CFI and TLI are larger than 0.90. Therefore, the proposed of measurement model is fits well with baseline model. However, the value of NFI is still lower than required level of 0.90. The value of NFI concluded that measurement model need some modification to achieve higher value.

Next, the third group of model fit index is parsimonious fit which evaluates the model fit of competing models by comparing the degree of model complexity and either improves it to become a better fit or produces a simpler model. The parsimonious fit was measured using two indexes namely Chi Square/ Degrees of freedom (ChiSq/df) and Parsimony Normed Fit Index (PNFI). The value of ChiSq/df is 1.477 that meet requirement level for indicating the measurement model in this study is parsimonious models which have relatively few parameters to estimate. The value PNFI is 0.754 that is larger than requirement. Therefore, measurement model in this study is parsimonious model which is simple hypothesized model is favorable than complex model.

Table 1. Model fit analysis for measurement model in first stage of confirmatory factor analysis

Name of category for fit index	Name of index	Level of acceptance	Value for measurement model	Status of acceptance
1. Absolute fit	Root Mean Square Error of Approximation (RMSEA)	RMSEA < 0.08	0.063	The required level is achieved
	Goodness of Fit Index (GFI)	GFI > 0.90	0.814	The required level is NOT achieved
2. Incremental fit	Comparative Fit Index (CFI)	CFI > 0.90	0.944	The required level is achieved
	Tucker-Lewis Index (TLI)	TLI > 0.90	0.937	The required level is achieved
	Normed Fit Index (NFI)	NFI > 0.90	0.846	The required level is NOT achieved
3.Parsimonious fit	Chi Square/ Degrees of freedom (ChiSq/df)	ChiSq/df < 5.0	1.477	The required level is achieved
	Parsimony Normed Fit Index (PNFI)	PNFI > 0.50	0.754	The required level is achieved

4.2 Second stage of confirmatory factor analysis

In this study, the measurement model in first stage of confirmatory factor analysis need some modifications to make sure all model fit indexes are achieved the required level. In first stage of confirmatory factor analysis, GFI and NFI still have some problem, therefore measurement model need to adjust according to modification index. This study evaluated the analysis using IBM SPPS Amos to develop more reliable measurement model in analyzing relationship between independent variables and dependent variable.

Figure 2 shows the measurement model for second stage of confirmatory factor analysis. In this figure, items were deleted according to modification index. For each of latent construct, the number of items is four. Uni-dimensional characteristics achieved in this measurement model with all of items achieve higher than 0.6 of factor loading. Therefore, the measurement model is sufficiently accurate representation of the data.

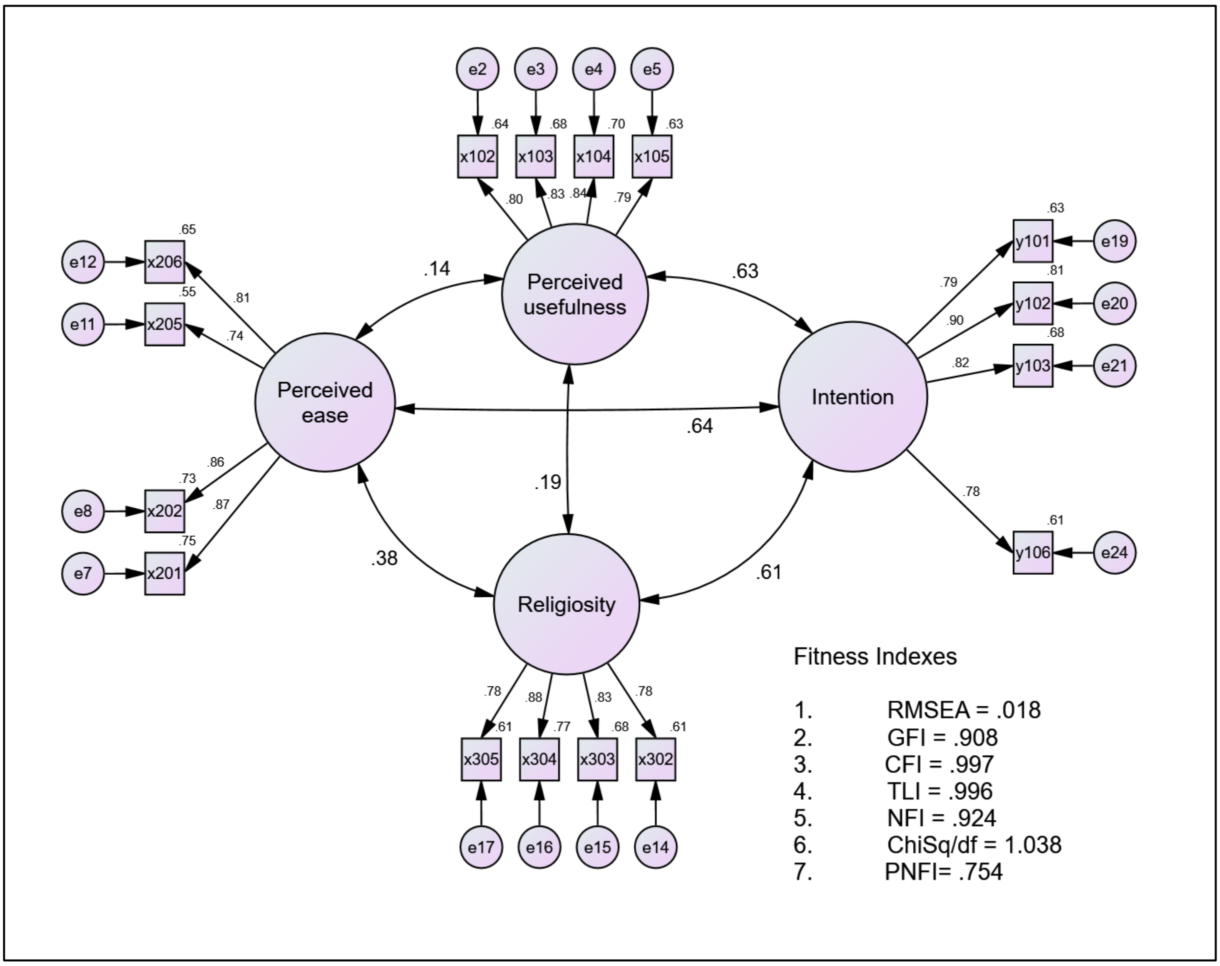

Figure 2. Measurement model for second stage of confirmatory factor analysis

Next, this study validated the model fit for three categories of indexes. The first model fit index is absolute fit indexes measured using two methods namely Root Mean Square Error of Approximation (RMSEA) and Goodness of Fit Index (GFI). After the modification process, measurement model in second stage of confirmatory factor analysis exhibits the value of RMSEA is 0.018 and GFI is 0.908. Both of these indexes show good agreement that measurement model is a priori model that fits the sample data.

Then, the second category of model fit index namely incremental fit. In this study, three incremental fit are selected namely Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Normed Fit Index (NFI). After the modification in second stage of confirmatory factor analysis, three incremental fit indexes are achieved required level for indicating good fit model. As a conclusion, an incremental fit index is analogous to R^2 and so a value of zero indicates having the worst possible model and a value of one indicates having the best possible. In this study CFI value is 0.997, TLI value is 0.996 and NFI value is 0.924. The measurement model shows good incremental fit. The comparison chi-square for the hypothesized model to one from a null model indicates measurement model in this study exhibits good fit.

Next, the third category of model fit is represented by parsimonious fit. In this study, the parsimonious fit is represented by two indexes namely Chi Square/ Degrees of freedom (ChiSq/df) and Parsimony Normed Fit Index (PNFI). The value ChiSq/df is 1.038 that is meet the requirement value for parsimony model. Value of PNFI is 0.754 which larger than 0.05 to indicates measurement model in this study is parsimonious model for indicating relationship between exogenous latent constructs with endogenous latent construct.

As a conclusion, this study developed measurement model that exhibits absolute fit, incremental fit and parsimonious fit, after second stage the confirmatory factor analysis. In the same time, unidimensional characteristic is achieved because all of factor loading for items are higher than 0.60. Therefore, this measurement model is valid and reliable for adopt in causal path analysis of structural equation modelling.

Table 2. Model fit analysis for measurement model in second stage of confirmatory factor analysis

Name of category for fit index	Name of index	Level of acceptance	Value for measurement model	Status of acceptance
1. Absolute fit	Root Mean Square Error of Approximation (RMSEA)	RMSEA < 0.08	0.018	The required level is achieved
	Goodness of Fit Index (GFI)	GFI > 0.90	0.908	The required level is achieved
2. Incremental fit	Comparative Fit Index (CFI)	CFI > 0.90	0.997	The required level is achieved
	Tucker-Lewis Index (TLI)	TLI > 0.90	0.996	The required level is achieved
	Normed Fit Index (NFI)	NFI > 0.90	0.924	The required level is NOT achieved
3.Parsimonious fit	Chi Square/ Degrees of freedom (ChiSq/df)	ChiSq/df < 5.0	1.038	The required level is achieved
	Parsimony Normed Fit Index (PNFI)	PNFI>0.50	0.754	The required level is achieved

Table 3. Validity and reliability testing for confirmatory factor analysis

Construct	Item	Factor Loading	Cronbach Alpha (Requirement is above 0.7)	Construct Reliability, CR (Requirement is above 0.6)	Average Variance Extracted, AVE (Requirement is above 0.5)
X1: Perceived Usefulness, (PU)	x102	0.80	0.887	0.665	0.888
	x103	0.83			
	x104	0.84			
	x105	0.79			
X2: Perceived Ease of Use, (PE)	x201	0.87	0.890	0.675	0.892
	x202	0.86			
	x205	0.74			
	x206	0.81			
X3: Religiosity, (R)	x302	0.78	0.888	0.670	0.890
	x303	0.83			
	x304	0.88			
	x305	0.78			
Y1: Intention to implement 5S, (I)	y101	0.79	0.894	0.679	0.894
	y102	0.90			
	y103	0.82			
	y106	0.78			

Table 3 indicates the result of validity and reliability for measurement model after second stage of modification. Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability. The value of Cronbach Alpha for first exogenous latent construct, X1 is 0.887. Therefore, items that measured X1 show reliability of scale for internal consistency. Next, the Cronbach Alpha for second exogenous latent construct, X2 is 0.890. This value indicates all items that measured X2 are considered as one group to prove internal reliability. Then, the value of Cronbach Alpha for exogenous latent construct, X3 is 0.888. This value shows X3 was measured by the items have shared covariance and probably measure the same underlying concept. The value of Cronbach Alpha for endogenous latent construct, Y1 is 0.894. This value is larger that requirement level. Therefore. All items that measured Y1 are meet with requirement of internal consistency and scale reliability.

Table 3 also indicates the value of Construct Reliability, CR for testing the total amount of true score variance relative to the total scale score variance. In this study, the value of CR for X1 is 0.665 that indicates the measurement model shows construct internal reliability. Next, the value of Cr for X2 is 0.675 that is larger than 0.6. Therefore, X2 is a construct that exhibits reliability with considering the total amount of true score variance relative to the total scale score variance. Next, the value of Cr for X3 is 0.670 that indicates the construct meet the required level of internal reliability. Then, the value of CR for Y1 is 0.679 that proved construct with appropriate internal reliability in measuring intention for implementing 5S quality management.

In addition, Table 3 also describes the analysis value for Average Variance Extracted, AVE. The requirement level for AVE is above 0.5. The Average Variance Extracted (AVE) is a measure of the amount of variance that is captured by a construct in relation to the amount of variance due to measurement error. The Average Variance Extracted (AVE) is a measure to assess convergent validity. The AVE is the average amount of variance in indicator variables that a construct is managed to explain. AVE for each construct can be obtained by sum of squares of completely standardized factor loadings divided by this sum plus total of error variances for indicators.

The value of AVE for first exogenous latent construct, X1 is 0.888. This indicates X1 meet the requirement of construct reliability for convergent validity. Convergent validity involves measuring a construct with independent measurement techniques and demonstrating a high correlation among the measures. Next, the value of AVE for second exogenous latent construct, X2 is 0.892. This value indicates X2 shows reliability characteristic. Next, the value of AVE for third exogenous latent construct, X3 is 0.890. The AVE value for X3 is larger than requirement level to prove that X3 shows the extent to which responses on a test or instrument exhibit a strong relationship with responses on conceptually similar tests or instruments.

Then, this study evaluated AVE for endogenous latent construct namely intention to implement 5S quality management among students in higher education institutions. The value of AVE is 0.894 that indicates Y1 is demonstration of substantial and significant correlation between different instruments designed to assess a common construct.
Next, this study developed discriminant validity for measurement model as shown in Table 4. The diagonal values in bold is the square root of AVE, while other values are the correlation between the corresponding latent constructs. The discriminant validity is considered as achieved in condition of a diagonal value in bold is higher than the values in its row and column. Discriminant validity is demonstrated by evidence that measures of constructs that theoretically should not be highly related to each other are, in fact, not found to be highly correlated to each other. The discriminant validity assessment has the goal to ensure that a reflective construct has the strongest relationships with its own indicators. Discriminant Validity determines whether the constructs in the model are highly correlated among them or not. It compares the square root of AVE of a particular construct with the correlation between that construct with other constructs. The value of Square Roof of AVE should be higher that the correlation.

Table 4 shows the diagonal values derived from the square root of AVE are larger than values in its row and column. Therefore, X1, X2, X3 and X4 are the reflective constructs has strongest relationships with its own indicators.

Table 4: Discriminant validity for measurement model

Construct	X1	X2	X3	Y1
X1	**0.942**			
X2	0.141	**0.945**		
X3	0.188	0.375	**0.943**	
Y1	0.628	0.638	0.614	**0.946**

4.3 Causal path analysis using structural equation modelling for standardized regression

This section analyzed the hypothesis testing of path model in structural equation modelling. In the same time, this section describes the relationship between exogeneous latent constructs and endogenous latent construct. Figure 3 shows causal path analysis for structural equation modelling. Figure 3 shows the correlation diagram between exogenous latent constructs for Perceived Usefulness (PU), Perceived Ease of Use (PE) and Religiosity (R). The correlation value between exogenous constructs are lower than 0.85. Therefore, no serious multicollinearity exists in the structural model. Figure 3 indicates all the factor loading of items are higher than 0.6 that indicates the structural model achieved unidimensional characteristic. The structural model also exhibits a reliable model with achieved all requirement for model fit indexes.

Table 5 shows standardized regression weight for structural model. The standardized beta estimates for X1 towards Y1 is 0.500. When Perceived Usefulness, X1 goes up by 1 standard deviation contributes to increment of 0.5 standard deviation in Y1 namely intention to implement 5S quality management. Next, when Perceived Ease of Use, X2 increase by 1 standard deviation creates increment of 0.434 standard deviation in Y1 for intention to implement 5S quality management. Then, one standard deviation in Religiosity, X3 creates increment of one standard deviation in endogenous latent construct namely intention to implement 5S.

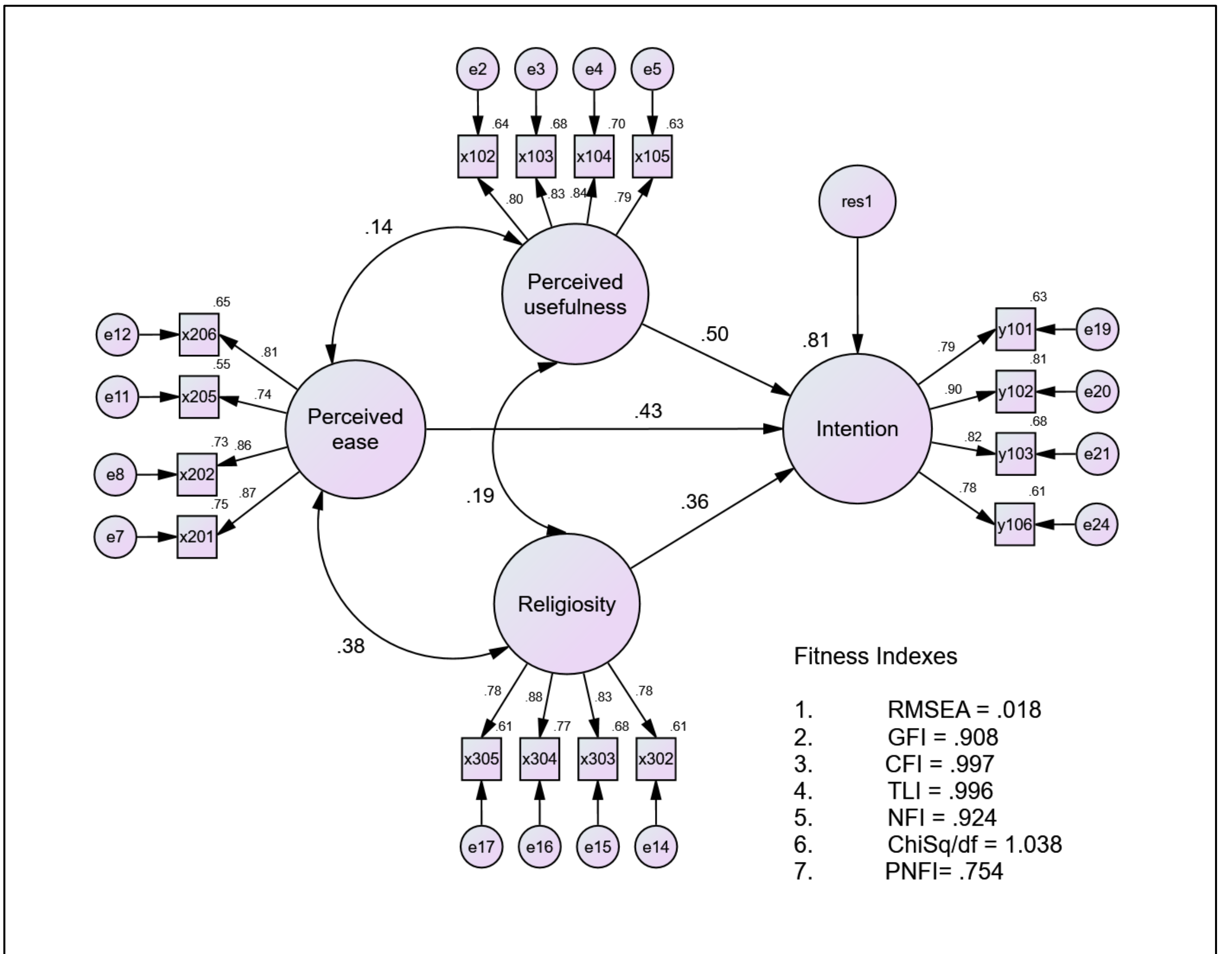

Figure 3. Structural equation modelling for path analysis of standardized regression

Table 5: Standardized regression weigh for structural model

Path (Start)	Direction	Path (End)	Standardized beta estimates
Perceived usefulness (PU), X1	⟶	Intention, Y1	0.500
Perceived Ease of Use (PE), X2	⟶	Intention, Y1	0.434
Religiosity (R), X3	⟶	Intention, Y1	0.357

4.4 Structural model for hypothesis testing using unstandardized estimates

This section describes the hypothesis testing for relationship between exogenous latent constructs and endogenous latent construct. This study shows the R-squared for regression model is 81% that is considered as good model of prediction. The value of R-squared shows 81 percentages of the variance in the dependent variable that is predictable from the independent. R-squared is a statistical measure of how close the data are to the fitted regression line. In this study, 81% of actual data are fitted to predicted regression line. The value of R-squared shows the structural model exhibits good model fit with actual data.

Figure 4 shows the unstandardized estimation of structural model. This study using unstandardized model to evaluate measurement error and hyphotesis testing. Figure 4 shows the measurement errors in this study are less than 0.50. Therefore, measurement error less than 1.0 is considered as reliable model. The all items in this study exhibits low error for reliable model.

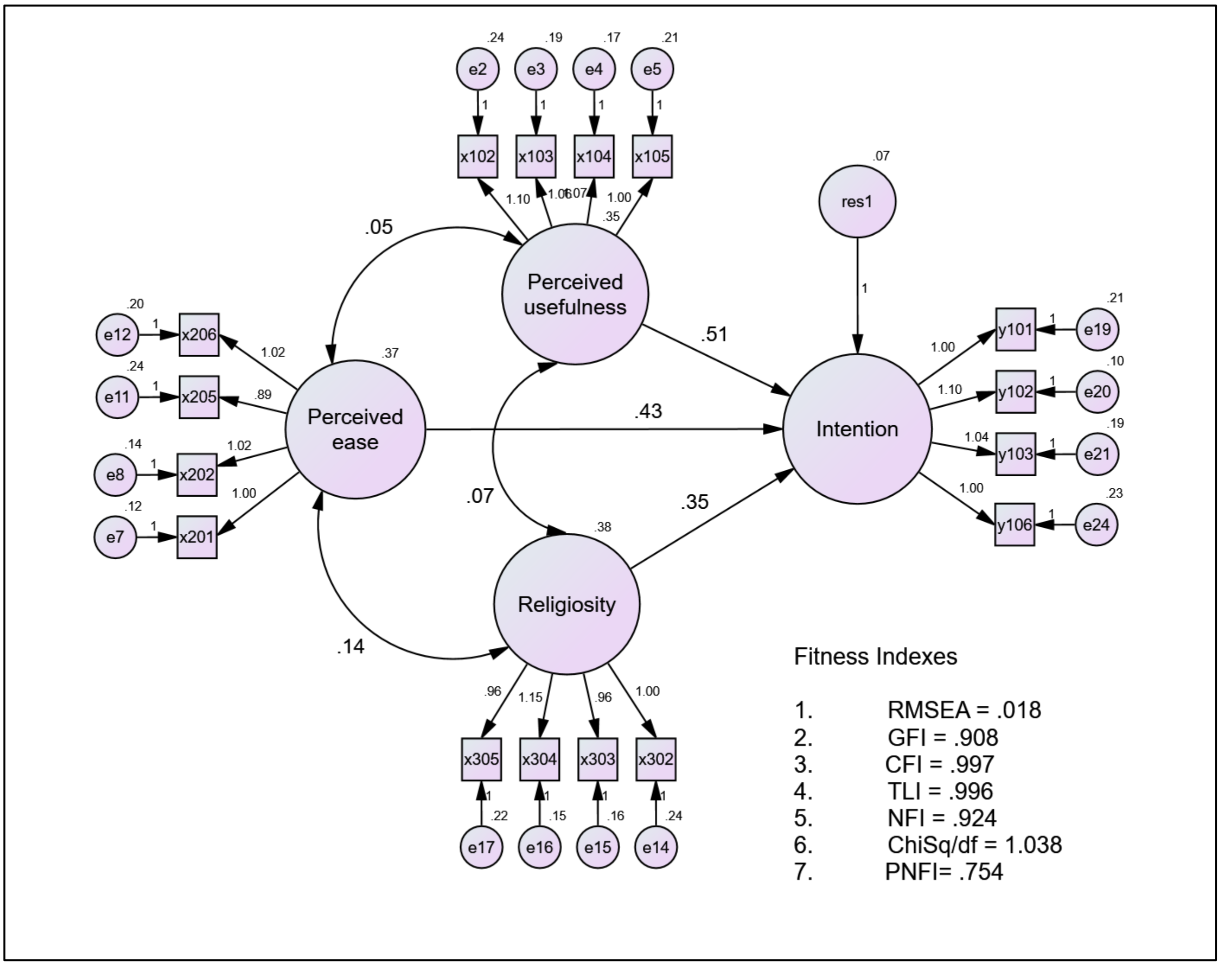

Figure 4. The unstandardized estimation of structural model

Table 6: Significant relationship analysis using unstandardized regression weight

Path (Start)	Direction	Path (End)	The actual beta values	Standard error (S.E.)	Critical Ratio (C.R.)	P-value
Perceived Usefulness (PU), X1	⟶	Intention (I), Y1	0.507	0.078	6.495	***
Perceived Ease of Use (PE), X2	⟶	Intention (I), Y1	0.433	0.074	5.890	***
Religiosity (R), X3	⟶	Intention (I), Y1	0.348	0.072	4.851	***

*** less than 0.001

Table 6 shows the significant relationship analysis using unstandardized regression weight. The value of actual beta for Perceived Usefulness (PU), X1 is 0.507. Therefore, when X1 goes up by 1 unit, Y1 goes up by 0.507 unit. The value of p-value is less than 0.001 for relationship between exogenous latent construct, X1 and endogenous latent construct, Y1. Therefore, the regression weight for X1 in the prediction of Y1 is significantly different from zero at the 0.001 level of two-tailed test.

Next, the value of actual beta for Perceived ease of Use (PE), X2 is 0.433. Therefore, when X2 goes up by 1 unit, Y1 goes up by 0.433 unit. The value of p-value is less than 0.001 for relationship between exogenous latent construct, X2 and endogenous latent construct, Y1. Therefore, the regression weight for X2 in the prediction of Y1 is significantly different from zero at the 0.001 level of two-tailed test.

Then, the value of actual beta for Religiosity (R), X3 is 0.348. Therefore, when X3 goes up by 1 unit, Y1 goes up by 0.348 unit. The value of p-value is less than 0.001 for relationship between exogenous latent construct, X3 and endogenous latent construct, Y1. Therefore, the regression weight for X3 in the prediction of Y1 is significantly different from zero at the 0.001 level of two-tailed test.

Table 7: Result of hypothesis testing

Hypothesis	Hypothesis statement	Result	Beta	P-value
H1	The Perceived Usefulness (PU) has positive and significant direct effect on the Intention (I) to implement 5S quality management	Supported	0.507	***
H2	The Perceived Ease of Use (PE) has positive and significant direct effect on the Intention (I) to implement 5S quality management	Supported	0.433	***
H3	The Religiosity (R) has positive and significant direct effect on the Intention (I) to implement 5S quality management	Supported	0.348	***

*** less than 0.001

Table 7 shows the result of hypothesis testing among exogenous latent constructs with endogenous latent construct. The exogenous latent constructs are Perceived Usefulness (Pu), Perceived Ease of use (PE) and Religiosity (R). Meanwhile, endogenous latent construct is Intention (I) to implement 5S quality management among students in higher education institutions. The result of first hypothesis (H1) indicates that the direct effect between Perceived Usefulness (PU) on Intention (I) to implement 5s quality management is supported. The beta value is positive 0.507 with probability value is less than 0.001.

Furthermore, the result of second hypothesis (H2) indicates that the direct effect between Perceived Ease of Use (PE) on Intention (I) to implement 5s quality management is supported. The beta value is positive 0.433 with probability value is less than 0.001.

Next, the result of third hypothesis (H3) indicates that the direct effect between Religiosity (R) on Intention (I) to implement 5s quality management is supported. The beta value is positive 0.348 with probability value is less than 0.001.

This study was supported by previous study (Hubert, et al., 2019; Marakarkandy, et al., 2017; Singh, et al., 2006) that used theory of acceptance model in their research. In addition, perceived ease of use (Rauniar, et al., 2014; Teo et al., 2011; David, 1989) and perceived usefulness (Ben Mansour, 2016; Slatten, 2012; Sheikhshoaei, and Oloumi, 2011) found to statistically significant. Study that used religiosity as one of the variable also found to be statistically significant (Amin, et al., 2014; Mokhlis, 2009; Abdullah and Abd-Majid, 2003).

5. Conclusion

The objective of this study is to evaluate the determinant factors for intention to implement 5S quality management among students in higher education institutions. The determinant factors are Perceived Usefulness (PU), Perceived Ease of Use (PE) and Religiosity (R). The This study using questionnaire development approach for latent constructs. Then, for data collection analysis is performed using structural equation modelling. The sampling procedure is using probability sampling methods namely stratified random sampling. The number of respondents is 120 students. The main findings of this study are:

(i) The measurement model achieved the requirement level for all three types of model fit indexes namely absolute fit, incremental fit and parsimonious fit. The absolute fit was measured using Root Mean Square Error of Approximation (RMSEA). The value of RMSEA is less than 0.08 that indicates measurement model indicates good model fit of the discrepancy between the hypothesized model, with optimally chosen parameter estimates, and the population covariance matrix. The incremental fit was measured using Comparative Fit Index (CFI). The value of CFI is larger than required level of 0.9 that indicates measurement model shows good incremental fit indices that compare the fit of a hypothesized model with that of a baseline model of a model with the worst fit. Next, this study evaluated parsimonious fit using Parsimony Normed Fit Index (PNFI). The value of PNFI is larger than required level of 0.5. Therefore, measurement model proved that simpler theoretical processes are favored over more complex ones.

(ii) The structural path analysis was evaluated using structural equation modelling. The relationship between three exogenous latent constructs with one endogenous latent construct were analyzed with maximum likelihood algorithm. This study indicates all of the exogenous variable have significant and positive effect to the endogenous latent construct. The Perceived Usefulness (PU) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.507 with probability value is less than 0.001. Next, the Perceived Ease of Use (PE) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.433 with probability value is less than 0. 001.Then, the Religiosity (R) has positive and significant direct effect on the Intention (I) to implement 5S quality management. The beta value is positive 0.348 with probability value is less than 0.001.

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Cyclical Fluctuation, Growth, and Stabilization: An Empirical Investigation of Dual Policy Objectives in Bangladesh

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Abstract
In conventional economics, two types of macroeconomic policy i.e. fiscal policy and monetary policy are used to streamline the business cycle. This paper has examined the cyclical behavior of these variables over the business cycle of Bangladesh. The objective of this examination is to show whether policies (fiscal policy and monetary policy) in Bangladesh are taken with a motive to stabilize the economy or only to promote economic growth. In other words, it has examined whether the policies in Bangladesh are procyclical or countercyclical or acyclical. Hodrick Prescott (HP) filter has been used to separate the cyclical component of considered variables. Both correlation and regression-based analysis have provided that in Bangladesh government expenditure and interest rates behave procyclically, but money supply behaves acyclically over the business cycle. Besides, this paper has tried to identify the long-term as well as the short-term relationship between real GDP and the macroeconomic policy variables with the help of the Johansen cointegration test, vector error correction model (VECM), and block exogeneity Wald test. Through these analyses, this study has found that fiscal policy has a significant impact on GDP growth both in the short-run and long-run. In the case of monetary policy, although the interest rate has an impact on real output both in the short-run and long-run, the money supply has neither a short-run nor long-run effect on output growth.

Keywords: Cyclical Behavior, Fiscal Policy, Monetary Policy, Macroeconomics, Business Cycle, Cointegration, VECM, Granger Causality, Block Exogeneity

1. Introduction and Background

In capitalist economies, macroeconomic variables experience frequent fluctuation on their long term growth paths. Before the great depression, one of the main objectives of economic research was to examine this cyclical behavior. After the introduction of Keynesian economics, the key focused shifted to the determination of output in the short-run (Hodrick & Prescott, 1996). Notwithstanding, the stagflation in the 1970s has inspired economists to focus again on the study of economic fluctuation. As a result, the study of the business cycle has taken an important place in macroeconomic research.

The business cycle is usually measured by the real GDP. In conventional economics, two types of macroeconomic policy such as fiscal policy and monetary policy are used to streamline the business cycle. The fiscal policy instruments i.e. government expenditure and taxes play an important role to reduce the uneven economic development across countries. In this consideration, John Maynard Keynes suggested taking contractionary fiscal policy during the boom period, and expansionary fiscal policy during the recession (Klein, 1950). This provided that, Keynes focusses on the countercyclical behavior of the fiscal policy instrument. Moreover, the monetary policy instruments i.e. money supply and interest rate also have a momentous impact on the business cycle. Since expansionary monetary policy- increasing the money supply or lowering the interest rate, is expected to boost real output and vice versa, a countercyclical monetary policy is expected to be expansionary during the recession and contractionary during the boom.

The policies taken by the fiscal and monetary authorities have a direct impact on the growth of an economy. The relative effectiveness of fiscal and monetary policy is a debatable issue. While the monetarist believes that the central bank must raise the supply of real money balances to stimulate growth, the Keynesians put more emphasis on fiscal policy as a stabilization tool.

In Bangladesh, the monetary policy decisions are taken by Bangladesh Bank (the central bank of the country). But, in many cases, the bank is directly controlled by the government. The main objectives of the monetary policies taken in Bangladesh are to keep the price level and exchange rate stable and ensure the growth of the economy. The fiscal policies are usually taken by the ministry of finance and the executive branch of the government. Over the past few years, the government has adopted expansionary fiscal policy while the budget deficit has been kept stagnant at 5 percent of GDP (Ministry of finance, 2020).

The economy of Bangladesh is Booming in recent years. The GDP growth rate is consistently rising over the last few years. The average growth rate of real GDP was about 7.4 percent over the last 5 years. While the economy of Bangladesh has been experienced a consistent rise in the growth rate of GDP, there have been found significant ups and downs in the growth rate of policy variables. For an instant, in the last 4 years, the growth rate of government expenditure was 8.37, 7.76, 15.41, and 9.01 respectively, and the growth rate of the money supply was 14.89, 16.69, 13.75, and 11 respectively (The world Bank 2020). This fluctuating behavior of the policy variables raises the scope of investigating the cyclical behavior of the policy variables over the business cycle, and the study has taken the scope. Moreover, in the case of the relative effectiveness of the fiscal and monetary policy, the existing studies provide ambiguous directions. Some studies have mentioned fiscal policy is relatively more effective, some have mentioned the monetary policy to be more effective (Rahman, 2005). Besides, some studies have mentioned while the fiscal policy is effective, monetary policy is completely ineffective (Chowdhury, 1996). This study will try to address this debate empirically.

In this regard, the study has set its **objectives** to-

(i) examine the cyclical behavior of different macroeconomic policy variables of Bangladesh over the business cycle to show whether policies in Bangladesh are taken with the motive to stabilize the economy or only to promote economic growth, and
(ii) identify the long-run as well as the short-run relationship between real output and macroeconomic policy variables to measure the effectiveness of the policies.

2. Data and Methodology

2.1. Data

This study has used the time series data of five macroeconomic variables from 1980 to 2018. The considered variables are real GDP, real government expenditure, real money supply (M2), interest rate, and consumer price index. The data of all the variables are collected from the database of the world development indicators of the World Bank (The world Bank 2020).

2.2. Methodology

To decompose the trend and cycle component of each series, this study has used the Hodrick Prescott (HP) filter. After the decomposition, the study has used both a correlation approach as well as a regression-based approach to examine the cyclical behavior of different policy variables over the business cycle. Besides, to analyze the long-run as well as the short-run relationship between real GDP and macroeconomic policy variables it has performed the Unit root test, Johansen cointegration test, vector error correction model (VECM), and block exogeneity Wald test.

3. Cyclical Behaviour of Macroeconomic Policy Variables over the Business Cycle

Macroeconomics variables such as real GDP, real money supply, and government spending usually exhibit upward trends and therefore are nonstationary. Thus, to identify the cyclical behavior of these variables, it is essential to detrend each series. The detrending technique like the HP filter usually estimates the trend component of a series to make it possible to derive the cyclical component of a series (Ahumada & Garegnani, 1999). The cyclical component obtained from the detrending technique is usually stationary. The statistical properties of the co-movement of the cyclical component of real GDP with the policy variables are directed to the cyclical behavior of the policy variables (Lucas Jr, 1997; Sayan, 2006). The co-movement can be examined based on the correlation approach as well as the regression-based approach.

3.1. Types of Cyclical Behaviour

A policy variable can be Procyclical or Countercyclical or Acyclical.

3.1.1. Procyclical policy

A procyclical policy usually puts an expansionary effect on the business cycle during the boom and a contractionary effect during the recession (Khan, 2011). The procyclical behavior of different policy variables can be defined as:

- Procyclical government expenditure: The positive and significant correlation between the cyclical component of real GDP and the cyclical component of government spending implies government spending as an instrument of fiscal policy is procyclical over the business cycle.
- Procyclical money supply: Money supply as an instrument of monetary policy is procyclical if the correlation between the cyclical component of real GDP and the cyclical component of the money supply is positive and statistically significant.
- Procyclical interest rate: Interest rate as an instrument of monetary policy behaves procyclically over the business cycle if the correlation between the cyclical component of real GDP and the cyclical component of interest rate is found to be negative and statistically significant.

3.1.2. Countercyclical Policy

A countercyclical policy usually puts contractionary pressure on the business cycle during the boom and expansionary pressure during the recession to dampen the business cycle (Khan, 2011). The countercyclical behavior of different policy variables over the business cycle can be defined as:

- Countercyclical government expenditure: The negative and significant correlation between the cyclical component of real GDP and the cyclical component of government spending implies government spending as an instrument of fiscal policy is countercyclical over the business cycle.
- Countercyclical money supply: Money supply as an instrument of monetary policy is countercyclical if the correlation between the cyclical component of real GDP and the cyclical component of the money supply is negative and statistically significant.
- Countercyclical interest rate: Interest rate as an instrument of monetary policy behaves counter-cyclically over the business cycle if the correlation between the cyclical component of real GDP and the cyclical component of interest rate is positive and statistically significant.

3.1.3. Acyclical Policy

An acyclical policy variable does not vary significantly with the nature of the business cycle. Therefore the correlation of the cyclical component of different policy variables with that of real GDP will be insignificant or zero.

3.2. Decomposition of Series by Hodrick Prescott (HP) Filter

A given time series is the sum of growth and cyclical component under the assumption that the data is adjusted for the seasonal component. That is-

$$Y_t = g_t + c_t; \qquad \text{Where, t = 1,.........,T}$$

The Hodrick Prescott (HP) filter tries to estimate a smooth time trend of a time series variables that fits the data very well (Razzak, 1997). After finding the trend component, g_t, the cyclical component, c_t, which is assumed to be stationary, can be obtained as the difference between the actual series and the trend component. The objective function of estimating the time trend is as follows.

$$\text{Min} \sum_{1}^{T} (y_t - g_t)^2 + \lambda \sum_{1}^{T} [(g_{t+1} - g_t) - (g_t - g_{t-1})]^2$$

The first term of the objective function is the sum of the square of the cyclical component, the second term is the variability in growth component, and λ is the smoothing parameter which penalizes the variability in growth component (Hodrick & Prescott, 1996; Adefeso & Mobolaji, 2010). The larger the value of λ the smoother the g_t series. For annual data, the rule of thumb for the value of λ is 100. Since this study has used annual data, the HP filter has been applied with the value of λ is equal to 100 to decompose the trend and cycle component for all the series.

3.3. Correlation Approach to Identify the Cyclical Behaviour

As discussed in section 3.1., the direction and significance of the correlation between the cyclical component of policy variables and the cyclical component of real GDP measure the cyclical behavior of policy variables. In this consideration, Table 1 presents the correlation of the cyclical component of policy variables with the cyclical component of real GDP. Besides, Table 1 also presents the standard deviation of each variable to measure the variability of each variable individually.

Table 1: Policy Instruments' Standard Deviation and Correlation with Real GDP

	Standard deviation	Correlation with Cyclical Component of real GDP	Nature of cyclical behavior
Cyclical Component of Real GDP	7.60	-	-
Cyclical Component of Government spending	1.01	0.747***	Procyclical
Cyclical Component of the Money supply	6.78	0.242	Acyclical
Cyclical Component of Interest rate	0.81	-0.285**	Procyclical

Note:*,**, and *** denote the level of significance at 10%, 5%, and 1% respectively.

Table 1 shows that the cyclical component of real GDP varies most among all the four variables. However, the variability of the cyclical component of money supply significantly high compared to other policy variables i.e. government expenditure and interest rate.

The correlation between the cyclical component of government spending and the cyclical component of real GDP is 0.75 and statistically significant at 1% level. This implies a high positive and significant correlation exists between the variables. This suggests that government expenditure is a procyclical policy instrument in Bangladesh, which implies that, when the economy is doing well, the government expenditure is higher.

On the other hand, the correlation between the cyclical component of the money supply and the cyclical component of real GDP is 0.24, but this is not statistically significant. This implies a low positive but insignificant correlation exists between the variables. Therefore it can be concluded that money supply as an instrument of monetary policy behaves acyclically over the business cycle in Bangladesh.

Finally, the correlation between the cyclical component of interest rate and the cyclical component of real GDP is -0.28 and statistically significant at 5% level. This implies low negative and significant correlation exists between the variables. It indicates that during the boom, the interest rate has an expansionary effect and vice versa. Therefore, we can conclude that although money supply as an instrument of monetary policy behaves acyclically over the business cycle, the interest rate behaves procyclically.

3.4. Regression Approach to Identify the Cyclical Behaviour

The correlation approach did not provide any information to comment on the causal relationship between the cyclical component of real GDP and policy variables. Thus, this study has also applied the regression-based approach to determine the significance of the causal relationship between the cyclical component of different policy variables and the cyclical component of the business cycle. As the business cycle is measured by the real GDP, this study regresses the cyclical component of different policy variables on the cyclical component of real output. For each policy variable, the regression model takes the following form.

$$C_{it} = \propto + \beta_{\mathrm{i}} CGDP_t + \varepsilon t$$

Where C_i is the cyclical component of each of the policy variables, and CGDP is the cyclical component of real GDP. The regressions models are estimated with the Ordinary Least Square (OLS) methods. In this case, OLS provide genuine results since the models use the cyclical component of different variables and there is no chance of spurious result due to the presence of trend in the data. The estimated values of β for each policy variable provide the nature of cyclical behavior and their associate t values provide the significance of the relationship. Table 2 presents the estimated values of βs and their significance level.

Table 2 Estimated Regression Results

	Dependent Variables					
	Cyclical component of Government Expenditure		Cyclical component of Money Supply		Cyclical component of Interest Rate	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Cyclical Component of Real GDP	0.101***	7.08	0.216	1.52	-3.07*	-1.88
Constant	0.002	1.37	-0.018	-1.60	-2.51	-1.95

Note:*,**, and *** denote the level of significance at 10%, 5%, and 1% respectively.

The result obtains here are matched with the result of the correlation approach. The coefficient of the cyclical component of real GDP is positive when regressed with the cyclical component of government expenditure and money supply, and is negative when regressed with the cyclical component of the interest rate. Here, it should be noted that the coefficient of the cyclical component of real GDP is significant at 1 percent level when regressed with the cyclical component of government spending and at 10 percent level when regressed with the cyclical component of the interest rate. However, the coefficient is insignificant when regressed with the cyclical component of the money supply. This provided that, the government expenditure and interest rate are procyclical, but the money supply is acyclical. This provides that, the shock in the money supply does not have any significant impact on the business cycle. Therefore, we can conclude that, in Bangladesh, the cyclical fluctuation of the money supply does not vary significantly with the cyclical fluctuation of real GDP. A detailed diagnosis of this behavior of money supply has been presented in section 5.

4. Long-Term & Short-Term Relationship of the Policy Variables with Real GDP

4.1. Model Specification

The growth path of an economy is mostly determined by the fiscal policy and monetary policy. So, fiscal policy and monetary policy instruments are considered explanatory variables of the model where real GDP is the dependent variable. Besides the policy instruments, this model includes the Consumer Price Index (CPI), since the price level has a significant impact on GDP. Due to the unavailability of time series data of tax rates, this model cannot include this important fiscal policy instrument into the model. Since the consequences of decreasing tax rate and increasing government expenditure on overall output are similar, it will not be a problem to comment on overall fiscal policy considering only government spending.

So, the theoretical basis of the empirical model can be written as –

$$\mathrm{LnGDP_t} = \beta_0 + \beta_1 \mathrm{LnGE_t} + \beta_2\ \mathrm{LnMS_t} + \beta_3\ \mathrm{INT_t} + \beta_4\ \mathrm{LnCPI_t} + \ \varepsilon_t$$

Where, LnGDP = Log of real GDP, LnGE=log of real government expenditure, LnMS= log of real money supply, INT= interest rate, LnCPI= log of the consumer price index, and ε= error term.

The expected sign for β_1, β_2 and β_4 is positive, and β_3 is negative.

4.2. Stationarity Test

Non-stationarity of macroeconomic variables is a common problem in time series analysis (Maysami, R. C., & Koh, T. S., 2000). As per rule, non-stationary data are unpredictable and cannot be modeled, since the results obtained by using non-stationary time series may be spurious (Naser, 2015). So, it is always suggested to carry out a stationarity test before working with time-series data. For this purpose, this study has employed the Augmented Dickey-Fuller (ADF) test and the Phillips Perron (PP) test to check the unit root (non-stationarity) for all the variables at the log level. Table 3 reports the result of the tests.

Table 3: Unit Root Test

Variables	ADF		PP		Comments
	With intercept	With trend and intercept	With intercept	With trend and intercept	
GDP	6.184	1.071	6.184	1.212	
ΔGDP	-1.418	-4.489***	-3.524***	-9.504***	I(1)
MS	-0.236	-2.606	-0.225	-2.315	
ΔMS	-5.077***	-5.002***	-4.992***	-4.906***	I(1)
GS	2.081	-1.072	2.037	-0.228	
ΔGS	-4.399***	-3.448*	-4.538***	-5.859***	I(1)
IR	-0.922	-2.399	-1.409	-1.178	
ΔIR	-4.084***	-4.197***	-4.051***	-4.081***	I(1)
CPI	0.913	0.667	0.913	0.472	
Δ CPI	0.002	0.001***	0.002	0.001***	I(1)

Note:*,**, and *** denote rejection of the null hypothesis that the series has a unit root at 10%, 5%, and 1% level of significance respectively

According to ADF test results, where the null hypothesis is variable has a unit root, all variables are non-stationary at the level in both intercept, and trend and intercept specification. But, in the case of the first difference, the hypothesis of non-stationary or presence of unit root is rejected at 99% level of confidence for all the variables except real GDP which is found insignificant in the case of intercept specification but significant in the case of trend and intercept specification.

Besides, like ADF test results, according to the PP test results, all variables are non-stationary at the level in both intercept, and trend and intercept specification. But, in the case of the first difference, the hypothesis of non-stationary or presence of unit root is rejected at 99% level of confidence for all the variables for both types of specifications.

So, it can be concluded that all the variables are integrated in order one, I(1), and the variables are ready for the co-integration test

4.3. Lag Selection Criterion

Before going for the Johansen co-integration test, the optimal lag length for Johansen procedures has to determine. For this purpose, this study has identified the VAR lag order selection criterion. Table 4 presents the result of the VAR lag order selection criterion. Based on the Schwarz Bayes criterion (SC), one lag is selected for all variables as the optimal lag length.

Table 4: VAR Lag Length Criterion

Lag	Log L	LR	AIC	SC	HQ
0	85.06358	N/A	-4.70962	-4.48516	-4.63307
1	317.9567	383.5887*	-16.9386	15.59184*	-16.4793
2	337.9553	27.0569	-16.6444	-14.1753	15.8024
3	366.8686	30.61409	-16.8746	-13.2832	-15.6498
4	392.6563	19.72004	-16.921	12.2072	-15.3134
5	464.0424	33.59345	-13.8135	-13.8135	-17.65928*

4.4. Johansen Cointegration Test: The Long-Run Relationship

To find the long-term relationship between the policy variables and real output the Johansen multivariate approach of cointegration test has been used. By examining the number of independent linear combination for a set of time series variables that yields a stationary process, Johansen approaches to identify the cointegrating relationship among the variables (Stern, 2000). To identify the presence of a cointegrating equation, considering optimal lag length equals 1 and no trend in VAR, Trace statistics and Maximum Eigen Value statistics have been calculated. Table 5 presents the results of the Johansen cointegration test. Here, the null hypothesis of no cointegrating equation is rejected in both trace and maximum eigenvalue statistics at 5% significance level. Further, the trace statistics also reject the null hypothesis of at most 1 cointegrating equation at 5% significance level. Thus, the Trace test indicates there exist at least 2 cointegrating equations while the maximum eigenvalue test indicates at least 1 cointegrating equation at 5 percent level of significance.

Table 5: Co-integration Rank Test for the Real Output Equation

	Trace Test			Maximum Eigen Value Test		
Hypothesized no of CE(s)	Trace statistics	5% critical value	Probability **	Max Eigen statistics	5% critical value	Probability **
None*	114.4160	69.81	0.0000*	60.93	33.87	0.0000*
At most 1	53.48485	47.85	0.0135*	23.86	27.58	0.1395
At most 2	29.61897	29.79	0.0524	16.15	21.13	0.2160
At most 3	13.46505	15.49	0.0988	10.05	14.26	0.2083

The existence of a cointegrating equation among the variables implies that there exists a long-term relationship among GDP, government expenditure, money supply, interest rate, and CPI. The estimated long-run regression results are presented in Table 6.

Table 6: Long Run Cointegrating Equation

	Dependent Variable: LnGDP		
	Coefficient	Standard Error	t-statistics
LnGE	0.182	0.04313	4.224
LnMS	0.003	0.01971	0.019
INT	- 0.013	0.00163	-7.747
LnCPI	0.705	0.03707	19.037
Constant	21.44	-	-

The cointegrating equation fulfills all the expected signs that are mentioned in section 4.1. The cointegrating equation shows that government spending as a fiscal policy instrument has a significant long-run impact on real output growth. The estimated coefficient of 0.18 implies that a 1 percent increase in government spending is associated with about 0.18 percent increase in real GDP. Result also shows that interest rate has a significant negative impact on GDP growth and CPI has a significant positive impact on GDP growth. But the impact of Money supply on GDP growth is found insignificant, which implies that, in the case of Bangladesh, the money supply is an ineffective monetary instrument. Why the money supply is ineffective and what is the main objective of the monetary policy of Bangladesh are explained in section 5.

4.5. Vector Error Correction Model (VECM)

Vector Error Correction Model captures the short-run adjustment dynamics of the independent variables to converge to their long-run cointegration relationship (Brüggemann, 2006). The VECM representation of the model could have the following form.

$$\Delta \mathrm{LnGDP_t} = \mathrm{C_0} + \mathrm{C_1 EC_{t-1}} + \mathrm{C_2}\ \Delta \mathrm{LnGDP_{t-1}} + \mathrm{C_3} \Delta \mathrm{LnGE_{t-1}} + \mathrm{C_4} \Delta \mathrm{LnMS_{t-1}} + \mathrm{C_5} \Delta \mathrm{INT_{t-1}} + \mathrm{C_6 CPI_{t-1}}$$

Here, C_1 is the coefficient of error correction term which measures the speed of adjustment towards long term equilibrium. Table 7 shows the value of the coefficient, Standard deviation, and t-statistics of the error correction term.

Table 7: Details of Error Correction Term

	Coefficient	Standard Error	t-statistics
Error Correction Term	-0.4188***	0.055	-7.526

Here, the error correction term is negative and statistically significant at 1% level, which indicates that there is long term adjustment from any deviation in the short run. The coefficient value implies that the speed of adjustments is 41.88 percent per year, which means approximately 2.5 years is required to adjust with any short-run shock.

4.6. VEC Granger Causality/Block Exogeneity Wald Test: The Short Run Relationship

The vector error correction Granger Causality/ Block Exogeneity Wald test has been used to see the short-run causal relationship between real GDP and policy variables. Table 8 provides the result of the test. According to the result, all the variables jointly granger cause real output. The probability value of chi sq. test statistics also shows that real government spending, interest rate, and CPI individually granger cause real output in the short run. However, the real money supply does not directly granger cause real output in the short run. So we can conclude there is a short-run causality running from government spending, interest rate, and CPI to real output but no short-run causality running from real money supply to real output.

Table 8:VEC Granger Causality Test / Block Exogeneity Wald Test

Dependent variable D(GDP)			
Excluded	Df	Chi sq.	Prob.
D (RGS)	1	3.0652	0.0800*
D (MS)	1	0.2658	0.6061
D (IR)	1	3.0181	0.0823*
D (CPI)	1	6.0716	0.0137**
ALL	4	9.5418	0.0489**

4.7. Diagnostics Test

In order to check the acceptability of the model, this study has carried out various diagnostic tests namely the autocorrelation LM test, and heteroskedasticity test, and stability test.

4.7.1. Autocorrelation LM Test

The Serial Correlation LM test confirms that there is no serial correlation in the residuals of the ECM regression up to four lags as LM statistics and their associated P-value implies not to reject the Null hypothesis of no serial correlation.

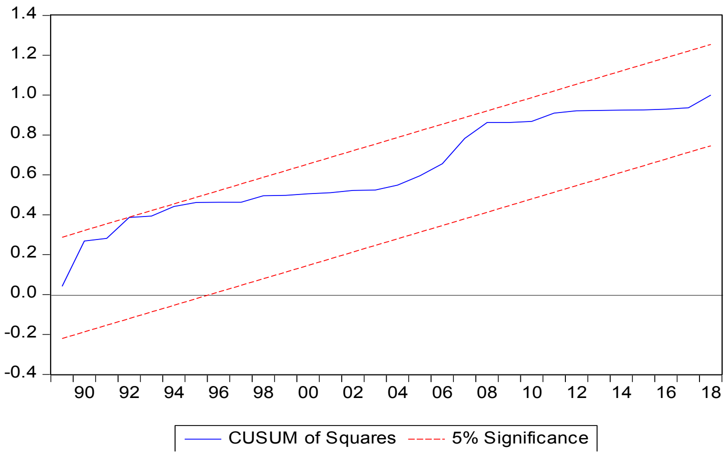
4.7.2. Heteroskedasticity Tests

The heteroskedasticity test result shows that the test cannot reject the null hypothesis of no heteroskedasticity in the case of both joint and individual tests.

4.7.3. Stability Test

The CUSUM of Squares test has been used for checking the structure stability and the constancy of the coefficients in the model. Figure 1 presents the result of the test. From figure 1 it is clear that the model is stable at a 5% level of significance.

Figure 1: CUSUM of Square test



5. Diagnosis of Monetary Policy

The study has not found any significant relationship between the cyclical component of money supply and real output (section 3.3). Besides, the result of the cointegrating equation has shown that real money balance does not have any significant impact on the real output growth in the long run (section 4.4). Finally, from the block exogeneity Wald test we have found that there is no short-run causality running from real money balances to real GDP (section 4.6). All these findings imply that money supply as an instrument of monetary policy is mostly ineffective in stimulating growth.

It is needed to diagnose the monetary policy ineffectiveness in Bangladesh. Let's determine the overall behavior of the money supply and inflation rate over the past few decades with the help of the quantity theory of money (Friedman, 1989).

We know from the quantity theory of money that-

$$MV=PY$$

Where M is the number of money balances proxied by broad money, V is the velocity of money, P is the price level proxied by the consumer price index and Y is the real output or real GDP.

This equation shows that the price level will be stable if the growth rate in money balances and the growth in the velocity of money is exactly equal to the growth rate in real output.

$$P = V\frac{M}{Y}$$

The log transformation of the equation provides,

$$Ln\ P = lnM + lnV - lnY$$
$$LnM = lnP + \ln Y - lnV$$

Thus, the growth of money supply equals the growth of price plus growth of output minus growth of velocity of money.

For Bangladesh, the average growth rate of real money balances is about 15 percent, real GDP is 5 percent, and the average inflation rate is 6 percent over the period from 1980 to 2018. Putting these estimated average growth rate into equation 2 provides that the average growth of the velocity of money is 2 percent over the period from 1980 to 2018. The increase in the money supply has an impact on the price level and the monetary authority tends to stimulate growth by increasing the money supply as the growth in the money supply exceeds the growth in the price level. But the objective of the monetary authority does not seem to be satisfied with the findings of this study. Since Bangladesh has adopted the structural adjustment policy, monetary policy has been taken very cautiously. The reason is that inflation has always been an important issue for the political government of Bangladesh. So the main objective of monetary policy in Bangladesh is to keep the price level stable. In this case, considering the growth rate of output and velocity, the monetary authority takes monetary policy to obtain the desired level of the price level. This implies that there is strong cooperation between the authority of monetary policy and the authority of fiscal policy, where fiscal policymaker focuses on economic growth and monetary policymakers focus on controlling the inflation rate. This provided that, the Bangladesh Bank (the central bank of the country) does not still have that independence to get the monetary policy instruments determined through the market mechanism. Since monetary policy instruments in Bangladesh are not market-driven rather controlled, money supply as an instrument of monetary policy is mostly ineffective in stimulating growth. Moreover, the poor monetary infrastructure and the lack of proper management also contributes to the ineffectiveness of the monetary policy. The interest rate is not being allowed to be determined by the market through the monetary mechanism and therefore the money supply has no scope for stimulating investment. Moreover, the other instruments of monetary policy such as bank rate and reserve required ratio have hardly changed in Bangladesh in recent times.

6. Conclusion

To understand the growth phenomenal of Bangladesh, the study has examined the cyclical behavior of the macroeconomic policy variables over the business cycle and empirically investigated their relative effectiveness in stimulating economic growth. From the empirical analysis, this study has shown that real output varies significantly with the cyclical fluctuation in government spending. Thus, the procyclical behavior of the fiscal policy instruments in Bangladesh implies that the most important motives behind the fiscal policy formulations are to stimulate growth. More spending on development projects has added spirit to the growth path. On the one side, Bangladesh makes huge government expenditure, but on the other side, the tax-GDP ratio of Bangladesh is very low. This implies that a large fraction of the spending comes from borrowing. But, to ensure the wellbeing of the economy and to maintain the sustainable growth of the development projects, expenditure should be financed with the revenue earned through tax instead of borrowing. Besides, the poor quality of government spending and the rising government debt may lead the country to a possible risk of recession. For this, the capability of the economy to raise the tax GDP ratio and the quality of government spending should be increased. To improve the quality of government spending Public-Private Partnership (PPP) could be a good policy instrument. However, to ensure the effectiveness of PPP good governance must be ensured.

In case of monetary policy, this study has found that although money supply as an instrument of monetary policy behaves acyclically over the business cycle, interest rate behaves procyclically. Moreover, we have found that money supply has a neither short-run nor long-run impact on GDP growth since the main objective of monetary policy is to keep the price level stable and to keep the interest rate a desirable level. However, the interest rate as an instrument of monetary policy has some impact in stimulating output growth. This implies that there is strong cooperation between the authority of monetary policy and the authority of fiscal policy, where fiscal policymaker focuses on economic growth and monetary policymakers focus on controlling the inflation rate. Thus, it seems that, by the cooperation between monetary authority and fiscal policy authority, together they successfully able to stimulate economic growth in Bangladesh. But, it should be kept in mind that this is obtained by the sacrifice of the independence of monetary authority.

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Profitability Analysis of Pharmaceutical Industry in Bangladesh

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Abstract
This paper tries to analyze profitability performance of pharmaceutical companies listed in Dhaka stock exchange in Bangladesh. To achieve the objectives, data have been collected from secondary sources of listed pharmaceutical companies listed in Dhaka stock exchange for the period from 2000-01 to 2017-18. The collected data have been categorized, tabulated and analyzed by different profitability ratios and statistical tools like mean, standard deviation and coefficient of variation. The financial ratios includes gross profit margin, operating profit margin, and net profit margin, return on equity, return on assets. The results indicates that overall profitability of the industry is satisfactory but ambee, Ibn Sina, beximco and glaxo have enough scope to improve operational efficiency and pricing strategy, assets using to generate and retain profit for the shareholders.

Keywords: Profitability, Net Profit Margin, Returns on Equity and Return on Assets

1. Introduction

The industrialization is an essential condition of development of a country. Bangladesh is a country of over sixteen million people (Bank, W., 2015). The rises in awareness concerning health care, higher per capita income and increasing government expenditure have resulted in higher demand for drugs. The sector meets ninety-eight percent of local the demand for medication and may be thought of as self-sufficient (Wahal, 2016). This quickly growing sector contributes nearly 1 percent of the gross domestic product and is presently the third-largest tax-paying sector of the country. At present, Bangladesh's pharmaceutical sector is effectively sells their product to seventy-nine countries. The quantity of export is predicted to grow in upcoming years (n, d, 2013)]. Profitability performance could be a major concern of concern to manager, management also to shareholders of corporation (Kamruzzaman, 2014). Financial performance of an organization is measured by profitability of the firm. Earning enough profit is necessary for its existence (Ross, Wester field & Jordan, 2010). It has been found from the study of the profit earning ability, liquidity position, financial position and performance of sector doesn't seem to be in sound position and it had been also a lower level position of bankruptcy (Majumder & Rahman, 2011). The explanations behind this position of the arena are inefficiency of monetary management, absence of realistic goals, strict government regulation and augmented price of raw-materials, labor and overhead. Therefore creating sustainable profit is the main goal of any business concern. There are some studies conducted by Chowdhury & Amin (2007), (Bhuiyan & Sultana (2010), (Bhuiyan, Sultana & Sultana (2011), Habib & Alam, (2011), Islam & Mili (2012) and Karim, Mamun & Miah (2017). By considering importance of the pharmaceutical sector and I have chosen an analysis of profitability of the pharmaceutical industry in Bangladesh.

1.1 Objectives of the study

The study is designed to achieve the following objectives:

- To assess the financial performance of the selected Pharmaceuticals firms.
- To identify the financial strengths and weaknesses of selected Pharmaceuticals firms.

2. Literature review

Rahman (2014) examined the financial performance of square pharmaceutical ltd. in Bangladesh. In order to analyze the financial performance, he has acquired secondary data of the firm from annual reports from 2006-2013. Researcher has analyzed the data using ratio, statistical tools. The ratio included current ratio, quick ratio, receivable turnover, inventory turnover ratio, total asset turnover ratio, financial leverage, gross profit margin, net profit margin, operating expense ratio, return on assets, return on equity. He found that receivable turnover, earning power and return on equity is satisfactory. He also found that liquidity position and inventory turnover is not satisfactory.

Majumder and Rahman (2011), made a study on financial analysis of selected pharmaceutical companies in Bangladesh. They have collected the both primary and secondary data. The sources of secondary data were annual reports of the selected pharmaceuticals companies for the period of 2005-06 to 2007-08. They had acquired primary data through discussion and interview with the executives. They used financial ratios, statistical tools and Altman Z score model to achieve the goal. The financial ratio includes current ratio, quick ratio, inventory turnover ratio, gross profit margin, net profit margin, return on investment, operating profit margin, return on capital employed, return on assets, current assets to fixed assets, net working capital to total assets, net fixed assets turnover, total assets turnover, debt-equity ratio, debt to total assets ratio. They found that the profit earning capacity, liquidity position, financial position and the performance of the most of the Pharmaceuticals are not in sound position.

Karim, Al-Mamun and Miah (2017) led a study on connection between working capital administration efficiency and corporate profitability: a study on square pharmaceuticals and beximco pharmaceuticals, in Bangladesh. Researcher has assembled secondary information of the firms for a time of 10 years from 2006 to 2015. They analyzed data by liquidity, solvency ratios, different profitability and correlation test. The investigation uncovers that there is a connection between working capital administration and profitability of both of the organizations. The financial performance of Beximco Pharmaceuticals Limited ought to be improved promptly through the effective administration of working capital to increase its profitability.

Bhunia (2014) made a study on financial analysis of selected Indian pharmaceutical companies. Researcher has collected the secondary data of two public sector pharmaceutical companies listed in Bombay stock exchange. The sources of secondary data were annual reports of the selected pharmaceuticals companies for the period of 1997-98 to 2008-09. Researcher acquired primary data through discussion and interview with the executives. He used liquidity, solvency, profitability and economic performance, numerous accounting ratios. The linear multiple regression analysis has been used to reach the goal. The financial ratio includes current ratio, quick ratio, inventory turnover ratio, gross profit margin, net profit margin, return on investment, operating profit margin, return on capital employed, return on assets, current assets to fixed assets, net working capital to total assets, net fixed assets turnover, total assets turnover, debt equity ratio, debt to total assets ratio. He found that the profit earning capacity, liquidity position, financial position and the performance of the Pharmaceuticals are in mixed position.

3. Methodology

In order to analyze the profitability performance of pharmaceutical industry in Bangladesh six listed companies in Dhaka stock exchange have been selected for the study purposively. The secondary data of these sample firms have been collected from their annual reports for a period of 18 years from 2000-01 to 2017-18. The collected data have been categorized, tabulated and analyzed by different profitability ratios and statistical tools like mean, standard deviation and coefficient of variation. The ratios include gross profit margin, operating profit margin, and net profit margin, return on equity and return on assets. The selected pharmaceutical companies are Ambee Pharmaceuticals Ltd(AMB), Beximco Pharmaceuticals ltd(BPL), Glaxo Smitkline Bangladesh ltd(GSK), The Ibn Sina Pharmaceutical Industry Ltd(IBN), Square Pharmaceuticals ltd and Renata ltd(RPL).

4. Data analysis and interpretations

4.1 Gross margin represents the percent of total sales revenue that the corporate retains after incurring the direct costs related to producing goods and services it sells. The higher the percentage, the more the company retains on each taka of sales, to service its other costs and debt obligations. Some authors believe that gross margin ratio ranging from 20% to 30% has been taken into consideration as the usual norm for any industrial organizations (Majumder & Rahman, 2011).

Table 1: Gross profit margin of pharmaceutical industry in Bangladesh from 2000-01 to 2017-18.

Year	AMB	SPL	BPL	GSK	IBN	RPL	Avg.
2000-01	41.43	36.03	39.24	28.44	18.51	41.23	34.15
2001-02	39.14	39.11	35.77	28.85	32.87	41.65	36.23
2002-03	48.76	36.06	37.92	27.81	33.01	58.95	40.42
2003-04	47.19	40.38	40.46	25.89	33.67	48.41	39.33
2004-05	46.79	40.75	46.84	22.59	35.40	48.45	40.14
2005-06	52.80	42.11	46.76	19.67	36.28	49.25	41.14
2006-07	42.99	43.09	45.30	21.56	36.09	48.74	39.63
2007-08	57.22	41.19	50.06	24.98	37.96	50.59	43.67
2008-09	55.07	42.24	47.29	31.23	38.53	53.33	44.62
2009-10	53.55	42.76	48.89	34.20	38.61	52.75	45.13
2010-11	54.20	42.81	47.99	28.48	38.72	52.46	44.11
2011-12	52.91	42.90	47.25	28.61	38.78	52.82	43.88
2012-13	52.38	43.07	46.12	32.67	39.41	50.71	44.06
2013-14	52.97	43.91	45.55	37.72	39.91	51.21	45.21
2014-15	52.31	45.18	46.28	39.33	40.03	50.81	45.66
2015-16	52.17	48.37	35.86	38.99	40.36	50.94	44.45
2016-17	52.53	48.68	59.54	38.78	40.50	50.51	48.42
2017-18	51.88	49.34	46.75	46.70	40.64	50.24	47.59
Mean	50.35	42.67	45.21	30.92	36.63	50.17	42.66
SD	4.95	3.70	5.72	7.20	5.20	3.99	3.76
CV	0.10	0.09	0.13	0.23	0.14	0.08	0.09

Sources: Compiled from annual reports of pharmaceutical companies from 2000-01 to 2017-18

The above table 1 shows the gross profit margin of six companies from 2000-01 to 2017-18 is 42.66 percentages. The table also exhibits average gross margin for *Ambee* (50.35) *Square* (42.67), *Beximco* (45.21)*, Glaxo*, (30.92), Ibn *Sina* (36.63) and *Renata* (50.17) percentages*.* The ratio of *Glaxo*, (30.92), Ibn *Sina* (36.63) which are below to the industry average. The table also states that a coefficient variation of return was lowest for 0.06 for *Square* and the highest 0.19 in case of *Glaxo*. The gross profit margin of *Ambee* (50.35) *Square* (42.67), *Beximco* (45.21)*,* and *Renata* (50.17) percentages are higher than of industry average reflects that more efficiency retaining more paisa of a taka sales. But the gross profit margin of *Glaxo*, (30.92), Ibn *Sina* (36.63) are lower than industry average which implies that firm retain less paisa of a taka of sales.

4.2 The operating margin of profit could be a ratio accustomed to measure a company's pricing strategy and operating efficiency. The operating margin of profit measures the share of every sale taka remaining in any case costs and expenses apart from interest, taxes, and preferred shares dividends are deducted. A high operating profit margin is preferred indicates efficiency as well. Operating profit ratio ranging 4% to 6% is considered norm for the purpose of comparison and control by some authors (Majumder & Rahman, 2011).

Table 2: Operating profit margin of pharmaceutical industry in Bangladesh from 2000-01 to 2017-18.

Year	AMB	SPL	BPL	GSK	IBN	RPL	Avg.
2000-01	2.30	23.34	25.81	8.67	6.27	38.67	17.51
2001-02	3.59	29.18	21.61	6.74	9.93	13.43	14.08
2002-03	5.59	20.39	19.69	7.28	9.77	16.50	13.20
2003-04	4.48	25.61	20.86	6.97	8.79	18.12	14.14
2004-05	3.15	29.79	21.77	5.32	8.17	19.70	14.65
2005-06	4.91	25.95	20.16	-0.71	4.45	20.98	12.62
2006-07	3.35	24.34	18.20	4.98	4.41	21.71	12.83
2007-08	3.44	20.70	24.91	11.26	5.01	23.74	14.84
2008-09	3.70	24.12	20.57	14.28	4.35	24.85	15.31
2009-10	3.95	20.77	25.20	14.75	4.89	25.78	15.89
2010-11	3.93	20.43	25.20	8.80	4.50	26.34	14.87
2011-12	3.57	20.69	23.77	6.38	4.36	28.17	14.49
2012-13	3.63	21.45	22.16	8.92	5.23	27.51	14.82
2013-14	8.53	23.95	21.58	14.78	6.45	26.21	16.92
2014-15	7.20	27.87	21.99	15.53	7.31	24.45	17.39
2015-16	7.03	30.66	22.25	12.52	8.00	25.59	17.68
2016-17	8.37	28.28	22.23	13.02	8.32	25.40	17.60
2017-18	5.59	32.23	22.91	24.57	8.71	25.57	19.93
Mean	4.79	24.99	22.27	10.23	6.61	24.04	15.49
SD	1.86	3.91	2.07	5.58	2.03	5.43	1.97
CV	0.39	0.16	0.09	0.55	0.31	0.23	0.13

Sources: Compiled from annual reports of pharmaceutical companies from 2000-01 to 2017-18

The above table 2 shows the operating profitability of selected companies of pharmaceutical industry in Bangladesh. The industry average of operating profit of six companies and for the study period of 2000-01 to 2017-18 is 15.49 percentages. From the table, it appears that average operating profit margins of the companies are *Ambee* (4.79), *Square* (24.99), *Beximco* (22.27), *Glaxo*, (10.23), Ibn *Sina* (6.61) and *Renata* (24.04) percentages. The operating margin of *Square* (24.99), *Beximco* (22.27), and *Renata* (24.04) percentages which are higher than industry average of 15.49 percentages reflects that more efficiency retaining more paisa of a taka of sales. But the operating profit margin of *Ambee* (4.79), Glaxo, (10.23), Ibn *Sina* (6.61) percentages which lower than industry average 15.49 percentages which implies that firm retain less paisa of a taka of sales.

4.3 The net profit margin measures the percentage of each sales dollar remaining after all costs and expenses, including interest, taxes have been deducted. The higher the firm's net profit margin is the better.

Table 3: Net profit margin of pharmaceutical industry in Bangladesh from 2000-01 to 2017-18

Year	AMB	SPL	BPL	GSK	IBN	RPL	Avg.
2000-01	0.85	19.12	16.73	4.92	4.02	8.17	8.97
2001-02	2.30	20.69	13.54	5.98	7.30	7.96	9.63
2002-03	3.48	18.81	9.49	6.68	6.93	23.26	11.44
2003-04	2.73	20.55	12.25	14.42	6.40	26.80	13.86
2004-05	2.10	23.55	14.71	3.64	6.13	11.97	10.35
2005-06	2.25	19.14	12.71	-1.19	3.56	12.56	8.17

2006-07	2.23	17.37	9.82	2.83	3.55	13.26	8.18
2007-08	2.64	16.73	13.60	6.62	4.11	14.02	9.62
2008-09	2.72	19.25	12.83	10.71	3.85	15.47	10.80
2009-10	2.74	18.84	16.20	11.29	3.74	16.73	11.59
2010-11	2.80	19.48	15.19	5.96	4.03	16.73	10.70
2011-12	2.80	18.05	14.20	4.39	3.33	16.26	9.84
2012-13	2.30	18.61	13.39	8.06	3.95	15.92	10.37
2013-14	2.19	19.85	13.65	11.50	4.75	15.49	11.24
2014-15	1.92	21.21	15.07	12.41	6.89	15.58	12.18
2015-16	1.60	34.22	14.71	10.26	5.81	15.62	13.70
2016-17	2.06	35.89	14.36	9.85	5.83	16.28	14.05
2017-18	2.37	29.27	14.72	3.05	9.71	17.18	12.72
Mean	2.34	21.70	13.73	7.30	5.22	15.51	10.97
SD	0.56	5.59	1.88	4.06	1.75	4.43	1.81
CV	0.24	0.26	0.14	0.56	0.34	0.29	0.17

Sources: Compiled from annual reports of pharmaceutical companies from 2000-01 to 2017-18

The above table 3 depicts the picture of net profit margin of selected pharmaceutical companies in Bangladesh. The industry average of net profit margin is 10.97 percentages, with minimum 8.17 and maximum 13.86 percentages and standard deviation of gross margin 1.81 percentages. Net profit margins are for *Ambee* (2.34), *Square* (21.70), *Beximco* (13.73), *Glaxo*, (7.30), Ibn *Sina* (5.22) and *Renata* (15.51) percentages. The net profit margins of *Ambee* (2.34), *Glaxo*, (7.30) and Ibn *Sina* (5.22) percentages which are below to industry average. The table also states that coefficient variation of return are lowest for *Beximco* (0.14) and the highest for *Glaxo* (0.56). The net profit margins of *Square* (21.70), *Beximco* (13.73), are higher than of industry average reflects that more efficiency retaining more paisa of a taka sales. But the net profit margin of *Ambee* (2.34), *Glaxo*, (7.30) and Ibn *Sina* (5.22) percentages are lower than industry average which implies those firms retain less paisa of a taka of sales.

4.4 The return on equity (ROE) measures the return earned on the common stockholders' investment in the firm. Generally, greater these returns, the better off are the owners. A rate of return ranging from 11% to 12% return on equity may be considered as reasonable for a selected enterprise (Majumder & Rahman, 2011).

Table 4: Return on equity of pharmaceutical industry in Bangladesh from 2000-01 to 2017-18.

Year	AMB	SPL	BPL	GSK	IBN	RPL	Avg.
2000-01	2.38	22.26	9.64	9.05	11.24	17.70	12.04
2001-02	8.46	23.20	7.69	11.57	22.36	16.25	14.92
2002-03	10.67	19.86	4.51	13.20	21.31	55.22	20.79
2003-04	9.71	20.97	6.09	21.92	19.62	62.25	23.43
2004-05	6.69	22.55	7.17	5.96	20.48	26.00	14.81
2005-06	10.97	20.94	5.92	-2.23	12.71	24.65	12.16
2006-07	16.03	17.77	4.28	5.64	16.61	34.32	15.78
2007-08	13.64	16.42	5.22	13.70	22.94	26.06	16.33
2008-09	12.01	19.00	5.74	27.82	22.86	27.34	19.13
2009-10	15.10	18.42	6.58	29.70	22.35	28.65	20.14
2010-11	15.11	18.99	7.00	19.83	21.54	27.55	18.34
2011-12	15.05	17.81	7.17	16.42	10.11	24.60	15.19
2012-13	14.75	17.73	7.10	29.51	12.37	22.14	17.27

2013-14	12.95	18.64	7.31	35.69	18.74	22.19	19.25
2014-15	11.25	19.83	8.69	31.92	26.14	21.33	19.86
2015-16	13.74	27.93	12.78	24.93	23.33	21.04	20.62
2016-17	11.98	25.16	8.88	25.45	21.16	20.94	18.93
2017-18	13.40	20.07	9.44	11.72	36.86	21.13	18.77
Mean	11.88	20.42	7.29	18.43	20.15	27.74	17.65
SD	3.45	2.91	2.07	10.58	6.26	12.09	3.07
CV	0.29	0.14	0.28	0.57	0.31	0.44	0.17

Sources: Compiled from annual reports of pharmaceutical companies from 2000-01 to 2017-18

The above table 4 shows the return on equity of selected companies of pharmaceutical industry in Bangladesh. The industry average of return on equity of pharmaceutical industry in Bangladesh is 17.65 percentages. From the table, it appears that average return on equity of *Ambee* (11.88), *Square* (20.42), *Beximco* (7.29), *Glaxo* (18.43) *Ibn Sina* (20.15) and *Renata (27.74)* percentages respectively. The coefficient variations return on equity is highest for *Glaxo (0.57)* and the lowest for *Square (0.14)*. The average return on equity of *Square* (20.42), *Glaxo* (18.43) *Ibn Sina* (20.15) and *Renata (27.74)* percentages which are higher than industry average and standard norms reflects efficiency in generating return for shareholders. But the return on equity of *Beximco* (7.29) percentages which lower than industry average and standard norms which implies that firm have less efficiency in generating returns for shareholders.

4.5 The return on total assets (ROA), measures the total effectiveness of management in generating profits with its available assets. The higher the firm's return on total assets, the better the firm's profitability. Some authors consider 10% to 12% rate of return on total assets as reasonable norm for a profitable firms and this might be considered as reasonable norm for the selected enterprises (Majumder & Rahman, 2011).

Table 5: Return on assets of Pharmaceutical Industry in Bangladesh from 2000-01 to 2017-18.

Year	AMB	SPL	BPL	GSK	IBN	RPL	Avg.
2000-01	1.00	16.29	6.83	6.61	7.50	9.85	8.01
2001-02	3.42	18.21	5.21	8.30	12.09	10.17	9.57
2002-03	3.89	14.71	2.80	8.65	10.00	29.93	11.67
2003-04	3.10	18.48	3.55	16.56	9.57	34.51	14.30
2004-05	1.87	23.73	5.02	4.49	11.89	15.11	10.35
2005-06	2.07	15.28	4.12	-1.64	6.55	13.63	6.67
2006-07	2.75	13.17	2.96	4.33	7.67	15.59	7.75
2007-08	2.24	11.92	4.07	10.28	9.52	13.70	8.62
2008-09	2.43	14.56	3.60	21.14	8.81	15.67	11.03
2009-10	2.56	15.18	5.10	21.07	9.77	16.65	11.72
2010-11	2.68	15.15	5.40	11.77	10.73	14.18	9.99
2011-12	2.80	14.17	5.54	8.61	7.67	12.79	8.60
2012-13	2.55	14.88	5.40	15.47	8.13	10.91	9.56
2013-14	1.99	16.61	5.42	18.32	11.11	11.87	10.88
2014-15	1.54	19.20	6.53	15.69	15.49	12.43	11.82
2015-16	1.92	28.20	9.51	11.77	12.12	13.23	12.79
2016-17	1.66	24.41	6.83	11.50	12.04	14.41	11.81
2017-18	1.85	21.69	6.71	2.77	19.68	15.36	11.34
Mean	2.35	17.55	5.25	10.87	10.57	15.56	10.36
SD	0.71	4.37	1.66	6.35	3.17	6.40	1.95
CV	0.30	0.25	0.32	0.58	0.30	0.41	0.19

Sources: Compiled from annual reports of pharmaceutical companies from 2000-01 to 2017-18

The above table 5 exhibits the return on total assets of selected pharmaceutical companies for the period of 18 years from 2000-01 to 2017-18. The industry average of return on total assets is 10.36 percent with maximum of 14.30 percent and minimum 6.67 percent and standard deviation of return on total assets 1.96 percent. The table also states that average return on total assets of *Ambee* (2.35), *Square* (17.55), *Beximco* (5.25), *Glaxo* (10.87) percent*, Ibn Sina* (10.57) and *Renata* (15.56) percentages. The return on total asset for the company *Square* (17.55)*, Glaxo* (10.87)*, Ibn Sina* (10.57) and *Renata* (15.56) percentages that are higher than of industry average and standard norms reflects that more efficiency in using assets to generate profit. But the return on total assets of *Ambee* (2.35) and *Beximco* (5.25) percentage which are lower than industry average and standard norms. It implies inefficiency in using assets to generate profit compared to the industry leader.

5. Findings of the study

By considering the gross profit margin of the firms*,* industry average and standard norms the overall profitability is satisfactory. The operating profit margins of *Ambee* (4.79), Glaxo, (10.23), Ibn *Sina* (6.61) percentages which lower than industry average 15.49 percentages which implies that firm retain less paisa of a taka of sales. The net profit margin of *Ambee* (2.34), *Glaxo*, (7.30) and Ib*n Sina* (5.22) percentages are less than industry average**.** The return on equity of *Beximco* (7.29) percentages which lower than industry average and standard norms which implies that firm have less efficiency in generating returns for shareholders**.** The return on total assets of *Ambee* (2.35) and *Beximco* (5.25) percentage which are lower than industry average and standard norms. It implies less inefficiency in using assets to generate profit compared to the industry leader.

6. Recommendations

The industry overall profitability is satisfactory. But the profitability of *Ambee, Glaxo, Ibn Sina and beximco* is not satisfactory in terms of operating profit, net profit, return on equity and return on assets. The result is due inefficiency of financial management, the pricing policy, credit policy, inventory planning, absence of realistic goals, strict government regulation and increased cost of raw-materials, labor and overhead. These firms should increase their profitability by formulating appropriate pricing, credit, inventory policy and proper cost management.

7. Conclusion

The present study to analyze the profitability performance of pharmaceutical industry in Bangladesh six listed companies in Dhaka stock exchange have been selected for the study purposively. In order to conduct the study data of these sample firms have been collected from their annual reports for a period of 18 years from 2000-01 to 2017-18. The collected data have been categorized, tabulated and analyzed by different profitability ratios and statistical tools like mean, standard deviation and coefficient of variation. The ratios include gross profit margin, operating profit margin, and net profit margin, return on equity and return on assets. The results of the study is compared across firms of industry, industry average and standard norms, the overall profitability of industry is satisfactory but *Ambee, Glaxo, Ibn Sina and beximco* have enough scope to improve their profitability by formulating appropriate pricing, credit, inventory policy and proper cost management.

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Exploring the Impact of User Personality and Self-Disclosure on the Continuous Use of Social Media

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Abstract
In the beginning, telecommunications started from telegraph and television, and then entered the Internet era, As the Internet evolves to Web 2.0, online communities are emerging where users can communicate with each other, start socializing online by interacting with others through video sharing sites, blogs, Facebook and more. Smartphones, PCs allow users to communicate via social media with anyone from anywhere in the world who is close to them, get more followers, shares, likes, interactions and love counts, users get the social aspect of needs and identity, Users with a large number of fans can engage in mutually beneficial behavior with manufacturers and social media platforms, For example, more Openness to Experience people create through applications such as retouching and video editing, or if a more extroverted person uses more interactive applications such as video recording or live streaming applications, To attract more people to join the platform for exchange. Social media is now used by nearly half of the world's population, and the number of users is growing, and most people have smartphones, Social media has become part of people's daily lives, common social media platforms are Facebook, Instagram, Twitter, Youtube, etc. The different personality traits of the users, observing the Persistence of Different Personality Traits in Social Media through Self-Disclosure, find social media to retain and attract more people to operate and use social platforms. 464 valid samples were collected for this study, Analysis using SmartPLS 3, Learn that Extraversion, Openness to Experience and Neuroticism are positively significant for Self-Disclosure, analyzing personality traits after Self-Disclosure, continued use is intended to have a positive and significant impact, Users Increase Continuity of Social Media Use from Self-Disclosure, give reference to future research directions.

Keywords: Social Media, Big Five Personality Traits, Self-Disclosure, Continuance Intention

1. Introduction

1.1 Introduce the Problem

The development of communication began with newspapers and then television, and then entered the Internet age for online social networking, and through anonymity and attracting users with the same values to form online communities, also known as social media (Bargh & McKenna, 2004). The Internet has become a social media that is part of people's daily lives, including news, interactions and information sharing (Hamburger & Vinitzky, 2010). At first the Internet was just about searching for information, now it's about socializing online and bringing together people who share a common interest far away (Hamburger & Artzi. 2000; McKenna & Bargh, 2000). Connects individuals with others and facilitates the development of social media (Obar et al., 2015). While social media encompasses identity, conversation, sharing, presence, interpersonal, reputation, and community, self-disclosure encompasses the disclosure of personal information in social media settings. (Kietzmann & Kristopher, 2011).

Nowadays, with the spread of information and smartphones, social media has become a platform for most people to exchange information. According to NCC's Q2 2019 mobile market statistics, there were 29.25 million mobile phone users at the end of the second quarter, and some users had more than an odd number of phones and numbers (NCC, 2019). 3.2 billion social media users worldwide - nearly 42% of the world's population - are using social media and the number of users is still growing (Emarsys, 2019). Take Facebook for example, as of September 2019, Facebook has more than 2.45 billion monthly active users worldwide Compared to 2.38 billion active users in the first quarter, the number of active users grew to 70 million, accounting for 2% of all active users, social media is very influential in today's society. (ZEPHORIA, 2019).

Most young people in the U.S. rate Instagram highly on many social media outlets, with good viewability, creativity, interaction with friends, updates on their personal lives, and the psychological need for popularity, attention, and recognition through more love and sharing! The social media company saw a business opportunity to create user-requested software, including retouching, animation settings, and video editing, as well as a communication channel between users and manufacturers. Instagram users take selfies, live-stream, and interact with friends of similar age. Instagram differs from Facebook in that Facebook is more family-focused, but study points out that Instagram users are less satisfied with their real lives (Sheldon & Bryant, 2016).

In the Big Five personality study, extraversion actively presents itself through social media, and neuroticism communicates more easily with others through social media. (Blackwell et al., 2017). Users with higher agreeableness will display their information more frequently. Highly conscientiousness people spend less time on social media for leisure, but more time participating in online academic activities (Moore & McElroy, 2012). Openness to experience users often post their ideas on social media, sharing information and discussions (Saef et al., 2018). In the area of self-disclosure, there is a significant relationship with other people (Solano & Dunnam, 1985). continuance intention positive and significant in terms of benefits to the user. Self-disclosure in social media also has social benefits in terms of attention (Huang, 2016). Exploring the relevance of variables through the Big Five personality traits, self-disclosureand and continuance intention and social media related literature, questionnaire collection and SmartPLS 3.

This study first examines the influence of the Big Five personality traits, self-disclosure, and continuance intention on social media. The second study examines the impact of self-disclosure on the Big Five personality traits, continuance intention, and the ability of social media platforms to increase traffic. In the midst of competition from many social media outlets, this study provides recommendations for future researchers and social media professionals to improve their social media presence.

2. Literature research

This chapter is divided into two sections to explore the relevant literature: the first section is about the Big Five personality traits and how they influence users' self-disclosure in social media; The second section explores whether self-disclosure is a continuance intention to influence social media among users and social media.

2.1 Social Media

Broadly speaking, social media refers to the act of socializing through the Internet and online. 3.2 billion social media users worldwide, or nearly half of the world's population (Emarsys 2019). Some users are unable to communicate further with others in reality. The anonymity of social media avoids the weaknesses of real-life communication, such as appearance and interpersonal factors, which cause the problem of social media addiction (Blackwell et al., 2017). In many social media platforms, there are usually interactive features such as "Like" and "Love" to encourage users to post, share, like and interact with each other more actively (Saef et al., 2018). Allow other users to re-examine themselves through anonymity, etc. The more interactive and relational a social media user is, the more he or she will gradually disclosure information about himself or herself, effectively increasing the user base's continuance intention the network (Huang 2016). Table 1 shows the research on social media:

Table 1: Social media-related studies

Authors	Research Topic
Blackwell et al. (2017)	Extraversion, Neuroticism, attachment style and fear of missing out as predictors of social media use and addiction.
Bibby (2008)	Dispositional factors in the use of social networking sites: Findings and implications for social computing research.
Saef et al. (2018)	Fostering socio-informational behaviors online: The interactive effect of Openness to Experience and Extraversion.
Huang (2016)	Examining the beneficial effects of individual's Self-Disclosure on the social network site.

2.2 Big Five personality traits

When investigating the role of personality traits in social media use, researchers tend to use the Big Five personality traits (Goldberg, 1990). Big Five personality traits are extraversion, agreeableness, openness to experience, neuroticism, conscientiousness. Although the theoretical and methodological underpinnings of the model are not entirely uncontroversial, it is thought to acknowledge at least some fundamental aspects of the Big Five personality traits (McCrae & Costa, 1999). Table 2 shows that the Big Five personality traits are related to social media.

2.2.1 Extraversion

Extraversion are good at interpersonal communication, showing empathy and self-confidence (Akee et al., 2018), and are more likely to use social media because they crave social interaction (Blackwell et al., 2017). Extraversion means adopting a positive attitude towards the real world, including being social, active, self-confident, and positive behaviors (Kerr et al., 2017). And, extraversion is associated with more self-revelation on social media (Bibby, 2008). This can be explained by the fact that: extraversion are likely to post photos of other people and are less likely to post a single photo of themselves to update their profile page. (Gosling et al., 2011; Moore & McElroy, 2012).

2.2.2 Agreeableness

Agreeableness tends to be cooperative and selfless, and excels at enhancing the intimacy of social behavior, including altruism, gentleness, trust and modesty (Akee et al., 2018; Kerr et al., 2017). Agreeableness is a personality trait, which is an understanding, usually with the personal behavioral characteristics of kindness, compassion, cooperation, enthusiasm and consideration (Thompson, 2008). More agreeableness users had negative feelings about social media misconduct, but more agreeableness people presented their messages more frequently than less agreeableness people (Moore & McElroy, 2012). Positively correlated with self-disclosure and not far removed from behavior in reality and in social media. Of the five personality traits, agreeableness is more positive in group performance to maintain relationships with others, control their anger and negative emotions when confronted with conflict, thereby reducing the conflict of negative interactions. (Graziano et al., 1996).

2.2.3 Openness to Experience

Openness to experience user with bold ideas and experiences, high curiosity and a love of adventure (Akee et al., 2018). Openness of experience describes breadth, depth, originality, and a preference for complexity of experiments (Kerr et al., 2017). Openness to experience: fantasy, aesthetics, emotions, values, rich imagination, aesthetic intuition, unforgettable feelings about certain things, and curiosity about different things (Costa & McCrae, 1992). Therefore, openness of experience in social media provides a platform for the exchange and sharing of knowledge, expressing the love of learning and experience. (Saef et al. 2018).

2.2.4 Neuroticism

Neuroticism is also known as emotional instability, such as anxiety, stress and grief (Akee et al., 201; Kerr et al., 2017). People with high neuroticism are actually more introverted and isolated in their behavior. (Butt & Phillips, 2008). It is easy to become angry in an anxious or critical situation because of feelings of offense (Mõttus et al., 2016). To be able to express oneself in social media by getting feedback of recognition and interest (Blackwell et al., 2017).

2.2.5 Conscientiousness

Conscientiousness has a tendency to be responsible and hard-working, to control one's social time, and to promote behaviors to accomplish personal tasks, tasks, goals, etc (Akee et al., 2018; Kerr et al., 2017). Although conscientiousness is positively correlated with mental health, theory and research confirm that extreme or excessive conscientiousness may lead to obsessive compulsive disorder, resulting in less positive correlation with mental health, and that higher conscientiousness is positively correlated with the negative effects of social media (Moore & McElroy, 2012). Table 2 shows the research on the Five Personality Traits and Social Media:

Table 2: Research on the Five Personality Traits and Social Media

Authors	Research Topic
Goldberg (1990)	An alternative "description of personality": the big-five factor structure.
McCrae & Costa (1999)	An introduction to the five-factor model and its applications.
Akee et al. (2018)	How does household income affect child personality traits and behaviors?.
Blackwell et al. (2017)	Extraversion, Neuroticism, attachment style and fear of missing out as predictors of social media use and addiction.
Kerr et al. (2017)	Personality traits of entrepreneurs: A review of recent literature (No. w24097).
Hamburger & Vinitzky (2010)	Social network use and personality.
Gosling et al. (2011)	Manifestations of personality in online social networks: Self-reported Facebook-related behaviors and observable profile information.
Moore McElroy (2012)	The influence of personality on Facebook usage, wall postings, and regret.
Thompson (2008)	Development and validation of an international English big-five mini-markers.
Graziano et al. (1996)	Perceiving interpersonal conflict and reacting to it: the case for Agreeableness.
Butt & Phillips (2008)	Personality and self reported mobile phone use.
Mõttus et al. (2016)	Personality traits below facets: The consensual validity, longitudinal stability, heritability, and utility of personality nuances.

2.3 Self-Disclosure

Privacy has an adverse effect on self-disclosure, which is defined as the disclosure of personal information to others (Dienlin & Metzger, 2016; Derlega & Chaikin, 1977). In social media, self-disclosure can reduce stress and build relationships. (Wang et al., 2016).

Self-disclosure is related to happiness, identity, and self-worth, and the role of self-disclosure in relationship building has been a major focus of research over the past 40 years (Pennebaker & Chung, 2007). According to the theory of social penetration, self-disclosure in the initial social interaction will be superficial and superficial; after deepening the relationship, self-disclosure will relatively increase in breadth and depth, while the opposite will happen when the relationship deteriorates (Altman & Taylor, 1973). Self-disclosure implies that the intimacy between community users decreases significantly as the size of the target group increases (Solano & Dunnam 1985). Table 3 shows the relationship between Self-Disclosure and social media:

Table 3: Self-Disclosure and Social Media Related Studies

Authors	Research Topic
Dienlin & Metzger 2016	An extended privacy calculus model for SNSs: Analyzing Self-Disclosure and self-withdrawal in a representative US sample.
Derlega & Chaikin (1977)	Privacy and self-disclosure in social relationships.
Wang et al. (2016)	What drives electronic word-of-mouth on social networking sites? Perspectives of social capital and self-determination.
Pennebaker & Chung 2007	Expressive writing, emotional upheavals, and health.
Altman & Taylor (1973)	Social penetration: The development of interpersonal relationships.
Solano & Dunnam (1985)	Two's company: Self-Disclosure and reciprocity in triads versus dyads.

2.4 Continuance Intention

Continuance intention means that trust in the thing is motivated by satisfaction with its continued use and behaviour means that trust in the thing is sustained by satisfaction of the motivation and behavior (Susanto et al., 2016). Where the matter is fraught with uncertainty and risk, it may reduce the continuance intention (Yuan et al., 2016). Continuance intention for innovations such as new social media mini-games, customized personal pages, managing groups and travel location, most people prefer practicality over entertainment features. (Hong et al., 2017). Self-disclosure is useful in social media and can increase the motivation to continuance intention (Huang, 2016). Table 4 shows a study of the Continuous Intention and social media:

Table 4: Continuous Intention and Social Media Related Studies

Authors	Research Topic
Susanto et al. (2016)	Determinants of Continuance Intention to use the smartphone banking services.
Yuan et al. (2016)	An investigation of users' Continuance Intention towards mobile banking in China.
Hong et al. (2017)	The effect of consumer innovativeness on perceived value and Continuance Intention to use smartwatch.
Huang (2016)	Examining the beneficial effects of individual's Self-Disclosure on the social network site.

3. Results

Integrating the literature in Chapter 2, this study proposes a thesis structure as shown in Figure 1. This study investigates the five personality traits of social media users and whether self-disclosure affects social media users' continuance intention social media.

This study uses Google online questionnaire for convenient, anonymous sampling. In order to increase the sample recovery rate, we will prepare 10 16GB flash drives for the lucky draw, and delete the questionnaires with incomplete answers. Using SmartPls3, the software analyzes 434 samples for the partial least square method PLS (Partial Least Square), including path analysis, confidence analysis, and validity analysis, to obtain the analysis results..

3.1 Research Assumptions

Extroverts are social, talkative and pleasant, and tend to use social media as a communication and socialization tool. (Seidman, 2013). This is reflected in their more frequent use of social media and their preference for social media that allows the community to contribute positively to functions such as updating their personal information (Gosling et al., 2011; Ryan & Xenos, 2011). Hence the hypothesis H1 :

H1: "Extraversion" of social media users positively and significantly affects "Self-Disclosure".

Highly agreeableness people tend to be cooperative, helpful, and successful in relationships. Agreeableness to communicate and connect with others on social media and to seek attention with postings (Seidman, 2013), More active use of social media. Hence the hypothesis H2:

H2: "Agreeableness" of social media users positively and significantly affects "Self-Disclosure".

Conscientiousness describes people who are organized, responsible, and hard-working. People who are more Conscientiousness use social media, less frequently and are less likely to post on social media to seek attention and acceptance. (Gosling et al., 2011; Seidman, 2013). Hence the hypothesis H3:

H3: "Conscientiousness" of social media users negative and significantly affects "Self-Disclosure".

Highly openness of experience people tend to be creative, intellectual and curious. Openness of experience with the frequency of social media use, and uses social media to find and disseminate information rather than for social networking (Correa et al., 2010; Hughes et al., 2012). Hence the hypothesis H4:

H4: "Openness of Experience" of social media users positively and significantly affects "Self-Disclosure".
Neuroticism individuals use social media to seek attention and social support that they may lack in real life, using social media for social purposes (Ross et al., 2009; Hughes et al., 2012). Therefore, neuroticism is positively correlated with the frequency of social media use (Correa et al., 2010). Hence the hypothesis H5:

H5: "Neuroticism" of social media users positively and significantly affects "Self-Disclosure".

Self-disclosure plays an important role in establishing and maintaining intimate relationships. At the beginning of a relationship, people usually only talk about what they see in their lives, but as the relationship develops, the breadth and depth of self-disclosure grows. On the contrary, when the relationship deteriorates, the self-disclosure relationship with others becomes shallow and narrow. Self-disclosure implies an intimate relationship between two people, but decreases as the group size increases (Solano & Dunnam, 1985). Hence the hypothesis H6:

H6: "Self-Disclosure" of social media users positively and significantly affects "Continuance Intention".

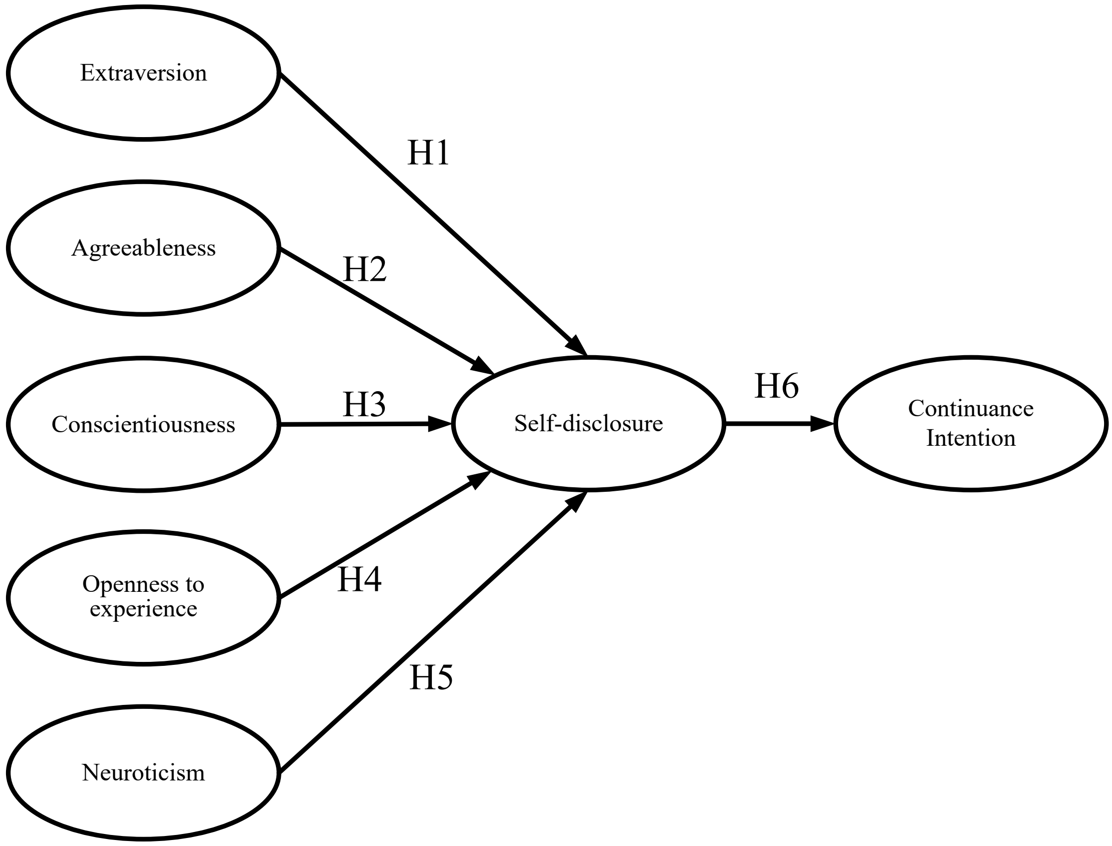

Figure 1: Theoretical Framework

3.2 Operational definitions

This section described seven constructs in this study and showed their operational definitions (as shown in Table 5).

Table 5: Operational definitions

Measurements	Variable operation definition	Reference source
Extraversion	A personality trait that refers to an individual's comfort level in relating to others.	Saucier (1994), Soto & John (2017), McCrae & John (1992)
Agreeableness	A personality trait that refers to the degree to which an individual follows the norms set by others.	Saucier (1994) ,Soto & John (2017),McCrae & John (1992)
Conscientiousness	It is the personality trait of an individual's degree of concentration and focus in pursuit of a goal.	Saucier (199 4),Soto & John (20 17),McCrae & John (1992)
Neuroticism	A personality trait that refers to the degree of positive emotional stimulation required by an individual.	Saucier (19 94),Soto & John (2 017),McCrae & John (1992)
Openness to Experience	A personality trait that refers to the degree to which an individual is tolerant of new things and actively pursues them.	Saucier (1994),Soto & John (2017),McCrae & John (1992)

Measurements	Variable operation definition	Reference source
Self-Disclosure	Social media users use social media to expose information about themselves.	Kwak et al. (2014)
Continuance Intention	Users will continue to use social media intent in the future.	Bhattacherjee (2001)

3.3 Questionnaire Design

According to the purpose of the study, thesis structure, and operational definitions, this study's questionnaire was designed with reference to relevant literature and questionnaire content. During the design process of the questionnaires and items, we had many discussions with the professor and made many revisions. Table 6 presents the Questionnaire Design:

Table 6: Questionnaire Design

Structure	Title	Measurements	References and Sources
Extraversion	EXTR1	Bold.	Saucier (1994), Soto & John (2017), McCrae & John (1992)
	EXTR2	lively	
	EXTR3	chatty	
	EXTR4	Socially inclined	
	EXTR5	shy	
	EXTR6	Quietly.	
	EXTR7	introverted	
	EXTR8	lonely	
Agreeableness	AGR1	humane	Saucier (1994), Soto & John (2017), McCrae & John (1992)
	AGR2	Gentle	
	AGR3	Happy to cooperate	
	AGR4	sympathetic	
	AGR5	calm	
	AGR6	crude	
	AGR7	nonsensical	
	AGR8	aloof	
Conscientiousness	CONS1	Actual	Saucier (1994), Soto & John (2017), McCrae & John (1992)
	CONS2	systematic	
	CONS3	effective	
	CONS4	Organized	
	CONS5	careless	
	CONS6	disordered	
	CONS7	sloppy	
	CONS8	not efficient	
Openness to Experience	OTE1	Smart.	Saucier (1994), Soto & John (2017), McCrae & John (1992)
	OTE2	complicated	
	OTE3	deep	
	OTE4	philosophical	
	OTE5	imaginative	
	OTE6	Creative	
	OTE7	Not smart	
	OTE8	Lack of Creativity	
Neuroticism	NEUR1	suspect	Saucier (1994),

Structure	Title	Measurements	References and Sources
	NEUR2	irritable	Soto & John (2017), McCrae & John (1992)
	NEUR3	jealous	
	NEUR4	Fretful.	
	NEUR5	sloppy	
	NEUR6	prone	
	NEUR7	unfettered	
	NEUR8	Not jealous of others'	
Self-Disclosure	SD1	I have a full profile on social media	Kwak et al. (2014)
	SD2	I will take the time to keep updating my profile	
	SD3	By updating my social media, I let my family and friends know what I'm up to every day	
	SD4	When I have something to say, I share it through social media	
Continuance Intention	CI1	I will continue to use social media in the future	Bhattacherjee (2001)
	CI2	I would recommend social media to my friends	
	CI3	I use social media when I need to	

Extraversion is based on Saucier's (1994) literature and is modified as a positive factor question for this study's exclusive extraversion based on the personality traits of social media users. This construct uses a Likert Scale 7-foot scale with a score of 7 to 1, with questions containing strongly agree, agree, slightly agree, have no opinion, slightly disagree, disagree and strongly disagree

Agreeableness is based on Saucier's (1994) literature and is modified to the affinity positive factor question based on the personality traits of social media users in this study. This construct uses a Likert Scale 7-foot scale with a score of 7 to 1, with questions containing strongly agree, agree, slightly agree, have no opinion, slightly disagree, disagree and strongly disagree

Conscientiousness is based on Saucier's (1994) and other relevant literature, and is modified as a negative factor question for this study to address the personality characteristics of the social media users. This construct uses a Likert Scale 7-foot scale with a score of 7 to 1, with questions containing strongly agree, agree, slightly agree, have no opinion, slightly disagree, disagree and strongly disagree

Openness to Experience is based on Saucier's (1994) and other relevant literature, and is modified to the positive factors of empirical openness for the personality characteristics of the social media users in this study. This construct uses a Likert Scale 7-foot scale with a score of 7 to 1, with questions containing strongly agree, agree, slightly agree, have no opinion, slightly disagree, disagree and strongly disagree.
Neuroticism Based on Saucier (1994) and other relevant literature, the positive factors of neuroticism were modified to be questions specific to the personality traits of the social media users in this study. This construct uses a Likert Scale 7-foot scale with a score of 7 to 1, with questions containing strongly agree, agree, slightly agree, have no opinion, slightly disagree, disagree and strongly disagree. As shown in Table 6 for extraversion.
Self-disclosure is based on literature such as Kwak et al. (2014), and the self-disclosure level of social media users in this study was revised to a self-disclosure question for this study. This construct uses a Likert Scale 7-foot scale

with a score of 7 to 1, with questions containing strongly agree, agree, slightly agree, have no opinion, slightly disagree, disagree and strongly disagree.

Continuance intention is based on Bhattacherjee (2001) and other relevant literature, and has been revised to include questions specific to the continuance intention of social media users in this study. This construct uses a Likert Scale 7-foot scale with a score of 7 to 1, with questions containing strongly agree, agree, slightly agree, have no opinion, slightly disagree, disagree and strongly disagree.

4. Data Analysis Results

In this chapter, we will analyze the sample data collected and the total number of data collected is 464, mainly using SmartPLS 3 as the analysis tool. There are two stages in the analysis process: 1. Outer Model Analysis, which mainly examines whether the internal consistency, content validity, convergent validity, and discriminant validity of the data meet the criteria; 2. Inner Model Analysis, which mainly examines whether the hypothesis of the path proposed by the research model is valid or not.

4.1 Partial Least Squares Structural Equation Modeling (PLS-SEM)

Partial least squares structural equation modeling (PLS-SEM) is a method of Structural Equation Modeling (SEM), which is based on regression analysis and is particularly suitable for predictive modeling, measurement of potential variables, and unassigned regression analysis of small samples. It is not affected by the traditional multivariate common linearity problem and has good reflectivity and formability. It can also explain the variation and verify the causality of the inference through the evaluation of the path coefficient and the explanatory power (R square) model. In Management Information Systems Quarterly and Information Systems Research, this structural equation model is gaining more and more attention, and its number of publications is showing a significant growth trend (Hsiao, 2018).

4.2 OUTER MODEL ANALYSIS

According to Hair et al. (2010), standardized factor loading must be at least 0.5 to be acceptable. Therefore, the deleted questions are OTE7, OTE8, EXTR5, EXTR6, EXTR7, EXTR8, AGR5, AGR6, AGR7, AGR8, CON1, CON5, CON6, CON7, CON8, NEUR7, NEUR8, and the factor loadings of the indicator variables in each of the constructs of this study are higher than 0.5 (as shown in Table 7).

Table 7: Matrix of factor load correlation coefficients.

	AGR	CI	CON	EXTR	NEUR	OTE	SD
AGR1	0.921						
AGR2	0.863						
AGR3	0.656						
AGR4	0.838						
CI1		0.906					
CI2		0.882					
CI3		0.865					
CONS2			0.850				
CONS3			0.898				
CONS4			0.926				
EXTR1				0.790			
EXTR2				0.845			
EXTR3				0.849			

EXTR4	0.866			
NEUR1		0.700		
NEUR2		0.739		
NEUR3		0.814		
NEUR4		0.825		
NEUR5		0.688		
NEUR6		0.834		
OTE1			0.716	
OTE2			0.585	
OTE3			0.587	
OTE4			0.786	
OTE5			0.716	
OTE6			0.736	
SD1				0.791
SD2				0.816
SD3				0.846
SD4				0.797

Note: EXTR=Extraversion, AGR=Agreeableness, CON=Conscientiousness, OTE=Openness to Experience, NEUR=Neuroticism, SD=Self-Disclosure, CI=Continuance Intention

4.2.1 Composite Reliability

Composite Reliability was proposed by Werts et al. (1974). Assume that both indexes are values between 0 and 1, with higher values indicating better reliability of the construct, and that any index has an acceptable range of 0.7 or higher (as shown in Table 8).

Table 8: Composite Reliability

	EXTR	**AGR**	**CON**	**OTE**	**NEUR**	**SD**	**CI**
Composite Reliability	0.904	0.894	0.921	0.845	0.896	0.886	0.915

Note: EXTR=Extraversion,AGR=Agreeableness,CON=Conscientiousness,OTE=Openness to Experience,NEUR=Neuroticism,SD=Self-Disclosure),CI=Continuance Intention

4.1.2 Convergent validity

The method emphasizes the importance of using both discriminant and convergent verification techniques when evaluating new tests. In other words, in order to establish structural validity, we must demonstrate both convergent and discriminant validity.

AVE (Average Variance Extracted) is a calculation of the explanatory power of the variation of the potential variables for each measured item (as shown in Table 9). The higher the AVE, the higher the confidence and convergent validity of the potential variables. If the AVE of each component is above 0.5, the factor loadings must be above 0.7, and the OTE is only 0.478 (Fornell & Larcker, 1981; Hair et al., 2010).

Table 9: average variance extracted

	EXTR	**AGR**	**CON**	**OTE**	**NEUR**	**SD**	**CI**
AVE	0.702	0.682	0.796	0.478	0.591	0.660	0.782

Note: EXTR=Extraversion,AGR=Agreeableness,CON=Conscientiousnes),OTE=Openness to Experience,NEUR=Neuroticism,SD= Self-Disclosure,CI=Continuance Intention

According to the criterion of discriminant validity, the square root of the AVE of each component must be greater than the correlation coefficient of the pairwise variables, and Table 10 shows that this study has the criterion of discriminant validity test (Fornell & Larcker, 1981).

4.2.3 Discriminant validity

Discriminant validity examines the degree of difference between the OUTER MODEL ANALYSIS components, the larger the difference, the lower the correlation between the components (as shown in Table 10), the standard factor load is higher than the cross-load, which represents the discriminant validity.

Table 10: Loadings and Cross-Loads by Standard Factor

	AGR	CI	CON	EXTR	NEUR	OTE	SD
AGR1	**0.921**	0.244	0.338	0.254	0.083	0.241	0.152
AGR2	**0.863**	0.254	0.320	0.214	0.097	0.207	0.120
AGR3	**0.656**	0.196	0.332	0.320	-0.060	0.088	0.027
AGR4	**0.838**	0.248	0.379	0.356	0.081	0.246	0.123
CI1	0.317	**0.906**	0.171	0.302	0.092	0.172	0.350
CI2	0.177	**0.882**	0.179	0.302	0.112	0.121	0.430
CI3	0.283	**0.865**	0.127	0.223	0.107	0.134	0.273
CONS2	0.329	0.121	**0.850**	0.355	-0.096	0.477	0.149
CONS3	0.345	0.197	**0.898**	0.424	-0.064	0.403	0.182
CONS4	0.388	0.168	**0.926**	0.511	-0.051	0.521	0.202
EXTR1	0.133	0.209	0.393	**0.790**	-0.021	0.403	0.280
EXTR2	0.313	0.272	0.493	**0.845**	-0.044	0.407	0.310
EXTR3	0.339	0.250	0.421	**0.849**	0.012	0.405	0.311
EXTR4	0.276	0.320	0.349	**0.866**	0.009	0.337	0.377
NEUR1	0.025	0.033	-0.097	-0.043	**0.700**	0.189	0.117
NEUR2	-0.002	0.054	-0.074	0.016	**0.739**	0.103	0.082
NEUR3	0.002	0.090	-0.066	0.002	**0.814**	0.179	0.195
NEUR4	-0.041	0.088	-0.115	-0.068	**0.825**	0.098	0.142
NEUR5	0.270	0.139	0.027	0.013	**0.688**	0.178	0.168
NEUR6	0.096	0.104	-0.058	0.010	**0.834**	0.166	0.243
OTE1	0.317	0.173	0.546	0.461	-0.060	**0.716**	0.244
OTE2	0.009	0.099	0.143	0.144	0.469	**0.585**	0.204
OTE3	0.047	0.053	0.205	0.079	0.288	**0.587**	0.175
OTE4	0.209	0.077	0.442	0.307	0.053	**0.786**	0.251
OTE5	0.255	0.163	0.329	0.412	0.138	**0.716**	0.183
OTE6	0.195	0.093	0.431	0.449	0.041	**0.736**	0.210
SD1	0.159	0.301	0.177	0.324	0.174	0.257	**0.791**
SD2	0.104	0.230	0.192	0.281	0.173	0.291	**0.816**
SD3	0.121	0.336	0.158	0.368	0.141	0.222	**0.846**
SD4	0.094	0.433	0.137	0.277	0.236	0.244	**0.797**

Note: EXTR=Extraversion, AGR=Agreeableness, CON=Conscientiousness, OTE=Openness to Experience, NEUR=Neuroticism, SD=Self-Disclosure, CI=Continuance Intention

The second test of discriminant validity (as shown in Table 11) is that the square root of the AVE value of each component must be greater than the correlation coefficient of the pairwise variables to qualify for the discriminant validity test (Fornell & Larcker, 1981).

Table 11: Correlation coefficients and square roots of AVE for each component.

	AGR	CI	CON	EXTR	NEUR	OTE	SD
AGR	**0.826**						
CI	0.284	**0.884**					
CON	0.399	0.184	**0.892**				
EXTR	0.320	0.318	0.489	**0.838**			
NEUR	0.090	0.118	-0.076	-0.011	**0.769**		
OTE	0.258	0.159	0.523	0.458	0.203	**0.692**	
SD	0.147	0.410	0.202	0.385	0.225	0.310	**0.813**

Note: EXTR=Extraversion, AGR=Agreeableness, CON=Conscientiousness, OTE=Openness to Experience, NEUR= Neuroticism, SD= Self-Disclosure, CI=Continuance Intention

4.2.4 Coefficient of determination R square

If R square is 0, it means there is no linear relationship. Generally speaking, if R square is greater than 0.5, it has good explanatory power. Self-disclosure R square is 0.211, continuous intention R square is 0.168. Adjusted self-disclosure R square is 0.171, continuous intention R square is 0.226.

4.2.5 Blindfloding

This analysis evaluates the quality of the model using other potential variables to predict observed variables, re-estimating the path model of PLS after each elimination group, and calculating Stone-Geisser's Q square as a criterion for predicting correlation (Stone 1974; Geisser 1974; Hair et al. 2017). Q square greater than 0 means that the PLS path model has a predictive correlation with this structure, and the closer it is to 1, the closer it is to a complete reset. The Q square value for the assessment measurement model is 0.487 for agreeableness, 0.564 for conscientiousness, 0.497 for extraversion, and 0.497 for neuroticism. 0.427, openness to experience Q square value of 0.273, self-disclosure Q square value of 0.429, continuance intention Q square value of 0.533. And evaluate the structural model on self-disclosure with a Q square value of 0.131 and continuance intention with a Q square value of 0.120 (As shown in Table 12).

Table 12: Predicted Phase Criteria Q^2-value

	Q^2 Redundancy	Q^2 Communality
EXTR		0.497
AGR		0.487
CON		0.564
OTE		0.273
NEUR		0.427
SD	0.131	0.429
CI	0.120	0.533

Note: EXTR=Extraversion, AGR=Agreeableness, CON=Conscientiousness, OTE=Openness to Experience, NEUR=Neuroticism, SD=Self-Disclosure, CI=Continuance Intention

4.3 INNER MODEL ANALYSIS

It is used to examine the model path coefficients and verify the influence of the path coefficients between components through SmartPLS (INNER MODEL ANALYSIS), also known as Structural Equation Model (SEM).

4.3.1 Path Coefficient and Intermediary Analysis

From Table 15, The coefficient of extraversion path is 0.340 with a T-value of 3.180, which is significant, the coefficient of agreeableness path is -0.008 with a T-value of 0.021, which is non-significant, and the coefficient of conscientiousness path is -0.008 with a T-value of 0.021, which is non-significant. The path coefficient of openness of experience was 0.118 and the T-value was 2.080, which was significant. Significance, with a self-disclosure path coefficient of 0.410 and a T-value of 4.663 (as shown in Figure 2and Table 13).

Table 13: PLS Analysis Results

Research Hypotheses	Path Coefficient	T-value	Results
H1: Positive and significant impact of "Extraversion" by social media users "Self-Disclosure".	0.340**	3.180	Yes
H2: Positive and significant impact of "Agreeableness" by social media users "Self-Disclosure".	-0.008	0.021	No
H3: Negative and significant impact of "Conscientiousness" by social media users "Self-Disclosure".	-0.008	0.013	No
H4: Positive and significant impact of "Openness to Experience" by social media users "Self-Disclosure".	0.118*	2.080	Yes
H5: Positive and significant impact of "Neuroticism" by social media users "Self-Disclosure".	0.205*	2.282	Yes
H6: Positive and significant impact of "Self-Disclosure" by social media users "Continuance Intention".	0.410***	4.663	Yes

Note: * P-value<0.050, **P-value<0.010, *** P-value<0.001

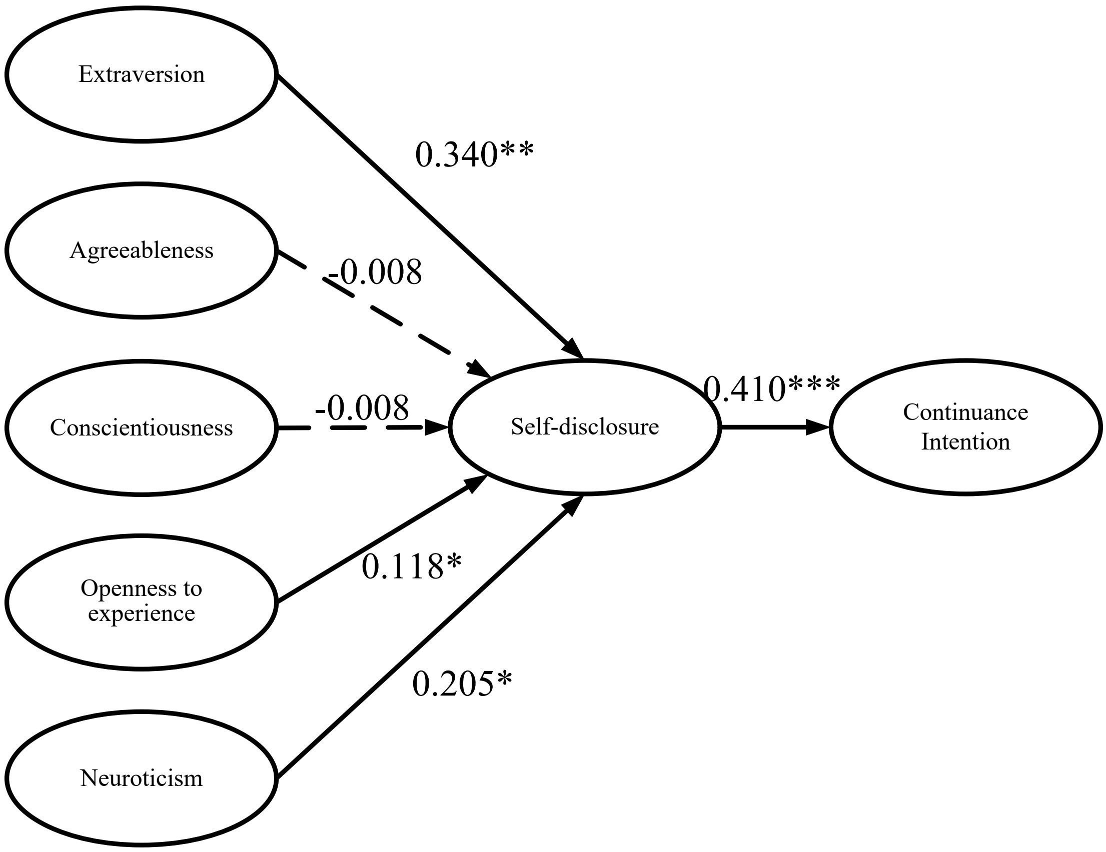

Figure 2: Research Model

Mediation occurs when the third intermediate variable is inserted between the other two related components. More precisely, a change in OUTER MODEL ANALYSIS leads to a change in the mediating variables, which in turn leads to a change in INNER MODEL ANALYSIS in the PLS path model. Therefore, the mediating variables control the nature of the relationship between the two structures (as shown in Table 14).

Table 14: Analysis of Intermediary Effectiveness

Structure Relationship	Measurements	Path Coefficient (T-value)	Sobel Test	Aroian Test	Goodman Test
EXTR→SD→CI	EXTR→SD	3.180	2.589**	2.547*	2.634**
	SD→CI	4.663			
AGR→SD→CI	AGR→SD	0.021	0.020	0.020	0.021
	SD→CI	4.663			
CON→SD→CI	CON→SD	0.013	0.012	0.012	0.013
	SD→CI	4.663			
OTE→SD→CI	OTE→SD	2.080	1.899	1.864	1.937
	SD→CI	4.663			
NEUR→SD→CI	NEUR→SD	2.282	2.031*	1.992*	2.073*
	SD→CI	4.663			

Note: EXTR=Extraversion, AGR=Agreeableness, CON=Conscientiousness, OTE=經驗 Openness to Experience, NEUR=Neuroticism, SD=Self-Disclosure, CI= Continuance Intention
significant: ***P-value<0.001**P-value<0.010*P-value<0.050

4.3.2 Heterogeneity

Finite Mixture Partial Least Squares (FIMIX-PLS) Segmentation is a method for finding unobserved heterogeneity in internal models. FIMIX captures heterogeneity by estimating the probability of segment membership for each observation, and also estimates the path coefficients for all segments. To select the segment size by multiple indicators, usually AIC, AIC3, AIC4, BIC, CAIC, and EN values are observed, where AIC, AIC3, AIC4, BIC, and CAIC observe the smallest value. The value of EN is between 0 and 1, and the higher the value, the better the quality, at least greater than 0.5. Therefore, it is important to determine the segment size according to multiple indicators. (As shown in Table 15).

Table 15: FIMIX-PLS

	K=2	K=3	K=4	K=5	Minimum and EN Quality
AIC	2441.411	2449.386	2435.132	**2418.049**	2418.049
AIC3	**2458.411**	2475.386	2470.132	2462.049	2458.411
AIC4	**2475.411**	2501.386	2505.132	2506.049	2475.411
BIC	**2511.789**	2557.023	2580.028	2600.204	2511.789
CAIC	**2528.789**	2583.023	2615.028	2644.204	2528.789
HQ	**2469.114**	2491.756	2492.168	2489.752	2469.114
MDL5	**2929.301**	3195.571	3439.612	3680.824	2929.301
LnL	-1203.706	-1198.690	-1182.570	-1165.020	-1165.020
EN	**0.739**	0.452	0.533	0.556	0.739
NFI	0.774	0.435	0.463	0.451	0.435
NEC	121	254.383	216.622	205.931	121

AIC=Akaike's Information Criterion; AIC3=Modified AIC with Factor 3; AIC4=Modified AIC with Factor 4; BIC=Bayesian Information Criteria; CAIC=Consistent AIC; MDL5=Minimum Description Length with Factor 5; LnL=LogLikelihood; EN=Entropy Statistic(Normed)

The following is the segmentation, Select K=2 based on multiple indicators. Therefore, the split is 0.90 and 0.10 (as shown in Table 16), and the path coefficients for different segments (as shown in Table 17), and the R square values for different segments (as shown in Table 18).

Table 16: Segment Size

K=1	K= 2	K= 3	K= 4	K= 5	MAX(%)
0.900	0.100				100%
0.655	0.237	0.108			100%
0.608	0.234	0.118	0.040		100%
0.539	0.270	0.116	0.061	0.014	100%

Table 17: Coefficients de cheminement des segments FIMIX

	FIMIX-PLS		
	K=1	K=2	Diff
EXTR→SD	0.365	-0.084	0.340
AGR→SD	0.051	-0.909	-0.008
CON→SD	-0.014	0.195	-0.008
OTE→SD	0.143	0.045	0.118
NEUR→SD	0.219	0.020	0.205
SD→CI	0.497	-0.778	0.410

significant: *** P-value < 0.005 ** P-value < 0.010 * P-value < 0.050
EXTR=Extraversion, AGR=Agreeableness, CON=Conscientiousness, OTE=Openness to Experience, NEUR=Neuroticism, SD=Self-Disclosure, CI=Continuance Intention

Table 18: FIMIX R2

	K=1	K=2	diff
CI	0.247	0.605	0.168
SD	0.269	0.731	0.211

Observing prominence within heterogeneity, we can see that self-disclosure is very significant in FIMIX (as shown Table 21). Next, let's look at the R square interpretation power of FIMIX, the interpretation power of each segment is improved (as shown Table 19).

Table 19: FIMIX Significance

Variables	K=1		K=2		diff	
	Path Coefficient	T-value	Path Coefficient	T-value	Path Coefficient	T-value
EXTR→SD	0.357***	7.476	-0.335	1.898	0.340**	3.180
AGR→SD	0.038	0.902	-0.980***	10.119	-0.008	0.021
CON→SD	-0.005	0.100	0.235*	1.973	-0.008	0.013
OTE→SD	0.145**	2.594	0.017	0.523	0.118	0.931
NEUR→SD	0.225	0.563	0.070	0.588	0.205*	2.282
SD→CI	0.485***	14.967	-0.901***	17.178	0.410***	4.663

Note: * P-value<0.050, **P-value<0.010, *** P-value<0.001
EXTR=Extraversion, AGR=Agreeableness, CON=Conscientiousness, OTE=Openness to Experience, NEUR=Neuroticism, SD=Self-Disclosure, CI=Continuance Intention

5. Conclusion and Recommendations

5.1 Conclusion

This study found that through the Big Five personality traits, self-disclosure, and continuous intention of social media, the results were: The path coefficient for extraversion is 0.340, t-value 3.180, the path coefficient for openness of experience is 0.118, t-value 2.080, the path coefficient for neuroticism is 0.205, t-value 2.282, and the path coefficient for exclusion is 0.205, t-value 2.282. There was no significant effect on agreeableness and conscientiousness, The rest showed positive and significant effects. From the results of continuance intention, the path coefficient of self-disclosure on continuance intention is 0.410 with a t-value of 4.663. There is a positive and significant effect of self-disclosure on continuance intention. In terms of R-square explanatory power, self-disclosure was 0.211, adjusted to 0.226, and continuance intention was 0.168, adjusted to 0.171. By FIMIX-PLS heterogeneity analysis, self-disclosure K=1 was 0.269; K=2 was 0.731, and continuance intention K=1 was 0.247; K=2 was 0.605. In terms of the relevance criterion Q square, in the assessment measurement model, extraversion is 0.497, agreeableness is 0.487, conscientiousness is 0.564, openness to experience is 0.273, neuroticism is 0.427, and self-disclosure is 0.427. 0.429, continuance intention is 0.533. In the appraisal structure model, self-disclosure is 0.131, continuance intention is 0.120. Of the top five personality traits that are salient to social media, self-disclosure reinforces continued intention to use social media.

5.2 Academic Implications

This study constructs a schema framework to understand the influence of different personality traits on social media, mediates the self-disclosure variable, and analyzes users' continuance intention to use social media. Hypotheses H1 to H5 confirm that extraversion, openness to experience, and neuroticism are more influenced by social media and self-disclosure. Extraversion is significantly more about self-expression than other personality traits (Akee et al., 2018; Blackwell et al., 2017; Kerr et al., 2017; Bibby, 2008), experience openness of experience is more about sharing personal experiences than other personality traits (Akee et al., 2018; Saef et al., 2018), neuroticism is influenced by the different characteristics of social media and reality to increase expression, attention and communication (Butt & Phillips 2008; Blackwell et al., 2017). Agreeableness and conscientiousness were less influenced by social media, while affinity was found to prefer cooperation (Akee et al., 2018; Kerr et al., 2017; Thompson, 2008; Moore & McElroy, 2012), but was negatively affected by inappropriate content commonly found in social media, For example, breaking trust, cooperation and interaction within the community (Moore & McElroy, 2012), Conscientiousness users take maximum responsibility and effort in their life goals, controlling their leisure and social time, and the more conscientious they are, the less likely they are to be active on leisure-oriented social media. (Akee et al., 2018; Kerr et al., 2017; Moore & McElroy, 2012). Hypothesis H6 confirms that self-disclosure is also influenced by social media and continuance intention, and that self-disclosure can increase mutual trust and motivation to continuance intention (Susanto et al., 2016; Yuan et al., 2016; Huang, 2016; Derlega & Chaikin, 1977; Wang et al., 2016; Pennebaker & Chung, 2007). The findings of this study suggest that self-disclosure plays an important role in extraversion, neuroticism, and openness of experience as variables that are effective in increasing persistent intention to use social media.

5.3 Practical Implications

Hypothesis H1: Social media user’s "Extraversion" to social media positively and significantly affects "Self-Disclosure":
Of the top five personality traits of social media, extroverted users actively present themselves on social media. Gain more followers and fans through the process of self-revelation to increase continuance intention and interaction with other users of social media. Make social media more accessible to extroverted users through applications such as location-based and more convenient snapshots and live streaming.

Hypothesis H2: Social media user’s "Agreeableness" to social media not affected "Self-Disclosure":
This study shows that agreeableness has no effect on self-disclosure, and among the five personality traits of social media, agreeableness tends to be altruistic, mutual and cooperative. The negative impact of inappropriate postings

on other users, such as abuses, fake messages, and disruptions to the community, requires better regulation of inappropriate content in social media.

Hypothesis H3: Social media user's "Conscientiousness" to social media not affected "Self-Disclosure":
This study shows that conscientiousness has no effect on self-disclosure, and that among the top five personality traits of social media, conscientiousness users tend to seek more efficient tasks, work, and control over online social leisure time. Negative impact on less rigorous information and news, but more active in more rigorous information, academic private communities. Social media can enhance private community management, making it easier to manage the community and reduce the generation of inappropriate information, which can increase the number of community members.

Hypothesis H4: Social media user's "Openness to Experience" to social media positively and significantly affects "Self-Disclosure":
This study shows that openness of experience has a positive and significant effect on self-disclosure, and among the top five personality traits of social media, users who are open to experience tend to share their experiences and thoughts. Through self-disclosure and sharing of preferences and information with others, more information sharing communities can be built, commonly used for maintenance of daily necessities, travel planning, food sharing and sharing of useful apps. Social media can enhance the differentiation of communities, different categories of communities, and a clear positioning of each different community.

Hypothesis H5: Social media user's "Neuroticism" to social media positively and significantly affects "Self-Disclosure":
The results of this study indicate that neuroticism has a positive and significant effect on self-disclosure, and among the top five personality traits of social media, neurotic users will seek attention through social media that they would not otherwise receive. Anonymity and privacy make others re-evaluate themselves, deepen relationships with others, and gain more feedback from self-disclosure.

Hypothesis H6: Social media user's "Self-Disclosure" to social media positively and significantly affects "Continuance Intention":
The results of this study indicate that self-disclosure has a positive and significant effect on continuance intention, and that self-disclosure in social media helps to increase users' continuance intention in social media. Through user interaction and communication, when users reach a certain level of communication, they will reveal relevant information about themselves to enhance and maintain relationships and increase the continuance intention of social media.

5.4 Research limitations

In this study, the sample size is mainly collected in Taiwan, but there are some differences in other countries due to different cultures, and there are also temporal considerations that may affect the results of this analysis, such as the negative impact on users' privacy caused by inappropriate use of personal information in social media. This study is based on mainstream casual social media in the broadest sense Academic social media are not included, e.g. SmartPLS academic forums and private academic communities on Facebook are not included. Academic social media showed a positive correlation with conscientiousness and a negative correlation with extroversion and neuroticism when compared to mainstream leisure social media. Therefore, academic social media were not included in the study. Likewise, changes in social media decisions about privacy issues over time can cause the number of social media users to fluctuate, resulting in different external effects (Andreou et al. 2019).

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Is Economic Growth Working for Jobs? An Investigation of the Employment Generating Capacity of the Nigerian Economy

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Abstract
Nigeria has been best with the incidence of concurrent unemployment and a good run of economic growth thus calling to question the efficacy of economic growth to create jobs in the country. In this paper, we examine first whether there exists any relationship between economic growth and employment in the manner espoused by Okun's law and then interpret the coefficient of the relationship as indicative of the capacity of the economy to translate growth into employment. Due to the unreliability of unemployment data in many developing countries we use the growth rate of employment as the dependent variable and thus expect to find a positive relationship with economic growth. A second model was specified with the growth rate of employment-to-population ratio as the dependent variable. Data were extracted from World Development Indicators and Penn's World Table for 1961 to 2017. All the variables were level stationary from two different tests of their statistical properties. We thus estimate the Ordinary Least Squares for the short-run coefficients and explore the robustness of the ARDL to different orders of integration for the long-run form. Both establish the application of Okun's law to Nigeria with the employment elasticity of GDP growth too small to generate discernible growth in employment. We estimated an average GDP growth of 16.22% over the long-run for the economy to keep a steady growth in employment.

Keywords: Economic Growth, Employment, Jobless Growth, Population, Okun's Law, Nigeria

1. Introduction

Productive employment and sustainable income growth remain a fundamental objective of development in many developing countries of the world as they grapple with a high and increasing incidence of poverty. Economic policymakers have come to terms with the grim reality of increasing output loss resulting from a persistently high rate of unemployment and the pervasive poverty that follows. Arthur Okun in what is now known as the Okun's law (Okun, 1962) presents the statistical evidence of a weak negative relationship between changes in the real gross domestic product (GDP) and changes in unemployment relative to its natural rate. His postulation holds that a one percentage point increase in real GDP growth above the potential GDP growth rate would induce a 0.3 percentage point reduction in unemployment. In essence, the law provides a tool to measure a country's GDP loss when the unemployment rate is above its natural rate, according to Wen and Chen (2012). New studies addressing different aspects of variables and methodological issues have thrown new light into the law. Currently, acceptable versions of the law posited that real GDP should grow approximately two percentage points faster than the growth rate of potential GDP to reduce the unemployment rate by one percentage point in a year. Hence, the GDP growth rate set the bounds within which employment growth can occur.

The postulations of Okun's law present two interesting implications for macroeconomic management. First, it lends credence to pro-growth economic policies as it provides a practical guide for policymakers to improve the GDP level by further reducing unemployment (Wen and Chen, 2012) under the assumption that a low level of unemployment is a sine qua non for income growth and poverty reduction. Second, if indeed the level of unemployment is held low, ceteris paribus, economic growth must be sustained over the long-run to maintain or decrease the nominal level of unemployment. Inherent in Okun's law, therefore, is the necessity for the continuous growth of the GDP (Garavan, 2017). In recent times, the reality of simultaneous persistent unemployment and economic growth in an experience called jobless growth has further put to the test the stability and usefulness of Okun's law. The point of the jobless growth phenomenon is that economic growth rate alone does not determine the bounds of employment expansion, the character or pattern of economic growth also matters. Each sector of the economy contributes differently to economic growth and is subject to different capital/labour intensity in the production process. Because some sectors are more employment-intensive than the others, it important that policymakers determine the labour absorptive potential of each sector of the economy and design policies to enhance both the labour absorptive capacity and labour productivity of all sectors.

The principal focus of this paper is to examine the economic growth and employment relationship in Nigeria. Specifically, the paper will attempt to determine the capacity of the economy to translate growth into employment by testing Okun's law for Nigeria over a period of fifty-seven years starting from 1961. Thus, this paper covers a longer period than previous works in Nigeria. The longer period should improve the reliability of our results and the following inferences. Due to the high level of aggregation, the long period covered presents, we will first attempt a descriptive decadal analysis of employment and economic growth rates for some stylised facts. The remainder of the paper proceeds thus: in the following sub-section, we present some stylized facts of the growth-employment relation in Nigeria and benchmarked the observed relation against four selected countries. Section 2 conducts a brief review of the extant literature and provides both the theoretical and empirical underpinning for the work. While section 3 introduces the models and tests the statistical properties of the data, we present and discuss the empirical findings from our regressions in section 4. Section 5 concludes the work with policy recommendations.

1.1Trend behaviour of employment and economic growth

In this section, we examine the time path of employment and economic growth rates. From 1961 to 2017, the mean growth rate of employment in Nigeria stands at 2.43%, while the economy grew at the average rate of 3.85%, in between, both variables exhibit divergent paths as employment growth and economic growth do not trend together closely.

Table 1: Employment and GDP Growth

	Employment growth (%)	% Change	GDP Growth (%)	% Change
1961 – 1969	2.76	-	2.85	-
1970 – 1979	2.01	*-0.75*	7.00	*4.15*
1980 – 1989	1.42	*-0.59*	-0.93	*-7.93*
1990 – 1999	2.83	*1.41*	2.31	*3.24*

2000 – 2009	2.47	*-0.36*	7.68	*5.37*
2010 – 2017	3.34	*0.87*	4.05	*-3.63*
1961 – 2017	2.43	*-0.91*	3.85	*-0.2*

Table 1 shows that Nigeria enjoyed a good run of positive economic growth in the decades between 1961 and 2017. Only in the 1980s was the average growth rate negative. Employment on the other hand maintained positive average growth rates all through the decades. The following stylised facts can be deduced from Table 1. First, the positive average economic growth rate in each decade was accompanied by a positive average employment growth rate, with 1980 – 1989 the only exception. Second, changes in the average employment growth rates between the decades appear unrelated to changes in economic growth rates between the decades. Between the 1960s and 1970s, a positive change in the economic growth rate (4.15%) was accompanied by a negative change in employment growth (-0.75%). Similarly, between the 1990s and the first decade of the 2000s, employment growth fell by -0.36% while the economy grew by 5.37%. There was a reverse relationship in decades 2000–2009 to 2010 −2017, the employment growth rate was positive and the economic growth rate was negative. Third, the annual growth rates of the two variables show a stronger correlation (0.38) than the decadal rate of change of the two variables (0.05). This may suggest that employment and economic growth rates correlate better in the short run than in the long run. We may at first approximation suggest that employment growth is not related to the dynamics of economic growth in the long run. We explore this position further in Figure 1 showing the annual growth rates of the two variables. The figure presents us with an alternative way of looking at the association between employment growth and economic growth without quantifying the association.

The pattern exhibited in Figure 1 appears to support the analysis of a correlation between the two variables. As expected, the economic growth rate measured as the rate of change of the GDP showed discernible episodes of positives and negatives, but the growth pattern of employment was very stable without the cycles that are associated with the GDP growth. For instance, during the prolonged periods of economic growth spanning 1969 to 1974, and 1996 to 2015 the growth rates of employment hovers around the same range as the periods of economic slump of 1966 to 1968 and 1993 to1995. It does appear unless econometrically proven otherwise, that the economy's capacity to stimulate growth in employment is very weak. Two possibilities may be at work. First, the magnitude of the economic growth rates witnessed over the years may be too weak to stimulate a strong positive change in employment growth. Alternatively, the unemployment level in Nigeria over the years may be so high so much that the magnitude of economic growth rates required to stimulate a strong positive change in employment growth is much higher than those witnessed over the study period. Second, there may be a very weak link between the sectors driving economic growth and employment growth so that the two are feebly associated. We will query the first possibility by examining the rate of change of the employment-to-population ratio (EPR) as an alternative measure of a country's ability to create employment. The International Labour Organisation (ILO) recommended the EPR also as a measure of an economy's employment generating capacity.

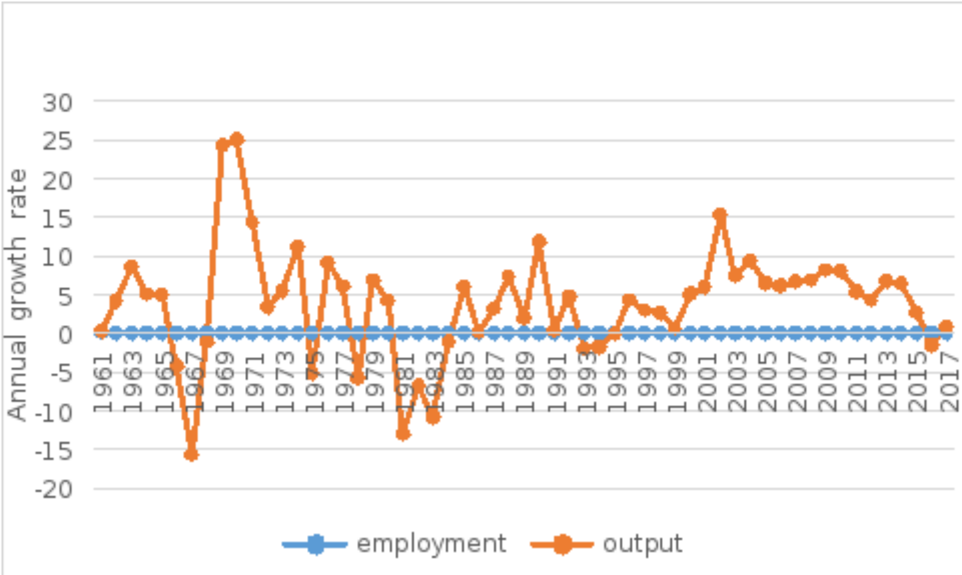

Figure 1: Trend pattern annual growth rates of employment and economic growth

Table 2: Employment-to-population ratio (EPR) 1961 - 2017

Country	Highest	Lowest	Average
High Income			
Germany	80.25	67.49	73.89
United Kingdom (UK)	75.56	64.70	70.48
United States (USA)	75.15	64.27	69.98
Middle Income			
Egypt	54.37	40.37	45.85
Nigeria	74.07	60.67	64.88
South Africa	72.48	43.95	54.03

Source: Author's computation

The employment-to-population ratio (EPR) describes the percentage of a country's working-age population that is employed or engaged directly in market-related activities and as a result contributing to the production of goods and services. The ratio typically falls between 50% and 75%. A high percentage is an indication that a country's working-age population is actively contributing to the national output. United Nations (2012), however, warned that EPR as high as 80% may occur in developing poor countries due to the abundance of low-quality jobs. In this situation, both the EPR and poverty rate may concurrently be high. Since there is no universal definition of high and low EPR for international comparison of economies, we will benchmark Nigeria against countries at higher and at comparable level development. The population base for the EPR for the six countries in the analysis is 15 – 64 years as compiled by the WDI. This will allow us to make a meaningful comparison of EPR in the countries. The EPR was computed using the WDI's data on the working-age population of 15 – 64 years and total employment data compiled by the Penn's World Table (PWT 9.1). Table 2 summarized the EPR for three high-income countries (Germany, United Kingdom and the United States) and three middle-income African countries (Egypt, Nigeria and South Africa).

At any time over the study period, approximately 61% of Nigeria's working-age population engaged in producing the national output. The USA and UK as high-income countries were just approximately five percentage points higher in EPR than Nigeria at the lowest point. Nigeria's highest level of EPR (74%) compares favourably with the USA's 75% and UK's 76%. While both the USA and the UK for the period 1961-2017 averaged approximately 70% and Germany 74%, Nigeria's EPR averaged 65%. Seemingly, the capacity of the Nigerian economy to generate employment favourably compares with some developed countries and undoubtedly superior to some African economies of comparable GDP size. Thus, the possibility of low magnitude of economic growth, resulting in a weak capacity of the economy to generate employment may not be tenable to explain the week association of economic growth and employment expansion.

The United Nations (2012) recommended pairing EPR's rate of change over time and economic growth rates to determine the capacity of economic growth to generate employment. This approach produced a much better result than the pair of employment growth rate and economic growth (see Figure 1). Figure 3 shows that employment expansion and economic growth indeed are related and exhibits a similar trend pattern if we measure employment in terms of the EPR. Generally, the growth rate of EPR and economic growth rate moved in the same direction but followed opposite paths in 1971 – 1974 and 2000 - 2004, with the growth rate of the economy being positive and EPR negative.

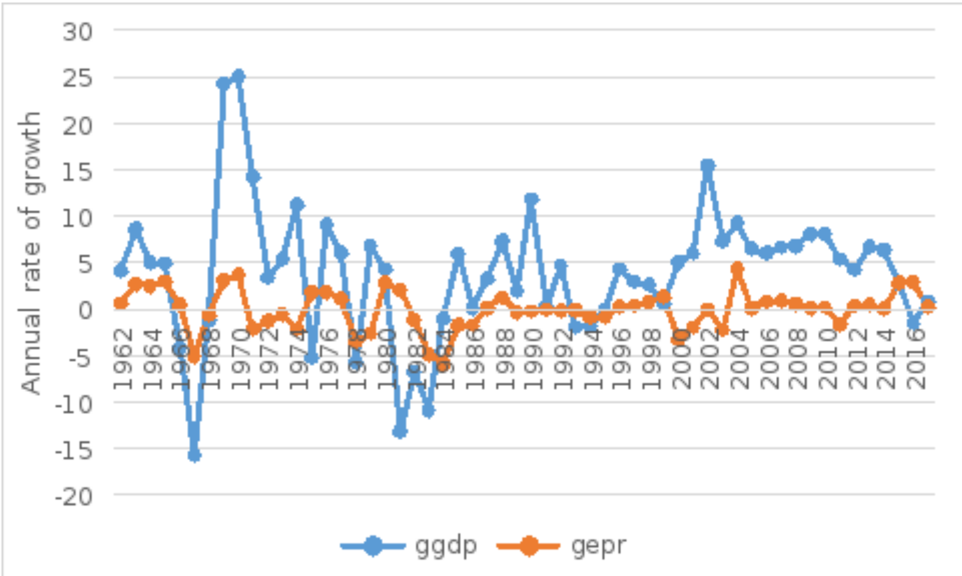

Figure 2: Trend pattern of economic growth and employment-to-population ratio

Overall, while the trend pattern of economic growth rate and employment growth rate suggests that both are unrelated, economic growth rate and the EPR showed a largely closely related trend pattern.

2. Review of literature

Generally, economic growth tends to be positively associated with employment**.** Shocks to the economy cause output to fluctuate around the economy's potential. These output fluctuations cause movement of labour in and out of jobs, changing employment. Changes in employment, in turn, move the employment rate in the same direction or the unemployment rate in the opposite direction (Farole, Ferro & Gutierrez (2017). Okun (1962) first empirically estimated the relationship between cyclical unemployment and output using quarterly US data and reached conclusions now famously known as Okun's law. Okun estimated two versions of the relation between unemployment and production. The "difference" version relates percentage change of real GDP to changes in the rate of unemployment, and the "gap" version relates the difference of actual unemployment with respect to its natural value to the difference between actual and long-run output (production gap). Okun concluded that output growth of one percentage point decreased unemployment by around 0.3 percentage points (Pizzo, 2019). Since the seminar work of Okun, several researchers have subjected the law to tests in individual countries groups of countries, and regions at different levels of economic development. Results generally showed that the nature and strength of the relationship varies and is determined by country or regional context.

Ball, Leigh & Loungani (2017) estimated the Okun's coefficient for 20 developed countries for the period 1980 to 2013 using both annual and quarterly data. The average coefficient for both datasets is -0.40, though the coefficients vary considerably across countries and spread between –0.27 and –0.55 for the annual data. Ball et al, contrary to the claims of breakdowns in the Law - see IMF (2010), Bakker and Zeng (2014), and McKinsey Global Institute (2011) - concluded that Okun's Law is a strong relationship that is fairly stable over time in most countries. Several other researches based on advanced economies data which upholds the Okun's Law includes Ball, Jallas & Loungani (2014) in a study of nine countries; Kargi (2016) in a study of OECD countries; Kitov & Kitov (2012) in a study of six countries; Dixon, Lim, & van Ours (2016) which disaggregated labour across age bands in a study of 20 OECD countries.

Results in studies of developing countries have generally ranged between the works of An, Ghazi & Prieto (2017) and Ball, Furceri, Leigh, & Loungani, (2019). Whist the law does not fit the data in low and lower-middle countries in An et al (2017), the fit of the law in developing economies is half as good as for advanced economies with Ball et al (2019). Bartolucci, Choudhry, Marelli, & Signorelli, M. (2018) as well as Farole et al (2017) also finds a fit for developing countries consistent with the evidence of some industrial countries with unemployment less responsive to output in developing countries. Findings on the growth – employment relation for African countries have been mixed. Okun's law has been found to hold in some studies albeit with very low coefficient in Algeria (Furceri, 2012), Ghana (Baah-Boateng, 2013, 2016) and Egypt (Elshamy, 2013). Moroke, N., Leballo, G P., Mello, D M. (2014) estimated the Okun's Law for South Africa reported a positive relationship between growth and unemployment and concluded the inapplicability of the law to South Africa. Phiri (2014) found a uni-directional causality from unemployment to economic growth thus complementing Moroke et al (2014) of the breakdown of Okun's Law in South Africa. However, Geldenhuys & Marinkov, 2007; Loungani & Mishra, 2015; Karim & Aomar, 2016 validated the law for South Africa. Studies on Nigeria like most other developing countries have turned up with mixed results. The studies of Bankole & Fatai (2013); Adenuga, Babalola & Saka (2013); Akanbi (2015); Ojapinwa & Lawanson (2016) Obodoechi & Onuoha (2019) invalidated Okun's law. Whereas, Ola-David, Oluwatobi & Ogundipe (2016); Adeyeye, Odeleye & Aluko (2018) found support for a significant inverse relationship between economic growth and unemployment in Nigeria.

Generally, for all climes, the Okun's law appears sensitive to data coverage, data frequency, the method of decomposition as well as the estimation technique. For African countries, in particular, results have largely been tempered by the fact that unemployment is often related to the structure of the economy, restrictive labour market legislation, and the availability of competencies. As African countries witnessed a greater level of structural transformation to more technology-intensive industries, production and employment will tend to move more closely together.

3. Methodology

3.1 Model and Data

Though the association between economic growth and employment growth is very weak, the precise nature of relationship and magnitudes can only be determined through econometrics procedures. Thus, we quantitatively examine the nature of the relationship under two assumptions that economic growth engenders employment growth, and the effect of economic growth on employment is not instantaneous. To evaluate Okun's law for Nigeria between 1961 and 2017, a time series dataset comprising the rate growth of output and employment was selected using a simple difference version of Okun's Law, as described by Knotek (2007). Given that output depends on the amount of labour used in the production process, there is a positive relationship between output and employment. Hence, Okun's law can also be measured as a positive relationship between changes in output and changes in employment. This approach was used by An, Ghazi & Prieto (2017) who considered the unemployment rate statistics in developing countries as not reliable. This paper followed adopted the same approach. The estimator 81 that shows the basic relationship between GDP growth and change in employment will be expected to be positive such that GDP and employment growth moves in the same direction. Thus, we estimate:

$Egt = ϐ0 + ϐ1GDPgt + εt$ 1.1

Under the method proposed by Knotek (2007) it is possible to estimate from equation 1.1 the level of output growth that would be required on the average to maintain stable employment growth:

$gt = ϐ0 / ϐ1$ 1.2

where gt is the rate of output growth that the economy must maintain to avoid declining employment growth, ceteris paribus.

We estimate a second model based on the EPR as a measure of employment. In our descriptive analysis, economic growth rate and the EPR growth rate exhibits a similar trend pattern unlike the pair of economic growth and employment growth. Based on the recommendation of the United Nations (2012) of pairing EPR's rate of change over time and economic growth rates to determine the capacity of a country's economic growth to generate employment, we will test the model:

$EPRgt = \phi0 + \phi1GDPgt + \mu t$ 1.3

The estimator ϕ1 which show the basic relationship between GDP growth and change in EPR should be positive such that as GDP grows employment grows. The larger the magnitude of ϕ1 the greater employment generating capacity of the economy. Similarly, under ceteris paribus conditions we can obtain the rate of output growth that the economy must sustain to keep a stable employment generating capacity

$gt = \phi0 / \phi1$ 1.4

Employment growth rate was computed from employment data extracted from Penn's World Table (PWT 9.1). The working-age population data supplied by the World Development Indicators (WDI) were combined with PWT employment data to generate data for the EPR. The dataset covers 1960 to 2017.

3.2Econometrics procedure

We set out with the test of the stationarity properties of the time series to determine the suitability of each variable for inclusion in the regressions, establish the possibility of cointegration and to choose the appropriate estimation technique. Two unit-root tests were applied. The Augmented Dickey-Fuller – ADF (xxx) test for the null hypothesis of unit root, while the Kwiatkowski, Phillips, Schmidt, and Shin (1992) (KPSS) test for the null hypothesis of stationarity. For the ADF test, we fail to accept the null hypothesis of unit root if the test statistic is significant at 5% level of significance. Similarly, the null hypothesis of stationarity is valid for the KPSS test if the test statistic is smaller than the critical value at the 5% level of significance. The results shown in Table 3 fail to accept the null hypothesis of unit root under the ADF for the two trend specifications. Similarly, we accept the null of stationarity under the KPSS test and conclude each variable stationary at levels.

Table 3: Test of stationarity properties of time series.

Variable	**ADF**		**KPSS**		**Trend Specification**	**Order of Integration**
	Test-statistic	Probability	Test-statistic	Critical value @ 5%		
Eg	-5.659067	0.0000	0.223940	0.463000	Intercept	I(0)
	-5.791973	0.0001	0.127771	0.146000	Intercept & Trend	I(0)
EPRg	-5.824655	0.0000	0.167085	0.463000	Intercept	I(0)
	-5.802394	0.0001	0.155865	0.146000	Intercept & Trend	I(0)
GDPg	-4.605072	0.0004	0.099122	0.463000	Intercept	I(0)
	-4.565408	0.0029	0.086193	0.146000	Intercept & Trend	I(0)

4. Regression results and discussions

4.1 Regression results and diagnostics

If all variables are stationary at level, it means that the statistical properties of the dataset are all constant over time. We can therefore proceed to estimate the model using the Ordinary Least Squares (OLS) without the risks associated with spurious regressions.

Table 4: Regression results and diagnostics.

Table 4A: Least squares estimate
Dependent Variable: EG

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPG	0.001182	0.000389	3.039894	0.0036
C	0.019730	0.003178	6.208092	0.0000

Table 4A: ARDL long run form estimates
Dependent Variable: EG
Selected Model: ARDL(2, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPG	0.001183	0.000558	2.118595	0.0391
C	0.019193	0.003937	4.875080	0.0000
CointEq(-1)*	-0.816879	0.124469	-6.562923	0.0000

F-Bounds Test

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	13.80512	1%	4.94	5.58

Diagnostics

	OLS		*ARDL*	
Normality test				
	Test statistics	Probability	*Test statistics*	*Probability*
Jarque-Bera	0.801757	0.669731	*0.274554*	*0.871729*
Breusch-Godfrey Serial Correlation LM Test				
	Test statistics	Probability	*Test statistics*	*Probability*
F-statistic	3.732107	0.0306	*0.383731*	*0.6834*
Obs*R-squared	7.029370	0.0298	*0.849807*	*0.6538*
Breusch-Pagan-Godfrey Heteroskedasticity Test				
	Test statistics	Probability	*Test statistics*	*Probability*
F-statistic	3.249404	0.0770	0.376515	0.7703
Obs*R-squared	3.178490	0.0746	1.192958	0.7547
Ramsey RESET Test				
	Test statistics	Probability	*Test statistics*	*Probability*
t-statistic	0.578878	0.5651	*1.900085*	*0.0633*
F-statistic	0.335099	0.5651	*3.610321*	*0.0633*
Likelihood ratio	0.352953	0.5524	-	-

All variables being level stationarity ordinarily suggests the absence of cointegration, we know however that the effect of economic growth on employment is not instantaneous. Thus, with the introduction of lags possibility exists for a long-run relationship. Given the robustness of the Auto Regressive Distributive Lag (ARDL) methodology to different orders of integration I(0), I(1) and their combinations, we will estimate both the OLS and the ARDL for the two models. Tables 4A and 4B show the OLS and ARDL results and their diagnostics for equation 1.1. Results for equation 1.3 are displayed in Tables 5A and 5B.

Table 5: Regression results and diagnostics

Table 5A: Least squares estimate
Dependent Variable: EPRG

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPG	0.112841	0.037193	3.033925	0.0037
C	-0.505304	0.303996	-1.662209	0.1023

Table 5B: ARDL long run form estimates
Dependent Variable: EPRG
Selected Model: ARDL(2, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPG	0.107136	0.050467	2.122886	0.0387
C	-0.553856	0.361778	-1.530925	0.1321
CointEq(-1)*	-0.846801	0.126207	-6.709624	0.0000

F-Bounds Test

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	14.42918	1%	4.94	5.58

Diagnostics

	OLS		*ARDL*	
Normality test				
	Test statistics	Probability	*Test statistics*	*Probability*
Jarque-Bera	0.411674	0.813966	*0.015898*	*0.992082*
Breusch-Godfrey Serial Correlation LM Test				
	Test statistics	Probability	*Test statistics*	*Probability*
F-statistic	3.626133	0.0336	*0.383731*	*0.6834*
Obs*R-squared	6.854201	0.0325	*0.849807*	*0.6538*
Breusch-Pagan-Godfrey Heteroskedasticity Test				
	Test statistics	Probability	*Test statistics*	*Probability*
F-statistic	2.987098	0.0896	*0.851409*	*0.7337*
Obs*R-squared	2.935357	0.0867	*1.850040*	*0.7167*
Ramsey RESET Test				
	Test statistics	Probability	*Test statistics*	*Probability*
t-statistic	0.107299	0.9150	*1.331417*	*0.1892*
F-statistic	0.011513	0.9150	*1.772672*	*0.1892*
Likelihood ratio	0.012164	0.9122	-	-

4.2 Discussion of results

The negative and significant coefficient of the cointegration equation of the ARDL and the F-bounds tests both established the long-run relationship of GDP and employment growths in Nigeria as specified in equation 1.1. The diagnostics reinforced confidence in the non-violation of the regression assumptions and the stability of the estimated model. Valid inferences can therefore be made both from the short-run OLS estimates and the long-run form of the ARDL. The economic growth coefficient as well as the intercept are positive and significant in the short- and long-run indicating that economic growth and employment move together in Nigeria. Economic growth consequently leads to employment growth in Nigeria validating the applicability of Okun’s law to Nigeria as Ola-

David, Oluwatobi & Ogundipe (2016), and Adeyeye, Odeleye & Aluko (2018) also found. As the focus of this paper is the employment-generating strength of growth, we look into the magnitudes of the coefficients in the short- and long-run. Curiously, there is no difference in the ability of the economy to turn economic growth into jobs in the short- and long-run. At a coefficient value of 0.001, the stylized fact derived from our descriptive analysis is confirmed that Nigeria's capacity to translate economic growth into employment is abysmally very weak. For every one-percentage-point growth in GDP employment changes by 0.001%.

While this result does not support the case of jobless growth for Nigeria it does reinforce the assertion that economic growth alone does not necessarily translate into more and better jobs. ILO (2019) raised two important factors as determinants of the efficiency by which growth translates into productive jobs: the sector composition of growth and the capital-labour intensity of growth within each sector of the economy. We will attempt to analyse these two factors to explain the very low capacity of growth translating into employment in Nigeria. CBN (2006) showed that factor accumulation accounted for 80% of growth in Nigeria of which labour is 65% and capital 15%. Productivity accounts for 20% of growth. In terms of sectoral decomposition, agriculture drives growth 41.49% (of which crop production is 36.95%), crude petroleum 25.72%, and manufacturing 4.5%. Agriculture and crude oil production thus account for approximately 70% of growth. By this account, Nigeria's growth is essentially driven by labour-intensive agriculture with its low productivity and the capital-intensive crude oil production with very low labour-absorptive capacity. Olamade (2017, 2019) presented evidence of structural transformation with both the share of agriculture in the GDP and employment declining. In the period 2011 – 2015 services has overtaken agriculture with a thirty percentage point lead in contribution to the GDP. However, this transformation is towards labour-intensive transport and travel services sub-sectors. As the economy transforms from one labour-intensive sector to another and productivity remains low, the efficiency of the economy to translate growth into more employment stay weak.

Given that the statistical significance of the estimated coefficients from equation 1.1 for both the OLS and the ARDL, we can obtain according to our equation 1.2 the growth rate (80 / 81) required for the Nigerian economy to achieve a stable rate of employment. In the long-run, on the average, the economy would require annual growth rates of 16.22%, to maintain a stable employment rate. Historical antecedents of growth in the country showed that the country can attain and sustain double-digit growth rates. Growth was 24.19 % in 1969 and 25.00% in 1970. In recent times, a growth rate of 15.32 was recorded in 2002. It follows that with the right economic and institutional frameworks economic growth can be made effective in creating more and better jobs.

Results from equation 1.3 return significant and much stronger Okun's coefficients than those of equation 1.1. Equation 1.3 explores an alternative measure of employment using the rate of change of the employment-population ratio as the dependent variable. The short-run and long-run coefficients are also very close. The intercepts are negative and insignificant making it impossible to calculate the average rate of growth required to keep employment rate steady and growing. However, the results obtained from estimating this alternative measure of employment further lend credence to pro-growth policies as a means of creating employment in Nigeria.

5. Conclusion and policy recommendations

In terms of the expected sign of coefficient, the analysis presented in this paper refutes the phenomena of jobless growth for Nigeria. It, however, upholds that the efficacy of growth to generate jobs is abysmally very low thus, suggesting that Nigeria has been plagued by a very high and pervasive rate of unemployment such that the rate of economic growth experienced over the years is not high enough to translate into a visible change in the employment. This may account for the estimated 16.22% average growth rate that policymakers will be required to maintain over the long run to keep employment rate steady and growing.

Since economic growth and employment growth are cointegrated, pro-growth economic policies capable of sustaining double-digit growth rate over the long run should be vigorously pursued. Such policies must be designed to target the:

1. Deliberate structural transformation of the economy in the direction of high productivity labour-intensive sectors. In this regards, agriculture and the services sectors that are the main drivers of economic growth should be repositioned for technology adoption and productivity enhancement.
2. Labour-intensive manufacturing in agro-processing, textiles, food and beverages, and mineral processing should be revived and coupled by backward integration into the country's vast natural resources endowment.
3. Harmonisation of sectoral industrial policies with other national policies such as science, technology and innovation policy, education policy, and trade policy to evolve a functional national system of innovation.
4. Creation of requisite institutional structure for market efficiency, contract enforcement, and an environment supportive of continuous improvements in start-ups, growing, and mature industries.

The ultimate goal of pro-growth policies in Nigeria therefore should be the enhancement of concurrent sustained growth in output, productivity, and employment if economic growth is to work for better and more jobs.

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Assessing the Negative Determinants on the Usage Intention of Social Media

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Abstract
Since the development of the Internet jumped quickly, the user can perform a variety of social media information and communicate via computers, mobile phones and other smart devices. Social media can be presented in many different forms, including text, images, music and videos. Under the high popularity of social media usage, users will share information on community self-media platforms, including personal ideas, feelings and experiences. However, social media is one of the sides of a virtual network that allows users to bring convenient, instant, etc. But they also bring negative factors can't be predicted for users, such as: lack of privacy controls, social media into hidden problems. Due to these reasons, users can cause by long-term excessive use of social media, and make themselves feel fatigue social of psychology. The study investigates whether the negative factors will affect users of social media for social impact of fatigue, use Google questionnaires to collect samples of the web results. To sum up, the conclusion of the study showed that most of the negative factors of social media are social media users will feel social fatigue.

Keywords: Social Media, Negative Factors, Social Fatigue, Partial Least Squares

1. Introduction

Due to the rapid development and fusion of the Internet, users can use computers, mobile phones, and other smart devices to deliver and communicate a variety of information through social media, which has the advantage of not being limited by time and space, and is highly interactive, low-cost, and even responsive (Chen et al., 2012). Social media is a virtual network platform that users use to create, share, and exchange ideas and experiences with each other, and the most significant difference between social media and mass media is that it allows users to enjoy more choice and editorial power to assemble themselves into some kind of online sharing community. And social media can come in many different forms, including text, images, music and video clips, such as Facebook, Twitter, Plurk, Instagram, Google+ and other social media. With the high usage of social media, some social media users are already experiencing Social Media Fatigue.

On the other hand, social media has created a new virtual society on the Internet through its potential social functions and leisure needs, and has successfully captured the hearts of users through the advantages of two-way communication and interactive exchange. However, according to a survey conducted by Sophos, a UK-based Internet security provider, the privacy of Facebook users is poorly protected, with 60% of users considering abandoning Facebook due to privacy concerns. Depending on the user's Internet privacy, the level of Internet privacy, and the user's personality, the higher the user's level of Internet privacy, the higher the user's level of privacy protection will be, which will cause the user to refuse to use social media.

In previous studies, researchers have focused on the positive causes of social media use, such as sending and receiving messages in real time, expanding social relationships, and information dissemination, to explore users' intention to use social media through positive causes. However, social media itself is a two-sided virtual network. Social media brings convenience, immediacy, and entertainment to users, but it also brings unexpected negative consequences, such as privacy frustrations and perceived lack of control, social comparison, social comparison, SNS addiction and other negative causes (Lin, 2013; Masur et al., 2014; Fox & Moreland, 2015). In addition, some studies have demonstrated that excessive addiction to social media can reduce happiness levels (Chou & Edge, 2012; Chen & Lee, 2013; Kross et al., 2013), as can indifference in student relationships or lead to couple breakups (Marshall, 2012; Fox et al., 2013). al., 2013; Tokunaga, 2014; Bevan et al., 2014). Therefore, in order to understand the consequences of the negative attributes of social media to the users, the negative attributes of social media were included in this study.

However, Lin's (2015) research indicates that many social media users consider whether to continue using social media because of the social fatigue caused by the negative aspects of social media. According to Krämer & Winter (2008), social media users are expressing themselves on their own social media platforms in order to actively participate in social media and to reveal their feelings about themselves. Revealing feelings, emotions and experiences, when these self-revealing behaviors lack privacy and control, can be easily stolen and abused by those who want to get away from using social media. Summarizing the above, the objectives of this study are as follows:

1) To explore whether the negative causes of social media influence the users' level of social fatigue.
2) The theoretical and practical contributions of the proposed research model in this study are discussed through a two-stage structural equation model analysis (measurement model and structural model analysis).

2. Literature Discussion

2.1 Negative factors

The rapid development of information technology has rewritten the way people communicate with each other, and face to face communication is no longer the main method. The convenience of social media also affects the daily lives of individuals and attracts the attention of corporate organizations because companies can create business opportunities by publishing advertising messages through social media, such as posting their brand's video ads, photos and brand stories on their social media pages.

Although social media can be a great way to communicate and make our lives easier, past research has shown that there are negative aspects of social media that make users refuse to use it. The negative aspects of social media are also according to Bevan et al. (2014) who stated that excessive use of social media or spending too much time on social media can reduce one's quality of life, Chen & Lee's (2013) study also noted that social media can link to other users' personal pages to generate jealousy or comparison, which can lower users' self-esteem, over-perception of self, and feelings of pressure to use social media. Lin's (2013) study also mentions negative factors of social media, such as: an interface that is too easy to use, causing users to expose their user information, too many advertisements on users' interfaces, difficulty in protecting personal privacy, over-reliance on social media, social fatigue of users, individuals wasting too much time using social media, gossiping about others, and social constraints. Fox & Moreland (2015) conclude that there are five negative factors associated with the use of social media, such as: managing inappropriate or annoying content, being tethered to social media, lack of privacy control, social comparison and jealousy, and relationship tension and conflict in social media;On the other hand, Masur et al. (2014) also mention online invisibility as a negative factor of social media, such as: loss of control, tolerance, Social Media Withdrawal syndrome, Negative consequences for social relations, Negative consequences for work and performance.

2.2 Social fatigue

Fatigue is a physiological change that occurs when the human body loses its function or disrupts itself. In other words, when the environment changes or when the body is tired of someone and lacks interest in something, the body experiences changes in function, material changes, conscious fatigue, or changes in efficiency. With the proliferation of smart devices, the number of people using social media (e.g., Facebook, Twitter) has increased dramatically, but so has the number of people who feel psychologically exhausted from using social media. Hochberg et al. (2013) mentioned that in general, fatigue is a feeling of chronic tiredness and reduced interest in things and Ukaegbu et al. (2014) also stated that fatigue is a subjective feeling or a lack of interest in things.

Yamakami (2012) refers to many past studies that have shown social fatigue in users who overuse social media to publish their experiences, describing symptoms of psychological fatigue in the context of social media use. According to a report in the Korean Central Daily News (2013/9/14), whether it's using social media all the time to check if a friend has passed on a message, using social media to express one's personal feelings, or being under peer pressure to compare, the repetitive effects over time can cause social media users to experience psychosocial fatigue, They may even become addicted to social media, which affects their daily lives and may be overly sensitive to the online world's authentication and evaluation.

In an article by Lee et al. (2016), it is also noted that social media provides a platform for users to express themselves and facilitate their adjustment to the advent of social media. However, overuse of social media can have unintended consequences, one of which is social fatigue, although it is not always easy to see. This social fatigue refers to the psychological fatigue users feel when using social media for subjective or self-assessment purposes. With the extensive use of social media, users become obsessed or expect other users to respond to their posts in real time; therefore, in order to meet these expectations, users need to continuously pay attention to their own social media, which causes them physical and psychological stress as they are overloaded with information, communication, and system functions.

Moreover, the social fatigue of social media goes beyond the overuse of social media. The article by Hong et al. (2015) also mentioned that there are many factors that contribute to social fatigue (Table 1). For example, self-disclosure, social interaction or knowledge sharing, social pressure, privacy violations, etc., can burden social media users and lead to psycho-social fatigue in the process.

Table 1: Factors influencing social media fatigue

Influencing factor	definitions
Worry about the personal information leakage and the privacy invasion	The fatigue comes from fears about personal information leaks and privacy violations.
Social Pressure	Fatigue is caused by undesirable behaviors or expressions of atmosphere and social stress.
Undesirable relationships	Fatigue comes from being connected to an unknown user.
Burden on the social media	Fatigue is the social media that takes time to try to sustain itself.

Source: Hong et al. (2015) and this study.

3. Research Design

3.1 Operational definitions of research variables

The variables in this study include two dimensions of social media negativity and social fatigue. The variables are organized into operational definitions based on the literature, which are listed in Table 2.

Table 2: Definition of constructs

Measurements	Variable operation definition	Reference source
Loss of control	It is difficult for social media users to control the amount of time they spend on social media and to continue using social media for a long period of time.	Masur et al. (2014); Lin (2013)
Withdrawal syndrome	With limited Internet access or long periods of disconnection, social media users are anxious and eager to use social media.	Masur et al. (2014); Lin (2013)
Negative consequences for social relations	Social media users will use social media to the detriment of important people (family/friends) etc., resulting in a decline in social relationships.	Masur et al. (2014); Lin (2013); Fox & Moreland (2015)
Negative consequences for work and performance	Social media users will use social media to the detriment of their work/school performance, resulting in reduced self-esteem.	Masur et al., (2014); Lin (2013); Fox & Moreland (2015)
Managing inappropriate or annoying content	Social media cannot keep users' personal information securely and filter inappropriate content.	Fox & Moreland (2015)
Lack of privacy and control	Social media cannot properly control a user's privacy, for example, by exposing personal information and messages.	Fox & Moreland (2015); Liu et al., (2014)
Relationship tension and conflict	Conflicts of opinion arise when a user expresses an opinion that differs from that of other users.	Fox & Moreland (2015)
Tolerance	Social media users continue to spend more and more time using social media.	Masur et al. (2014); Lin (2013)
SNS Fatigue	Social media users are tired of using social media or are not interested in social media.	Lin (2015); Yamakami (2012)

3.2 Hypothesis derivation and research framework

Past studies have found that social media brings many positive factors to users, such as a sense of belonging and community awareness (Chang & Zhu, 2012; Chen et al., 2012; Wu & Chen, 2015). And recent studies have suggested many negative factors of using social media, such as exposure to personal privacy risks, product marketing advertisements, and online invisibility (Lin, 2013; Masur et al., 2014; Lin, 2015; Fox & Moreland, 2015). According to Masur et al. (2014), the literature exploring online invisibility assumes that users lack autonomy and use social media to expose themselves and their self-expression, use social media to introduce themselves to other social media users, or use social media to escape from reality. The results of the study show that users will still be invisible to the social media network, even if they are offline. Fox & Moreland's (2015) findings on negative social media also cited five negative social media factors that affect users' intention to continue using social media. And synthesizing the above two literatures, this study proposes eight negative factors to be explored as negative factors. According to Lin (2015) who confirmed that social media negatives affect users' satisfaction and lead to social fatigue with social media, and Yamakami (2012) who stated that overuse of social media can make users feel socially fatigued, Lin (2015) identified social media negatives and social fatigue as negative effects in his study. Based on the aforementioned related studies, the following hypotheses are proposed for this study:

According to Masur et al. (2014) and Lin (2013) literature, users will have difficulty controlling the amount of time they spend using social media compared to the expected increase in time spent using social media due to internet addiction to social media, and attributing the difficulty control factor to a form of internet addiction is a negative factor for users of social media. However, in Lin's (2015) study it was also confirmed that the negative aspects of social media would lead to social fatigue felt by social media users, hence hypothesis H1:

H1: Social media users have a positive and significant impact on social fatigue due to difficulty controlling their use of social media.

According to Masur et al. (2014) and Lin (2013) literature, users become dependent on social media due to internet addiction to social media use and feel anxious and uneasy after not using social media for a long period of time, and the social media syndrome factor is categorized as a form of internet addiction, which is a negative factor of social media for users. However, in Lin's (2015) study it was also confirmed that the negative aspects of social media would lead to social fatigue felt by social media users, hence the hypothesis H2:

H2: Social media users have a positive and significant impact on social fatigue in social media syndrome.

According to Masur et al. (2014) and Lin (2013) in their literature, users can become addicted to social media due to internet addiction and neglect the negative social relationships that result to those important to the user's surroundings (family, friends, etc.) Fox & Moreland (2015) also referred to social media as a way to keep oneself disconnected from social media use due to peer relationships or a desire to stay connected to other users. Lin (2015) also confirmed in his study that the negative aspects of social media would lead to social fatigue felt by social media users, thus hypothesis H3 was proposed:

H3: Social media users have a positive and significant impact on social fatigue in terms of social media social relationships.

According to Masur et al. (2014) and Lin (2013) literature, users can become addicted to the use of social media and neglect what they are supposed to do, resulting in negative job performance, which is categorized as a social media negative. Fox & Moreland (2015) also mentioned that social media users would recommend their friends to use social media with them, and that social media users would have to spend time browsing and responding to other users' activities, leaving them less time to concentrate on their work or studies and less time to communicate with each other face-to-face. It was also confirmed in Lin's (2015) study that the negative aspects of social media will lead to social fatigue felt by social media users, hence the hypothesis H4:

H4: Social media users have a positive and significant impact on social fatigue in terms of their social media performance.

According to Fox & Moreland (2015) literature, users may experience mild irritation with inappropriate social media content ranging from irritation, surprise, and disgust, making inappropriate content management a negative factor in the use of social media. It was also confirmed in Lin's (2015) study that the negative aspects of social media will lead to social fatigue felt by social media users, hence the hypothesis H5:

H5: Mismanagement of social media content positively affects social fatigue among social media users.

According to Fox & Moreland (2015) and Liu et al. (2014), users pay considerable attention to personal privacy in social media, and the failure of social media to protect users' privacy leads to personal outflow, making the lack of privacy control a negative factor in the use of social media. Ho et al. (2009) also noted that social media does not provide users with adequate privacy protections such as security, personal information, reputation, and reliability. While social media facilitates interaction and communication between users, users may also be concerned that over-expression of their personal information on social media may expose their privacy. According to Stieger et al. (2013), a high level of online privacy is highly valued by Internet users, and as a result, many highly Internet-averse users refuse to use social media, and even turn off or delete social media. It was also confirmed in Lin's (2015) study that the negative aspects of social media will lead to social fatigue felt by social media users, hence the hypothesis H6:

H6: Social media users' lack of privacy control over social media positively affects social fatigue.

According to Fox & Moreland (2015), social media users can cause conflicts of opinion by posting articles via offline status. For example, the high visibility of social media posts makes it easy for other users to link to a personal profile, which can be used to create a topic of conversation and trigger a conflict of opinion. Users can be influenced by politics, morality, or current events to create topics that can be heatedly explored and commented on, thus causing other users to feel unhappy about negative comments or comments that are different from their own. It was also confirmed in Lin's (2015) study that the negative aspects of social media will lead to social fatigue felt by social media users, hence the hypothesis H7:

H7: Social media users' conflicting views on social media positively affect social fatigue.

According to Masur et al. (2014) and Lin (2013), users tolerate their increasing time spent using social media due to internet addiction to social media, and categorizing the social media tolerance factor as a form of internet addiction is a negative factor for users of social media. According to Hsu & Lu (2004) and Koo (2009), the flow experience of online games will positively influence the willingness to use online games, which means that the addiction to online games will positively influence the players' willingness to use online games. Literature we can illustrate that social media tolerance is a stream-of-mind experience, and that social fatigue itself is one of the attitudes. Referring to the above literature, we propose hypothesis H8:

H8: Social media users' tolerance for social media is negative significantly affecting social fatigue.

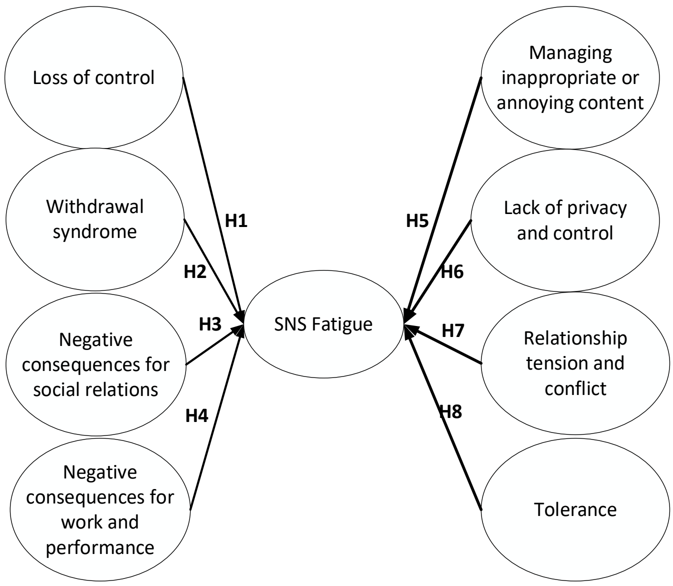

Figure 1: Research Framework

Table 3: Research Hypotheses

Hypothesis	Path direction
H1：Social media users have a positive and significant impact on social fatigue as they find it difficult to control their use of social media.	LC → FAT
H2：Social media users showed a positive and significant impact on social fatigue.	WS → FAT
H3：Social media users have a positive and significant impact on social fatigue in terms of social media social relationships.	SR → FAT
H4：Social media users showed a positive and significant impact on social fatigue in terms of social media job performance.	WP → FAT
H5：Mismanagement of social media content positively affects social fatigue among social media users.	MIAC→ FAT
H6：Social media users' lack of privacy control over social media positively affects social fatigue.	PR → FAT
H7：Conflicting views of social media users positively affect social fatigue.	FIG → FAT
H8：The negative trend in social media users' tolerance for social media significantly affects social fatigue.	TL → FAT
Note：FAT=Fatigue; FIG=Fighting on and about Social Media; LC=Loss control; MIAC=Managing inappropriate or annoying content; PR=Privacy frustration and perceived lack of control; SR=Negative consequences for social relations; TL=Tolerance; WP=Negative consequences for work and performance; WS=Withdrawal syndrome	

3.3 Questionnaire Design

Based on the aforementioned proposed research purpose, research framework and operational definition organization, this study questionnaire was designed with reference to the relevant literature for questionnaire content design. During the design process, the questionnaire was discussed with professors in related fields, and was revised several times. The question on the "negative aspects of social media" was modified from Lin (2013), Masur et al. Withdrawal syndrome, Negative consequences for social relations, Negative consequences for work and performance, managing inappropriate or annoying content, Privacy frustration and perceived lack of control, Fighting on and about Social Media, and Tolerance.

In this study, "social fatigue" was based on the social fatigue questions developed by Yamakami (2012) and Lin (2015) and modified as a measure of "social fatigue". A seven-point Likert scale was used for each construct, ranging from strongly agree (7) to strongly disagree (1), as shown in Table 4.

Table 4: Questionnaire design

Loss of control: Lin (2013); Masur et al., (2014)
LC1 When I'm browsing social media, I often think "in a few minutes", but I have trouble controlling when I end up on social media!
LC2 I spend a lot more time on social media than I expected.
LC3 I often try to reduce my time spent on social media, but to no avail
LC4 I sometimes worry that I spend a lot of time on social media.
Withdrawal Syndrome: Lin (2013); Masur et al., (2014); Fox & Moreland (2015)
WS1 I get nervous when I don't have access to social media for a period of time.
WS2 When I can't use social media because I haven't used it for a while (e.g. when I'm away on a trip or on vacation), I get antsy and want to know what other people are up to.
WS3 Am I missing dynamic messages on social media when I'm not online?
WS4 When I'm not online, I want to know about updates on social media.
Negative consequences for social relations: Lin (2013); Masur et al. (2014)
SR1 I use social media less to interact with my real-world friends.

SR2 People who are important to me (e.g., friends, family) tell me that using social media is a bad decision.

SR3 People who are important to me (e.g., friends, family) often complain that I spend too much time using social media.

SR4 Since I started using social media, I've noticed that some of my friends are drifting away from me.

Negative consequences for work and performance: Lin (2013); Masur et al., (2014); Fox & Moreland (2015)

WP1 I often use social media at my work/campus location.

WP2 My use of social media often interferes with my work or studies.

WP3 I often neglect what I'm supposed to be doing because I'm using social media.

Managing inappropriate or annoying content: Fox & Moreland, (2015)

MIAC1 When I use social media, I often see my friends post angry or frustrated messages.

MIAC2 When I use social media, I can get important personal messages from my close friends.

MIAC3 When I use social media, I often see content that is violent, obscene or inappropriate

Privacy frustrations and perceived lack of control: Liu et al., (2014); Fox & Moreland, (2015)

PR1 Generally speaking, when I use social media, it is risky to send messages to others.

PR2 When I use social media to send messages to others, there is a high risk that my personal information will be exposed.

PR3 When I use social media, I don't give people much information about me.

PR4 Providing personal information about others and myself at a time when social media involves many unanticipated issues.

PR5 When I use social media, I feel safe giving others my private information.

Fighting on and about Facebook: Fox & Moreland, (2015)

FIG1 When I use social media, other users care if you respond to their activity.

FIG2 When I use social media, I'm expressing my opinion, and I'm in conflict with other users.

FIG3 When I use social media, I'm not getting along with my friends because I'm posting inappropriately.

Tolerance: Lin (2013); Masur et al. (2014)

TL1 Until now, I've been spending more time on social media.

TL2 The amount of time I spend browsing social media continues to increase.

TL3 I wish I had more time to browse social media.

SNS Fatigue: Yamakami (2012); Lin (2015)

FAT1 When I use social media, I may be receiving too much information.

FAT2 When I use social media, I can't always afford to overload myself with information.

FAT3 When I use social media, it doesn't find the information I'm looking for quickly enough.

4. Results

After the design of the draft questionnaire of this study was completed, it was verified with the professors in the related research fields that the content of the scales designed in this study conformed to the meanings mentioned in each research construct in order to meet the expert validity. After the questionnaire was amended, social media users were invited to complete the questionnaire online in a convenient sampling method. The online questionnaire of this study specifically asked respondents whether they had experience in using social media. No data will be collected from inexperienced users to ensure that. A total of 485 questionnaires were collected and analyzed after the sampling survey. After eliminating the invalid questionnaires, the total number of valid questionnaires was 450. In this study, Smart PLS 2.0 and SPSS 18.0 were used as analysis tools. The analysis process is mainly divided into two stages: Outer Model Analysis and Inner Model Analysis. The first stage of the exomodel analysis focuses on whether the internal consistency, content validity, convergent validity, and discriminant validity of the data meet the criteria. The within-model analysis in the second stage examines whether the hypothesis of the path proposed by the research model holds or not.

4.1 Descriptive Statistic Analysis

The main purpose of statistical analysis in this study is to analyze the distribution of basic information of the sample, in order to gain a preliminary understanding of the distribution and characteristics of the sample. The sample of this study was drawn from experienced users of social media. Please refer to Table 5 for the sample structure of this study.

According to Hair et al. (2010), a sample size of more than 100 is the minimum requirement for parameter estimation by best approximation because a small sample size may result in a large sample size. The results cannot be restrained or are inappropriate. The number of valid questionnaires for this study was 450. Therefore, the sample size of this study met the requirement of statistical analysis. In addition, the nine components and questions of this study are based on the relevant domestic and international literature, designed and revised according to the content of this study. Therefore, it means that the measure used in this study meets the criteria of content validity and therefore this study has a significant degree of content validity.

Table 5: Sample structure

Item	Variable	Number of people	percentage %
gender	males	281	62.4%
	female	169	37.6%
age	Under 20 years old	46	10.2%
	21-30 years old	314	69.8%
	31-40 years old	63	14.0%
	41 years old and above	27	6.0%
Academic qualifications	Senior High School (inclusive) or below	58	12.9%
	University (College)	320	71.1%
	Master's degree or above	72	16.0%
Occupation	Students	140	31.1%
	In Service	272	60.4%
	Unemployed & Others	38	8.5%

4.2 Measurement Mode Analysis

In this study, factor loadings greater than 0.5 were used as the evaluation criterion. If the factor loadings in the question do not reach the recommended values, they are not representative and should be deleted (Hair et al., 2010), otherwise they should be retained. In this study, a measurement model was used to validate the factor load of each question. The factor loadings of the other constructive questions, except for FAT1, FIG1, MIAC2, PR3, and WP1, which were deleted because of their low factor load, was used to verify the factor load of each question. The proposed values were all higher than the recommended value of 0.5 and were retained (Table 6).

According to Fornell and Larcker (1981), for a research model to have Convergent Validity, the following conditions must be met: (1) The factor load must be significant; (2) the composite reliability (CR) must be at least 0.6; and (3) the average extraction variation (AVE) must be at least 0.5. As shown in Table 6, the present model meets the conditions for convergent validity as identified by Fornell and Larcker (1981). In addition, the square root of AVE of each component is larger than the correlation coefficient of each component in terms of Discriminant Validity (as shown in Table 7), indicating that the measurement model in this study has discriminant validity.

Table 6: Factor Loadings, Reliability and AVE for Each Component

Structure	Pointer Variable	Factor loading	Composition Reliability	AVE
Loss Control	LC1	0.794	0.904	0.701
	LC2	0.815		
	LC3	0.878		
	LC4	0.860		
Withdrawal Syndrome	WS1	0.840	0.906	0.708
	WS2	0.875		

Structure	Pointer Variable	Factor loading	Composition Reliability	AVE
	WS3	0.780		
	WS4	0.866		
Negative consequences for social relations	SR1	0.755	0.873	0.634
	SR2	0.763		
	SR3	0.806		
	SR4	0.856		
Negative consequences for work and performance	WP2	0.926	0.917	0.847
	WP3	0.915		
Managing inappropriate or annoying content	MIAC1	0.824	0.829	0.708
	MIAC3	0.858		
Privacy frustrations and perceived lack of control	PR1	0.865	0.829	0.624
	PR2	0.872		
	PR4	0.602		
Fighting on and about Facebook	FIG2	0.903	0.910	0.835
	FIG3	0.925		
Tolerance	TL1	0.898	0.897	0.746
	TL2	0.934		
	TL3	0.748		
SNS Fatigue	FAT2	0.767	0.848	0.584
	FAT3	0.707		
	FAT4	0.841		
	FAT5	0.734		

Table 7: Correlation coefficient matrix and AVE square

	FAT	FIG	LC	MIAC	PR	SR	TL	WP	WS
FAT	0.873								
FIG	0.406	0.897							
LC	0.339	0.318	0.930						
MIAC	0.341	0.373	0.234	0.767					
PR	0.327	0.295	0.266	0.411	0.826				
SR	0.483	0.543	0.428	0.388	0.331	0.898			
TL	0.221	0.315	0.671	0.286	0.196	0.460	0.912		
WP	0.409	0.466	0.493	0.356	0.284	0.601	0.429	0.906	
WS	0.202	0.358	0.489	0.281	0.218	0.409	0.585	0.377	0.928

Note1: FAT=Fatigue; FIG=Fighting on and about Social Media; LC=Loss control; MIAC=Managing inappropriate or annoying content; PR=Privacy frustration and perceived lack of control; SR=Negative consequences for social relations; TL=Tolerance; WP=Negative consequences for work and performance; WS=Withdrawal syndrome
Note 2: The value of the diagonal bold italic font is the square root of the AVE value of each component.

4.3 Path Analysis

Based on the values of the indicators generated by the research framework, the path analysis of the test model is performed and the data from the analysis results are used to validate the research framework. This section mainly focuses on the path analysis of the proposed research model in this study, and uses Smart PLS software to conduct the Inner Model analysis, which is the Structural Equation Model mentioned in SEM method. Therefore, the main purpose of this section is to check whether the paths of each component are statistically significant, and to verify the influence and effect of each component.

Table 8 shows the results of the estimation of internal patterns in this study, while Figure 2 shows the results of the analysis of internal patterns in a graphical presentation. According to Table 8, six of the path coefficients have T-values greater than 2, indicating that two of the eight research hypotheses proposed in this study do not hold at the 95% confidence level.

Table 8: Results of the hypothesis testing

Research Hypothesis	**Path Coefficient**	**t-value**	**Supported**
H1: Social media users have a positive and significant impact on social fatigue as they find it difficult to control their use of social media.	0.201***	3.896	Yes
H2: Social media users showed a positive and significant impact on social fatigue.	-0.070	1.349	No
H3: Social media users have a positive and significant impact on social fatigue in terms of social media social relationships.	0.276***	4.977	Yes
H4: Social media users have a positive and significant impact on social fatigue in terms of social media job performance.	0.091	1.511	No
H5: Mismanagement of social media content positively affects social fatigue among social media users.	0.115*	2.055	Yes
H6: Social media users' lack of privacy control over social media positively affects social fatigue.	0.109*	2.033	Yes
H7: Conflicting views of social media users positively affect social fatigue.	0.143**	2.804	Yes
H8: The negative trend in social media users' tolerance for social media significantly affects social fatigue.	-0.139**	2.275	Yes
Note: * p-value<0.05, **p-value<0.01, *** p-value<0.001			

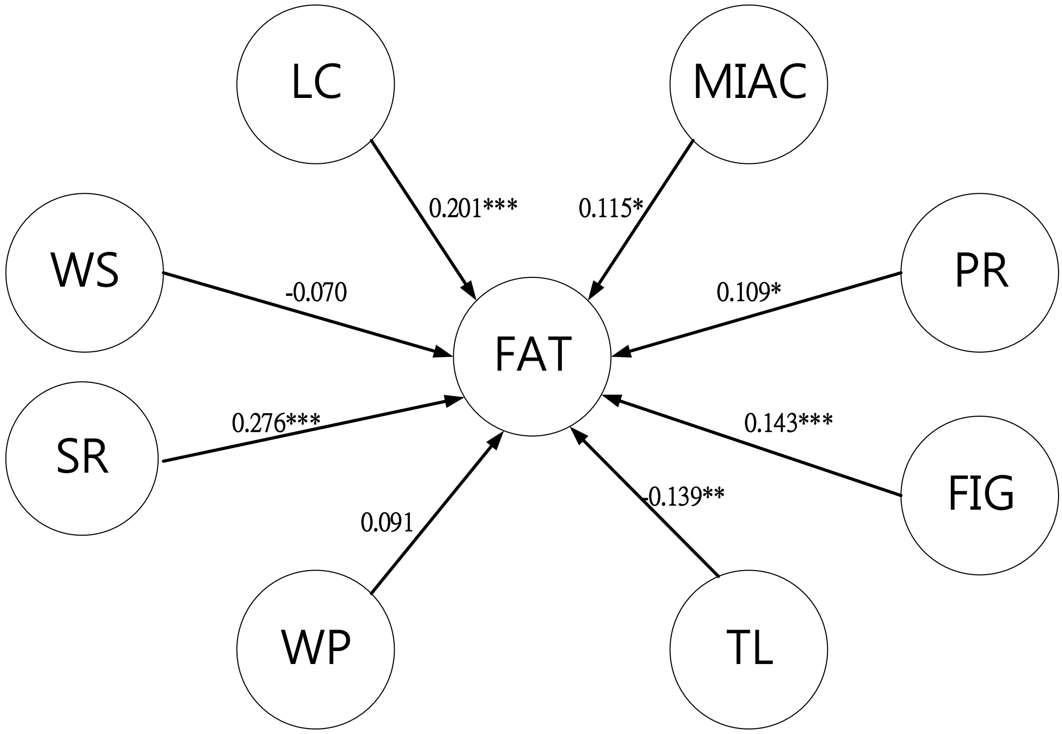

Figure 2: Inner-mode Path Analysis Results

5. Conclusion and Recommendations

This study is divided into three subsections to summarize the above empirical results, which are divided into research conclusions, management implications, research limitations, and future research directions, to illustrate the conclusions of this study after data analysis, to suggest the practical implications of the research results, management implications and recommendations, and finally to propose the research limitations and future research directions of this study for reference for future related research and studies.

5.1 Conclusion and Discussion

This study hypothesized that the results of the H1 study would indicate a positive and significant effect of social media users' perception of social fatigue due to difficulty controlling their self-use of social media. There was a positive and significant effect of social media users' difficulty in controlling the amount of time they spent browsing social media based on their difficulty in controlling the amount of time they spent browsing social media, which resulted in social fatigue from prolonged social media use. The concept of not being able to control one's use of social media is akin to being addicted to online games. It is necessary to replace the prolonged use of social media with other forms of recreation, such as exercise or fun, to distract the user's mind from the prolonged use of social media and to relieve social fatigue.

This study hypothesized that the results of the H2 study would indicate that there is no positive significant effect of social fatigue experienced by social media users on social media syndrome. Based on the fact that social media users do not use social media for a period of time, which causes anxiety to the user, the user does not experience social fatigue. Therefore, social media users had no significant positive effect on the social fatigue experienced by social media syndrome. Social media users do not get social fatigue from not using social media for a period of time because they spend their time on leisure activities such as traveling, playing, etc. Instead of focusing their minds on social media, social fatigue is not visible.

This study hypothesized that the results of the H3 study indicated a positive and significant effect of social media users' perception of social fatigue on their social relationships with social media. Social media users have a positive and significant impact on their social relationships with real-world friends, as they often spend less time with their significant others (family, friends) when using social media. Social media users should allocate time for family, friends and significant others to get along with each other rather than indulge in social media to relieve social fatigue; Social fatigue can also be minimized by sharing tips on using social media so that they feel engaged, rather than ignored.

The results of this hypothesis H4 study indicated that there was no positive and significant effect of social media users' perception of social fatigue on social media performance. Based on the fact that social media users do not often neglect their work or study performance when using social media, social media users have a positive but not significant impact on social media performance. The use of social media did not affect the level of social fatigue on the self's performance at work and may have been the result of concentrating on work while working, as focusing on work did not make the user feel socially fatigued.

This study hypothesized that the results of the H5 study indicated a positive and significant effect of social media users' perception of social fatigue due to inappropriate content management in social media. Social media users perceived a positive but significant impact of social media content mismanagement based on the fact that social media users were often concerned about annoyance, surprise, and other content on social media, and the negative aspects of social media caused users to feel social fatigue. Social media operators should detect and remove inappropriate content from the text or content of social media users. If you report pornographic postings or other indecent content, you will be rewarded with a reward for reporting them, which maintains the social media culture and provides a good environment for users to use social media, while relieving social fatigue.

This study hypothesized that the results of the H6 study indicated a positive and significant effect of social media users' perception of social fatigue due to a lack of privacy control over social media. According to the negative aspects of social media users' use of social media, the lack of privacy control over social media will positively and significantly affect social fatigue due to the inability of social media to protect users' privacy. Social media operators should effectively control users' personal information, such as preventing hackers from accessing the database system and stealing users' personal information, so that users no longer have to worry about their personal information. The lack of privacy control prevents users from exposing too much information about themselves to social media to reduce the level of social fatigue they feel.

This study hypothesized that the results of the H7 study indicated that social media users' perceptions of social media opinion conflict were positively and significantly affected by social fatigue. According to the social media users, social media users may use social media by posting inappropriate comments. The negative aspects of social media cause social media users to feel social fatigue, so social media users' opinion conflicts on social media positively affect social fatigue. Social media is a platform for free speech, and every user can express their own opinion. If social media can manage inappropriate users, such as by banning them, it will reduce conflicts of opinion and social fatigue.

This study hypothesized that the results of the H8 study indicated a negative and significant effect of social media users' perceived social fatigue on their level of self-tolerance of social media use. Based on the negative and significant impact of social media users' tolerance for self-induced social fatigue due to increasing time spent using social media, tolerance for time spent using social media was found to be negative and significant. Tolerance is a mind-blowing experience in itself, and social fatigue will increase the longer you use social media, so social media companies should work with online game companies to develop window games that will interest social media users. For example, in the past, MSN or Instant Messenger allowed users to play mini-games with online friends in the course of chatting, which could help reduce social fatigue.

5.2 Management Implications

This study explores the relationship between the negative aspects of social media and social fatigue based on users' use of social media. It is hoped that this study will provide the academic and practical community with a deeper perspective on how to use social media in a way that avoids the negative aspects of social media that lead to social fatigue. Summarizing the results of the empirical analysis of this study, the following recommendations are made.

This study found that users will feel social fatigue due to the negatives of social media is established, it is clear to learn that if the negatives of social media are lower, the less social fatigue will be experienced by social media users. However, the rise of social media in recent years has led to an increase in the negative aspects of social media, and many social media users have stopped using social media. Therefore, we can infer that social media users will experience social fatigue due to the negative aspects of social media, making users gradually reject the use of social media.

Therefore, we can give different recommendations for managers, users, users' relatives and friends, etc., in that order:

- For managers: We need to think about how to mitigate the negative aspects of social media so that users are less socially fatigued and more likely to use social media. The primary focus is to protect the privacy and personal information of the user's social media, to keep that information inviolate, or to keep it from being exposed to other users, and to enhance the intention of using social media.
- For adult users: we should develop strategies to reduce social fatigue among users, for example, setting a time frame to avoid prolonged use of social media can help relieve social fatigue as adults are better able to manage themselves. If targeting child users: We can help the child set a schedule or teach the child the advantages and convenience of using social media, accompany him, guide him in the right way, and remain calm and respectful instead of jumping to conclusions and over-sensitizing the child.
- For the user's family and friends: We should help users not to become too addicted to social media use, for example, through outdoor activities to enhance the emotional connection between the user and the social media user, and to temporarily detach the user from social media use. The games can also be used to reduce social fatigue, e.g., at the dinner table, by centralizing smart devices and punishing the first person to use social media, which makes the games fun and allows users to bond with each other.

5.3 Research Limitations and Future Research Directions

This study aims to investigate the negative factors of social media, using respondents' use of social media on the Internet as the target population, and to obtain the convenience of sampling data, a random Internet survey was conducted. Although this study strives to be rigorous, time and manpower constraints may result in a narrow range of data sources and under-representation of data. In light of the above, this study suggests that subsequent researchers can separately investigate users' perceptions of social fatigue for different negative aspects of social media. By distinguishing between students and non-students, the relationship between social fatigue can be compared with that of Yamakami's (2012) study. In addition, this study examines social media as a whole using only the negative factors of social media and SNS fatigue as the main variables. If different variables such as IS Continuance Intention and Satisfaction can be added in future studies, the whole research topic can be improved.

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The Role of Financial Development in Economic Growth of Nepal: ARDL Approach of Cointegration with Structural Break Analysis

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Abstract
This paper, using the most recent index of financial development as developed in Svirydzenka (2016), examines the role of financial development in the economic growth of Nepal. This paper employs the Autoregressive distributed lag (ARDL) approach of cointegration with the structural break in time series data for the period of 1980-2017. Nepal is a unique country with a population of about 30 million with high demographic dividend and big markets in the neighbours, the earlier entrant in the liberalization and reform in the region, endowed with lots of natural resources and beauties, and comparatively cheaper labor force in the region but it remains as one of the poor landlocked developing countries sandwiched between two emerging economies, namely China and India. The results show that financial development has a strong long-run positive relationship with economic growth. Therefore, developing the strategies for the proper financial development improving the financial institution quality and widening the financial market to improve capital formation would be a way to accelerate the economic growth in Nepal.

Keywords: Financial Development, Economic Growth, ARDL Cointegration with Structural Break

JEL: C23, O16, O40, O41

1. Introduction

The role of financial development in economic growth is widely discussed in the literature of finance and development economics. It is said that financial development lubricates the economic activities to boost the economic growth in a country. The role of financial development is not found unique in all countries' cases. The literature suggests that the role of financial development in different countries are found of three types. The first, positive impact of financial development in economic growth, second negative role of financial development in economic growth. The literature in the second group suggest that financial development is the result of economic growth, and it does not contribute to economic growth. The third is that the role of financial development is ambiguous, that is, not aggressive role of financial development resulting neither significantly positive nor negative role in economic growth. These findings are based on different countries' experience. In this background, the role of financial development in economic growth of Nepal, a landlocked developing country, has not been investigated systematically yet. This background motivates this study to identify the role of financial development in economic growth of Nepal.

Nepal is a unique country for country specific case study as it represents the group of landlocked developing countries and lagging behind even having lots of natural beauties and resources with in the country, large markets in the closed neighbor, comparatively cheap labor force with high demographic dividend, sandwiched between two emerging large economies-India and China, and evergreen suitable climate for agriculture. Notably, Nepal is an earlier entrant in the liberalization and reform policy not only in the regional context, but also in the global context as it started reform since the mid-1980s as prescribed by the international financial institutions, donor agencies and development partners.

Conventionally, it is believed that liberalization and reform support for financial development and trade performance to boost the economic growth (Ramesh C Paudel, 2016). Nepal has a new government elected recently, which seem to be stable government of Nepal after very long time in the history, and it has put forward a high target for the economic growth in the years to come. But still Nepal is struggling in many respects of the development. These scenarios seek the urgent attention to whether the role of financial development is contributing positively for economic growth or not in Nepal.

The proxies of financial development were always a matter of confusion and choice among the variables, i.e., De Gregorio and Guidotti (1995) uses the ratio of bank credit to the private sector to gross domestic product (GDP) while Levine (1997) suggests the aggregate measure of overall financial system. In this background, Svirydzenka (2016) constructed a single index of financial development analyzing the overall financial development issues and variables. This index has removed the confusion on choosing the appropriate proxies for financial development. The index is constructed using the data for financial institutions and financial markets which are synthesized from financial depth, financial access, and financial efficiency for their respective areas. Therefore, this study would be the first of its kind in the Nepalese context using the time series data. This index covers the data for the period of 1980-2017, thus we cover the same period in the empirical analysis using the autoregressive distributed lag (ARDL) approach of cointegration with structural break analysis. The advantage of using ARDL approach is that provides the long-run and short-run coefficients despite the different order of cointegration of the variables.

The major aims of this paper are of two folds. First, to document the financial development scenario in the Nepalese context, then to investigate the role of financial development in economic growth of Nepal so that a more credible results can be obtained for the better policy inferences. Major findings from this paper suggest that financial development index (FD) has a strong long-run relationship indicating that a one index point (one percent increase in index) of financial development (FD) causes to increase the GDP on average by about 3.50 percentage. Also, the finding suggests that improving the financial institution and financial market to increase the capital formation may be a good strategy to accelerate the economic growth in the country.

This article is divided into six sections. The following section highlights the financial development in Nepal analyzing the issues and trends with brief historical context about the financial development. In section three, a brief literature review is presented followed by a discussion on research methodology in Section four. The estimated results have been discussed and interpreted in Section five before concluding in Section six.

2. Financial Development in Nepal: brief history, issues and trends

If we look at the history of the financial development in Nepal, we find the country has passed through various milestones in the financial sector development process. Following other countries' trends, Nepal's formal financial sector begins with the commercial bank, that is, Nepal Bank Limited was established as a first bank in 1937. This bank was established by the investment from both government and private sector with the share of 51 % and 49

% respectively. The second milestone was the establishment of the Central Bank of Nepal, namely Nepal Rastra Bank, in 1956 (Acharya, 2003; Maskay & Subedi, 2009). From the same year Nepal started first 5-year development planning system which paved the ways to flourish the financial sector. Until the mid-1980s Nepal had two commercial banks, two development banks, two insurance companies, Security Exchange Center, Employees Provident Fund, and the Credit Guarantee Corporation. These organizations were established during the early 1960s and mid-1980s when Nepal started financial reform and liberalization process. By the time of the restoration of democracy in 1989/90, these institutions were focused in the urban areas of the country.

Since the mid-1980s, particularly since the restoration of the democracy, the financial sector has been expanded due to the implementation of various measures of the financial liberalization, such as, removal of entry barriers in 1984, introduction of prudential norms in 1988, establishment of credit bureau in 1989, strengthening of the government owned commercial banks in 1991 onward, reform in capital market, enactment of development bank Act in 1996, Revision of Nepal Rastra Bank Act 2001/02 and many other efforts (Shrestha, 2005). Nepal's constitution has recognized the cooperative sector as one of the pillars of Nepalese economy. This has helped to flourish the cooperative sectors and institutions all over the country. All these efforts have contributed to flourish financial sectors' activities in the country.

If we look at the issues in the financial development and economic growth, we find many studies in the literature suggest that financial development has a positive contribution economic growth. Gupta (1984) highlights the positive role of financial development in economic growth for the period of industrial revolution, and other many studies have followed the similar findings, such as, Jayaratne and Strahan (1996) and Luintel and Khan (1999). There are some studies that suggest some proxies of financial development have positive contribution in economic growth, and also some proxies may have negative association with economic growth as discussed in Liu and Hsu (2006) and Perera and Paudel (2009).

The established link to contribute in economic growth by financial development is through motivating various factors of production. For example, a well-managed and developed financial sector provides sufficient working capital, financial information, knowledge and innovative ideas to the entrepreneurs so that the output of a nation can be increased to contribute in economic growth (R. C. Paudel & Jayanthakumaran, 2009; Shrestha, 2005).

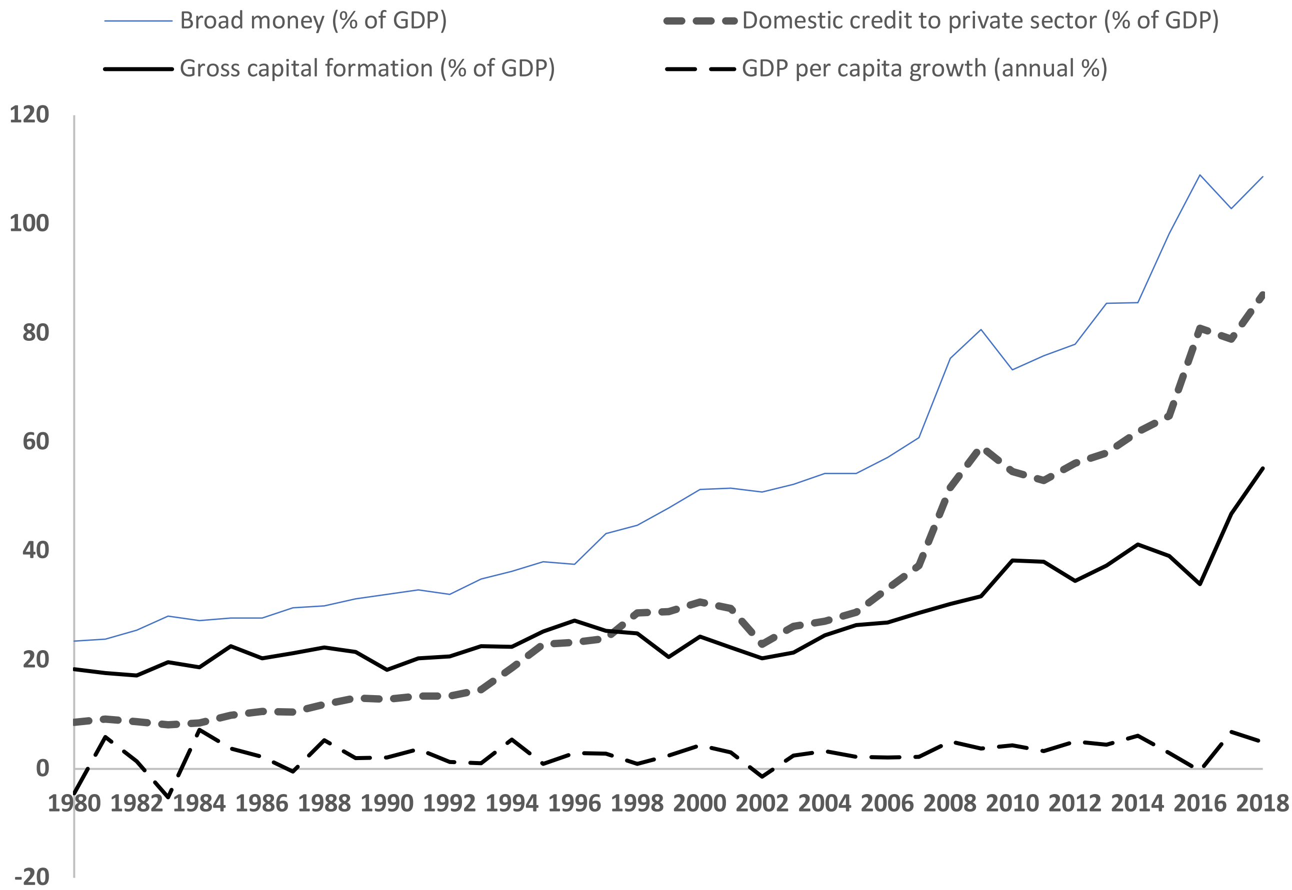
Another link is said to be the policy context to motivate the factors of production. We find many recommendations of policy reforms in developing countries for the speedy economic growth. The branch of literature suggests that the more open and liberal economic policies promote economic growth. Notably, financial development and financial reforms are interrelated (R. C. Paudel, 2007). Nepal is one of the earlier entrants into the liberalization reform policies in the region, but its economic growth has not met the expectation of the policy makers and stakeholders. This has become the major issue in the economic development of Nepal, and the country is facing a challenge to meet the sustainable development goals (SDGs) by 2030 (Government of Nepal, 2019).

Because of the reform policy adopted by the country, the banking sector has grown quite remarkably. As a result of this, total of 27 commercial banks are active and performing well. This number itself is not small and their profits are reported increasing over the years. Almost all, total of 739 out of 753, local governments have banking facilities available in the locality. Even in those 14 out of banking access have the access of finance and microfinance accesses (Nepal Rastra Bank, 2019).

Figure 1 shows a trend of financial developments indicators and economic growth in Nepal for the duration of 1980-2018. As it can be seen in the figure, the broad money and domestic credit to private sector have followed almost similar trend over the period except for few years after 2002 where outmigration from Nepal picked up. Domestic credit to private sector declined in the early 2000 due to political turmoil in the country that results a shortage of labor forces due to outmigration and unstable political circumstances. It gradually increased when political turmoil was ended by the comprehensive peace agreement between the government of Nepal lead by major political parties and Nepal Communist Party (Maoist) in 2006 (Hachhethu, 2009). The broad money also has been increased significantly from the same period. The domestic credit to private sector has overshoot the gross capital formation since 1997, when the region was affected by the Asian financial crisis. This shows the weak integration of Nepalese economy with the other economies in the region.

Whatever the situation of broad money, domestic credit to private sector and gross capital formation in the country, the per capita growth remained very low during this entire period. Nepal achieved the highest growth rate, that is, 7 percent in 1985, for the given duration it remained less than 7 percent. It was recorded 6 percent in 1981 and 7 percent in 2017 again while the growth was recorded negative in 1980, 1983, 1987, 2002 and remained zero growth in 2016 just after the two exogeneous shocks, i.e., devastating earthquake and undeclared trade blockade in the Indian border in 2015. The average growth for this entire period is just remained at 3 percent, which is the major concern of the policy makers and other stakeholders in the country.

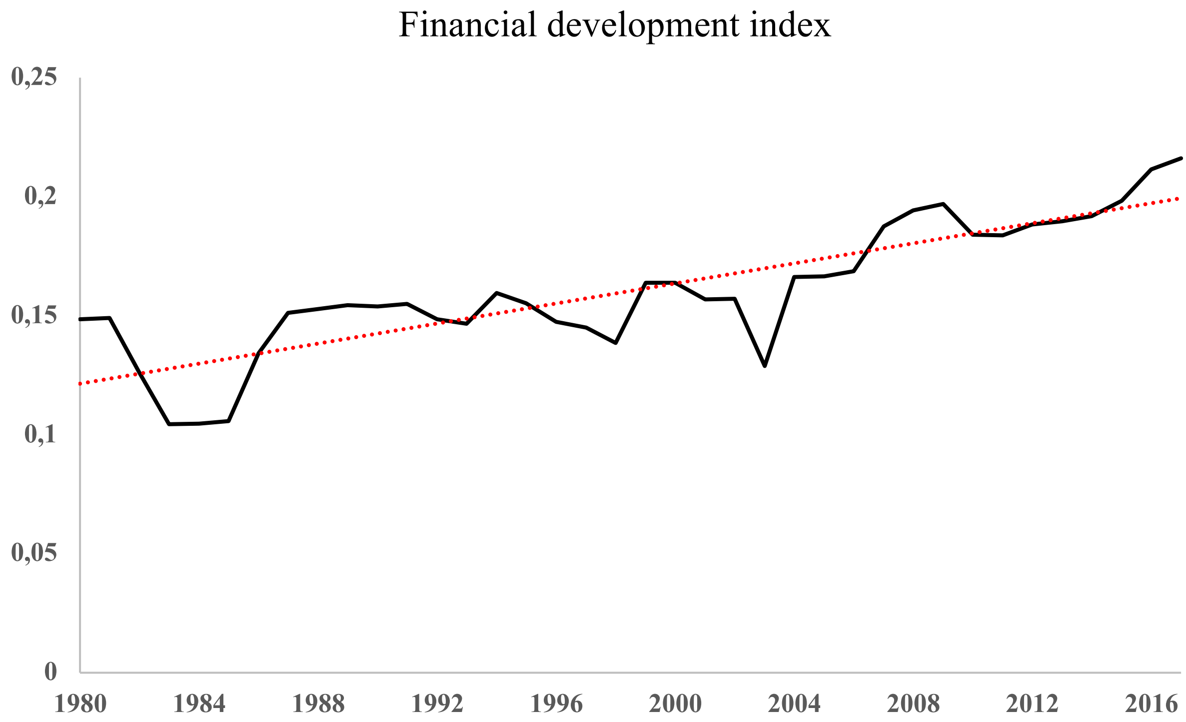
Figure 1: Financial development indicators and economic growth, 1980-2018



Source: author's presentation using the data from World Bank (2020)

As discussed in the introduction, Svirydzenka (2016) has developed financial development index of Nepal analyzing the overall financial development issues and relevant variables. She uses the principal component analysis for financial institution depth, financial institution access and financial institution efficiency to get financial institution scores. Similar process is repeated to obtain the financial markets scores, then, a single index for financial development is constructed. This index is presented in Figure 2 for the duration of 1980-2017. The figure shows that it has been increasing trend over the period, but the progress is too slow as indicated by the fitted trend line. The index has many fluctuations in many years, such as during the mid-1980s it declined and remained in the lowest point, and again was in the lower point in 2003. The maximum is in 2017 with 0.22 scores.

Figure 2: Financial development index for Nepal, 1980-2017



Source: author's presentation using the data from Svirydzenka (2016)

3. Brief literature review

Financial development and its association with economic growth are widely discussed in the literature both qualitatively and quantitatively. Probably the first organized study in the modern field of financial development is Bagehot (1873) that has established the role of financial sector in economic development and has explained the issues related with the financial system of that time, and this was largely a qualitative analysis. Schumpeter (1934) links the entrepreneurial initiatives to economic development. Similarly, Goldsmith (1969), McKinnon (1973), and Shaw (1973) explored the relationship between financial development and economic growth considering the role of financial system, financial intermediaries, and overall financial sector in many ways. Since then, the financial development and its role in economic growth has been widely discussed and covered in the literature of development and financial economics in various form and conclusions.

The large body of the literature is related with how financial development impacts to economic growth. In this regard, Levine (1997) states that a growing body of empirical analyses from firm-level studies, industry-level studies, individual country-studies, and cross country comparisons, employing various method of studies, clearly demonstrate a strong positive relationship between the financial system and long-run economic growth. However, this is not always the case if we look the studies after that period. Arestis and Demetriades (1997) study the relationship between financial development and economic growth using the cross-country regression and time series method to estimate the macro variables of different countries. They suggest that financial development leads the economic growth. They also suggest that time-series analyses show more consistent results than cross-country regression method. Further, Acaravci, Ozturk, and Acaravci (2009) state that the debate in this field of studies are in broad issues: first, whether financial development results a faster economic growth, and the second, how financial development affects economic growth.

Our major concern in this study is whether financial development cause to economic growth. Considering this concern, I notice that most of the empirical literature in this issue can be classified into three broad categories. The first category is that conclude the leading role of financial development in economic growth or development. The second view suggests the financial development follows economic growth, even in some cases, the relationship between financial development and economic growth is ambiguous. It means if the economic development is there, the financial development follows the growth. In other words, first growth then only financial development. Sometime the financial development may have inconclusive role on economic growth. The third view finds a negative correlation between financial development and economic growth. For example, Gupta (1984) highlights the positive role of financial development in economic growth for the period of industrial revolution. Jayaratne and Strahan (1996) and Luintel and Khan (1999) and many other many studies have followed the similar findings. There are some studies that suggest the negative association with economic growth, depending on the proxies of financial development, as discussed in Liu and Hsu (2006) and Perera and Paudel (2009).

In the empirical analyses, various methods have been used. These studies use cross sectional data, panel data and country specific time series data. These studies have selected the method to suit the context of the studies. For example, Estrada, Park, and Ramayandi (2010) find the positive effect of financial development in economic growth using the data of 125 countries in the format of both cross sectional and panel data analysis techniques. Hassan, Sanchez, and Yu (2011) study using panel data from the low-income and middle-income countries and find the positive and strong relationship between financial development and economic growth. And, the method used in this study is Similarly, Choong and Lam (2011) study about the financial development using the data for 70 developed and developed countries for the period of 1988 to 2002 and found that the role of financial development is prerequisite for the foreign direct investment inflows to the country, which is known as one of the source of economic growth in the modern era. This study uses Generalized Method of Moments (GMM) panel data analysis in the panel data. Recently, Durusu-Ciftci, Ispir, and Yetkiner (2017), using the panel data for 40 countries for the period of 1989-2011, suggest that fostering the financial development in the country helps to accelerate the economic growth.

There are many studies that are focused of country specific cases using timeseries data for different periods. For example, Asteriou and Price (2000), using the timeseries data from the United Kingdom, suggest that there is a causal direction from development of the financial sector to the real per capita gross domestic products employing cointegration and causality tests.

Thangavelu and Jiunn (2004) investigates the dynamic relationship between financial development and economic growth using Vector autoregressive (VAR) model approach and suggest that financial markets have positive role in economic growth while the economic growth has a causality with financial intermediaries in the case of Australia. Liang and Jian-Zhou (2006) studies the relationship between financial development and economic growth covering the period of 1952-2001 for China. The study uses VAR model and suggest the causality runs from economic growth to financial development and contradicts with the conventional findings, i.e., causality from financial development to economic growth.

Soukhakian (2007) studies using Japanese data for the period of 1960-2003 employing Granger causality tests and suggest that financial development proxied by the broad money causes the economic growth in Japan. Majid (2007) employs ARDL approach to cointegration and finds the long-run relationship between economic growth and financial development as proxied by financial depth. Ang and McKibbin (2007), using the time series data of Malaysia for the period 1960 to 2001, find the positive relationship between financial development and economic growth but the causality is from economic growth to financial development, that is, financial widening and financial deepening are the consequences of economic growth. As in the Chinese case discussed in Liang and Jian-Zhou (2006), Chakraborty (2008) finds in the case of India that causality runs from growth to financial development employing granger causality tests.

Perera and Paudel (2009), using the time series data for the period of 1955 to 2005, employs vector autoregression (VAR) approach and error correction model and conclude that financial development does not boost the economic growth in the case of Sri Lanka. Adelakun (2010) explored the relationship between financial development and economic growth in developing country Nigeria. Econometrically, the Ordinary Least Square Estimation Method (OLSEM) was used to analyze the data. The result showed the financial development has a strong positive role in economic growth. The Granger causality test revealed the financial development accelerates the economic growth, at the same time evidence of causality showed the economic growth promotes financial intermediaries. In conclusion financial development, including financial diversification serves economic growth.

In case of Nigeria, there is strong positive relationship between financial development and economic growth (Adelakun, 2010; Balago, 2014). Lawal, Nwanji, Asaleye, and Ahmed (2016) suggest, in the Nigerian case using ARDL approach of cointegration, that financial development and economic growth has two-ways causality. A recent study in the case of Bangladesh, Kabir and Halder (2018) find that the causality from financial development to economic growth using data from 1977 to 2016. The paper uses the Vector error correction framework and granger causality tests.

There are very few studies about the financial development and economic growth issues of Nepal. Regmi (2012) examines the causal relationship between stock market development and economic growth employing the time series data for the period of 1994-2011 and suggest that stock market development has a significant contributed to the economic growth of Nepal.

Gautam (2014) examines the relationship between financial development and economic growth in Nepal using the time series data for the period of 1975 – 2012 employing Granger causality tests and concludes that there is a strong relationship between financial development and economic growth. Timsina (2014) uses Johansen cointegration approach and error correction model covering the data for 1975-2013 and finds the positive effects of bank credit to the private sector in economic growth. Recently, Ramesh C. Paudel and Acharya (2020) investigates the nexus of financial development and economic growth of Nepal using various five indicators (broad money, domestic credit to private sector, total credit from banking sector, capital formation, and foreign direct investment) of financial development in the context of Nepal covering the period of 1965-2018 and concluded that the four indicators except the foreign direct investment cause to accelerate economic growth. We aim to improve Paudel and Acharya (2020) in two broad senses; first, we use a composite index of financial development as developed in Svirydzenka (2016) so that we can find out the total impact of financial development in economic growth. Second, we use more advance method of estimation employing the structural break analysis in the time series data in addition to the unit root tests. Thus, the findings would be more credible.

The brief literature survey suggests the literature gap in three two points. First, there is not a unique index to measure the financial development. Therefore, past studies have used various measures to proxy the financial development depending on data and their perception. The study in the Nepalese context of financial development and economic growth seek urgent attention from scholars to make a credible study suing a unique index for financial development. Second, an analysis using a complete procedures of time series analysis has not been made in the Nepalese context in relation to the financial development and economic growth. These facts motivate this paper.

4. Research Methodology

Financial development is the result of the positive change in many areas of the financial sectors, which include financial institution (supply sides) and financial markets (demand and supply sides). In the literature, we find various proxies of financial development are used due to the lack of sing index to represent the overall financial development situation in the region, country or states. Economic growth is a long-term phenomenon and is the combined efforts of the factors of production, which include, but not limit to, capital, labor force, and technology. In the modern economy, the issue of economic growth is a complex matter as the number diverse factors may be contributing for economic growth in many ways. Therefore, the variables used for modelling the economic growth are not unique.

The original Solow-Swan growth model as discussed in Solow (1956) has been augmented to include the main variables of the interest of the researchers. This paper uses the variables based on growth literature including working aged population, capital formation, financial development index as developed in Svirydzenka (2016), and a macroeconomic variable-inflation. The robustness check of the results is made employing alternative specifications of the model. To know the timeseries properties of the data, first the structural break test is performed before going to the econometrics.

4.1 Model, variables and data

This paper employs Solow-Swan growth model that has widely been used in the economic growth literature. In this paper for the modelling purpose, I follow the standard literature related with financial development and economic growth as in King and Levine (1993). Our model mainly differs from King and Levine (1993) in terms of using the proxy for financial development.

Gross domestic product in the natural log form (LGDP), the dependent variable, is employed as the proxy of economic growth. The independent variables are financial development index (FD), working aged population in the natural log form (LWAPOP), gross capital formation in the natural log form (LGCF), and inflation measured by consumer price index measured in percentage (INFCPI) as in the equation (1) form:

$$LGDP_t = \alpha + \beta_1 FD_t + \beta_2 LWAPOP_t + \beta_3 LGCF_t + \beta_4 INFCPI_t + \epsilon_t \dots\dots\dots\dots\dots(1)$$

Where, α is a constant term, $\beta_1 \dots\dots \beta_4$ are the coefficients of the variables, ϵ is the error term, *t* refers to the time period, i.e., year as we are using the annual data for the period of 1980-2017. Based on the literature, we expect β_2 and β_3 to be positive and want to test the coefficients of β_1 as the literature has shown various cases in different countries context. The coefficient for β_4 can be both, i.e., either positive or negative. In both cases it has the economic interpretation in the literature if it comes to be significant. Normally, the production (capital) sector prefers the positive rate of inflation, while if the growth is from labor dominant then the negative coefficient of β_4 is preferred. The FD would be replaced by financial institution (FI) and financial markets (FM) in the alternative specifications of the model.

The data used in this empirical analysis are collected from the world development indicators as given in World Bank (2020) except for FD, FI and FM which are collected from Svirydzenka (2016), which introduced a new broad-based index of financial development of 183 countries for the year 1980-2017. She synthesized the financial development indicator (FD) from financial institution (FI) and financial markets (FM). Also, the FI and FM are obtained employing the principal component analysis (PCA) from financial market depth, financial market access and financial market efficiency for both (FI and FM).

4.2 Structural break analysis

It is a kind of mandatory to conduct the unit root and structural break tests on time series data. The reason is that if there is a structural break point and is ignored in the time series analysis, it may lead to a wrong and inferior inference for the policy recommendation. There are number of methods for unit root test with and without structural break. Noting this importance of structural break analysis, in this study, the structural break test is conducted employing Gregory and Hansen (1996) test for cointegration.

Here, H0: no-cointegration at the break point
H1: there is cointegration at the break point

Table 1 shows the results for structural break using Gregory-Hansen method. The results for all specifications of model shows that there is a structural break only with intercept shift detected at 5 percent level of significance, and the structural break year is 1999 based on both augmented dicky fuller (ADF) and Z_t statistics where the lags are chosen by the Bayesian Information Criterion (BIC). It would be better to have similar results by all statistics but could not ignore even the H0 is rejected in only one model with intercept shift that suggest the cointegration, that is, there exhibits stable properties in the long only with structural break. Hence, further econometric estimations are conducted assuming the structural break in 1999 for all estimations.

Table 1: Structural Break Analysis, Gregory-Hansen Cointegration Test

Models (FD)	ADF		Z_t		Z_a	
	Statistics	***Break Year***	*Statistics*	***Break Year***	*Statistics*	***Break Year***
Intercept Shift	-5.60**	1999	-5.68**	1999	-35.27	1999
Intercept Shift with trend	-5.25	1999	-5.35	1999	-33.82	1999
Intercept shift with slope	-5.91	1992	-5.99	1992	-38.33	1992
Models (FI)						
Intercept Shift	-5.68**	1999	-5.76**	1999	-35.65	1999
Intercept Shift with trend	-5.25	1999	-5.36	1999	-33.84	1999
Intercept shift with slope	-5.78	1992	-5.56	1992	-37.78	1992
Models (FM)						
Intercept Shift	-5.61**	1999	-5.69**	1999	-35.44	1999
Intercept Shift with trend	-5.26	1999	-5.33	1999	-33.68	1999
Intercept shift with slope	-5.92	1999	-5.98	1992	-38.35	1992

Note: 1) **indicates the variables are significant at 5 % level of significance.
2) The results detect year 1999 has a structural break as indicated by *ADF* and *Zt* results at 5% level of significance

4.3 Econometrics

Once the structural break analysis is done, the standard procedure is to conduct the cointegration test to find out the coefficients to explain the relationship among the dependent and independent variables. As we have the time series data with structural break and order of integration is different, the variables included in the equation (1) will be analyzed using a co-integration test based on autoregressive distributed lag (ARDL) approach and it gives the long-run and short-run relationship among the dependent and independent variables irrelevance of the order of their integration (R. C. Paudel & Jayanthakumaran, 2009; Pesaran, Shin, & Smith, 2001).

Therefore, the equation (1) will be modified as in equation (2) to incorporate the structural break (SBDUMY) and its interaction with independent variables. The SBDUMY takes the value 0 until the year 1998 and 1 after then. Notable point here is that for the short run, the structural break becomes out of story. Therefore, the dummy variable and interaction with independent variables are not to be included in the ARDL model for error correction model (ECM) version.

$$\begin{aligned} LGDP_t = {} & \alpha + \beta_1 FD_t + \beta_2 LWAPOP_t + \beta_3 LGCF_t + \beta_4 INFCPI_t + \beta_5 SBDUMY_t + \beta_6 SBDUMY_t * FD_t \\ & + \beta_7 SBDUMY_t * LWAPOP_t + \beta_8 SBDUMY_t * LGCF_t + \beta_6 SBDUMY_t * INFCPI_t \\ & + \epsilon_t \ldots\ldots\ldots\ldots\ldots (2) \end{aligned}$$

The ARDL version of Equation (2) is presented in equation (3):

$$\begin{aligned} \Delta LGDP_t = {} & \alpha + \beta_1 LGDGP_{t-1} + \beta_2 FD_{t-1} + \beta_3 LWAPOP_{t-1} + \beta_4 LGCF_{t-1} + \beta_5 INFCPI_{t-1} + \beta_6 SBDUMY \\ & + \beta_s IND * DUMY_{t-1} + \sum_{i=1}^{38} \gamma_i \Delta LGDP_{t-i} + \sum_{i=1}^{38} \delta_i \Delta FD_{t-i} + \sum_{i=1}^{38} \theta_i \Delta LWAPOP_{t-i} \\ & + \sum_{i=1}^{38} \varphi_i \Delta LGCF_{t-i} + \sum_{i=1}^{38} \lambda_i \Delta INFCPI_{t-i} + v_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3) \end{aligned}$$

where, β_s refers to the coefficients of each interaction term of dummy variable and independent variable ($IND * DUMY$). Equation (3) captures the dynamic impact in the form of Auto Regressive Distributed Lag Model. In the model, Δ stands for the first order differential variable. In the equation, α is intercept, β_1, β_2, β_3, β_4 *and* β_5 are the coefficients of first order variables. Similarly, γ_i, δ_i, θ_i, φ_i *and* λ_i are the parameters of error correction model, and v_t is vector of random error.

5. Results and discussions

Table 2 presents the long-run relationship results for the growth model of different specifications in column (1), (2) and (3). In the similar fashion, Table 3 presents the results for ECM model. These tables show the long-run and short-run coefficients of ARDL with different lags as shown in their headings for the given model. Schwartz-Bayesian Criteria (SBC) is selected due to relatively small size of the series. In both tables, the first column presents the results for the model with financial development index (FD), the second column present the results with financial institutions (FI) and the third column presents the results with financial market (FM). In all the specifications for the long-run relationship, the F-statics (Bound) results show that the values are higher than that of upper bound of the critical value indicating that the long run relationships exist in all 3 specifications.

The results in Table 2 show that financial development index (FD) has a strong long-run relationship indicating that a one index point (one percent increase in index) of financial development (FD) causes to increase the GDP on average by about 3.56 percent holding other variables in the model constant (Column 1, Table 2) at 1 percent level of significance. Against the normal expectation, it can be summarized that the working aged population-the proxy of the labor force-does not have the statistically significant impact in economic growth in this case, however, it has the expected positive sign.

The gross capital formation has a statistically significant impact on economic growth of Nepal. A one percent increase in the gross capital formation contributes to growth the economic by almost half percentage on average, holding other variables in the model constant– coteries peri bus. It supports the voice that Nepal is in need of capital to inject in the economy in many ways. Against our normal expectation, the role of FD after the break point, i.e., since 1999 seems negative and statistically significant as seen for Structural break year*FD in the column (1) in Table 2. The variables such as inflation and other interaction term do not have any statistically significance in the model.

The results in column (2) and (3) of Table 2 also have almost similar explanation as of column (1) of the table. The FI and FM both maintain the significance level at 1 percent. The working aged population (LWAPOP) has statistically significant positive impact as expected in these cases but at 10 percent level of significance.

Table 3 presents the short-run results. In all three specifications, ECM (-1) are statistically significant with expected negative sign indicating the disequilibrium that occurred in the previous period is corrected in the present period following a short-run shock in a quicker pace if the coefficients are closed to one. We did not find that impressive impact of the variables in the short run. The variables such as FD (-2) and FI (-2) have statistically significant negative impact in economic growth unlike in the long run.

The high value of R-square shows that the overall goodness of fit of the model is high. The diagnostic test results show that the model passes the tests for serial correlation, functional form, normality and heteroscedasticity. Further, the stability test results (CUSUM and CUSUMSQ) plotted against the critical bounds of 5 percent level of significance are within the range, indicating that the model is structurally stable (Figures 3, 4 and 5).

Table 2: ARDL (2 2 2 2 2 0 0 0 0 0) model long run coefficients Results

Dependent variable: GDP growth in log (LGDP)	**(1)**	**(2)**	**(3)**
Financial development index (FD)	3.564*** (1.062)		
Financial institution (FI)		2.069*** (0.563)	
Financial markets (FM)			4.022*** (1.539)
Working aged populations-log (LWAPOP)	0.375 (0.334)	0.522* (0.314)	0.627* (0.368)
Gross capital formation-log (LGCF)	0.422*** (0.115)	0.356*** (0.117)	0.478*** (0.125)
Inflation-consumer price index-%(INFCPI)	-0.005 (0.005)	-0.006 (0.005)	-0.002 (0.005)
Structural break year (Dummy)	-16.268* (9.031)	-17.607** (8.574)	-12.487 (11.179)
Structural break year*FD	-2.380** (1.141)		
Structural break year*FI		-1.728*** (0.668)	
Structural break year*FM			-3.379* (1.731)
Structural break year* LWAPOP	0.890 (0.681)	0.898 (0.639)	0.674 (0.828)
Structural break year*LGCF	0.101 (0.132)	0.163 (0.125)	0.075 (0.146)
Structural break year*INFCPI	0.004 (0.005)	0.008 (0.005)	-0.001 (0.006)
Number of observations	*36*	*36*	*36*
Root MSE	*0.03*	*0.03*	*0.04*
Log likelihood	*87.01*	*90.41*	*79.94*
R-squared	*0.90*	*0.92*	*0.85*
Adjusted R-squared	*0.78*	*0.82*	*0.68*

Note: ***, ** and * indicate that the statistics are significant at 1%, 5% and 10% level of significance. The figures in the parenthesis are the standard error.

Table 3: ARDL (2 2 2 2 2 0 0 0 0 0) model, ECM Results

Dependent variable: ΔGDP growth in log (ΔLGDP)	**(1)**	**(2)**	**(3)**
LGDP (-1)	-0.053 (-0.152)	0.019 (0.143)	0.054 (0.177)
FD (-1)	-0.722 (-0.641)		
FD (-2)	-1.435** (0.591)		
FI (-1)		-0.139 (0.360)	
FI (-2)		-0.674** (0.292)	
FM (-1)			-0.597 (1.107)
FM (-2)			-0.506 (1.003)
LWAPOP (-1)	-1.386 (3.047)	-1.700 (3.221)	-1.560 (3.970)
LWAPOP (-2)	-1.205 (3.744)	-0.189 (3.378)	-0.511 (4.762)
LGCF (-1)	-0.158 (0.117)	-0.165 (0.117)	-0.252* (0.134)
LGCF (-2)	-0.077 (0.087)	-0.090 (0.812)	-0.124 (0.114)
INFCPI (-1)	0.004 (0.004)	0.003 (0.003)	0.002 (0 .004)
INFCPI (-2)	-0.001 (0.003)	-0.002 (0.002)	-0.001 (.003)
ECM (-1)	-0.982*** (0.206)	-0.986*** (0.191)	-0.987*** (0.267)

Note: ***, ** and * indicate that the statistics are significant at 1%, 5% and 10% level of significance. The figures in the parenthesis are the standard error.

Figure 3

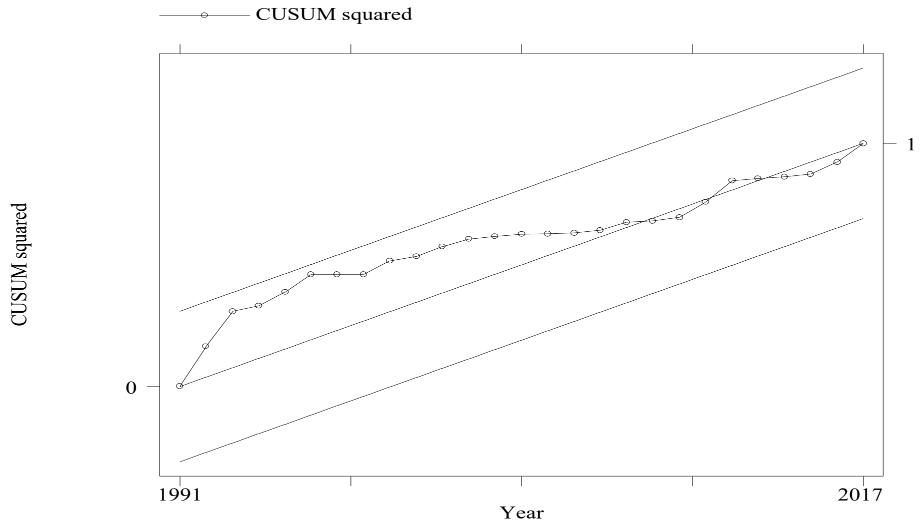


Figure 4

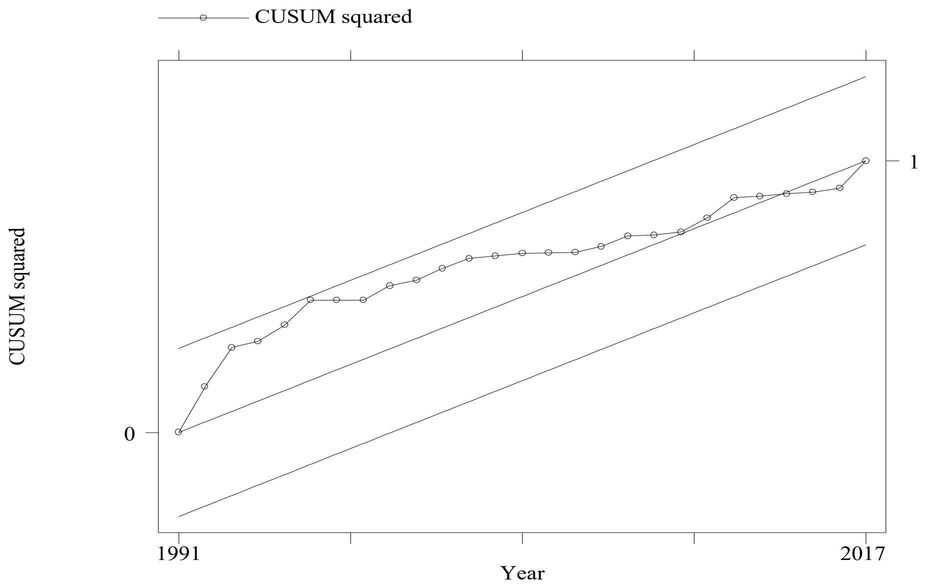
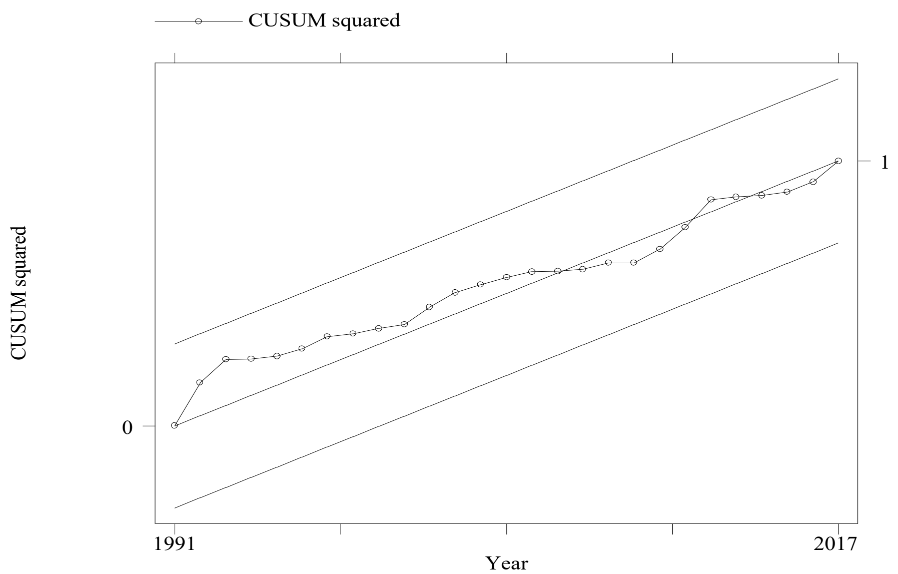


Figure 5



6. Conclusions

This study documents the brief history of financial development touching the main issues and trends of the financial development in Nepal, and then proceed to investigate the role of financial development in economic growth of Nepal using the ARDL approach of cointegration with structural break analysis employing a comprehensive financial development indicator for the period of 1980-2017. After conducting the structural break tests, we estimate the model to detect the long-run and short-run relationship among the dependent and independent variables in the model.

As the interactive variables with break year dummy are negatively associated with the financial development, financial institution and financial markets variables, there is the room to improve the overall governing of the financial sector. The activities after the break year, i.e., from the early 2000s, in the financial sectors need to be corrected in such a way to motivate the economic growth. All the banking and financial products needed to be designed to suit the production activities and entrepreneurship environment so that more output, thus employment can be possible in the economy to foster the economic growth.

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The Herding and Overconfidence Effect on the Decision of Individuals to Invest Stocks

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Abstract
Investors should reasonably transact their stocks. Unfortunately, not all of them are cogent. They make decisions based on some people's suggestions, such as friends, colleagues, family members, and overconfidence. This study attempts to test and analyze the effect of overconfidence and herding on investors' decision to transact their stocks. This study's population is the investors in the investment gallery, becoming the partner of *PT Sinar Mas Sekuritas*, in Maranatha Christian University. The investors become the samples taken by a simple random sampling method, and their number is calculated by the Slovin formula with the 10% border of inaccuracy. Based on this formula, the total investors are 74. Unfortunately, only 50 investors participate in this online survey; therefore, the response rate is 67.57%. Consequently, the structural equation model (SEM) based on variance suits the method to test data. After examining two proposed hypotheses, overall, this study concludes that overconfidence is the only determinant having a positive effect on the decision to invest.

Keywords: individual investors, overconfidence, stocks, the decision to invest, variance-based SEM

I. Introduction

The capital market contributes to the economy of the nation. This contribution gets associated with two functions. Firstly, the capital market is the source of funds for companies (Husnan, 2015) to invest to gain profits and reduce joblessness (Darmadji & Fakhruddin, 2012). Secondly, the capital market is the connector facilitating people to invest their funds in its various instruments (Sunariyah, 2011). One of them is the shares, becoming the most favorite one for investors (Panji & Pakarti, 2006) because of dividends and the change in price as the attractiveness (Sunariyah, 2011).

The change in stock price occurs because of demand and supply power (Sunariyah, 2011). Before transacting the stock in the market, investors must collect and analyze information (Natapura, 2009). However, not all investors do so. Without adequate information, they select to follow others to invest; this is called herding. This fact is proven by Ghalandari & Ghahremanpour (2013), Khalid, Javed, & Shahzad (2018), Mahanthe & Sugathadasa (2018), and Qasim, Hussain, Mehboob, & Arshad (2019).

Also, overconfidence, as the other inclination in the capital market, influences the market participants' decision to invest. This situation gets affirmed by Wibisono (2013), Alquraan, Alqisie, & Al-Shorafadi (2016), Riaz & Iqbal (2015), Bakar & Yi (2016), Khan, Azeem, & Sarwar (2017), Jannah & Ady (2017), Khalid et al. (2018), Mahanthe & Sugathadasa (2018), Setiawan, Atahau & Robiyanto (2018), and Malik, Hanif, & Azhar (2019).

Unfortunately, these two behaviors still show the various effects on investing stocks by conferring those previous research results. Related to herding behavior, for example, the study of Ghalandari & Ghahremanpour (2013), Khalid et al. (2018), Qasim et al. (2019) affirms a positive effect. Conversely, the study of Mahanthe & Sugathadasa (2018) confirms a negative. Also, the study of Gozalie & Anastasia (2015), Alquraan et al. (2016), Bakar & Yi (2016), and Setiawan et al. (2016) cannot prove it.

Similarly, interconnected to the overconfidence, for instance, the study of Wibisono (2013), Alquraan et al. (2016), Riaz & Iqbal (2015), Bakar & Yi (2016), Khan et al. (2017), Jannah & Ady (2017), Khalid et al. (2018), Mahanthe & Sugathadasa (2018), Setiawan, et al. (2018), Malik et al. (2019) shows that self-confidence positively affects this decision to invest. On the other hand, the study of Zacharakis & Shepherd (2001) displays a negative effect exists. Additionally, the study of Wulandari & Iramani (2014) and Gozalie & Anastasia (2015) do not exhibit this effect.

The contradiction of this previous evidence stimulates this study by exhausting the investors in the investment gallery at Maranatha Christian University. Because of the highest transaction value, this gallery got the best award from Indonesia Stock Exchange in 2016 (Bursa Efek Indonesia, 2017) and 2017 (Pelaku_Bisnis, 2018). This award to this gallery directly shows that the investors inside actively make the decision-related to the stocks.

1.1. Some-related concepts

1.1.1. Decision to invest

Investment is capitalizing funds by postponing the current consumption to get wealth in the future (Hartono, 2017). According to Tandelilin (2010), the basis for investment decisions covers two aspects. Firstly, the expected return from the invested funds: the compensation for the opportunity cost of inflation, causing a decrease in society's purchasing power. Secondly, the risks that must be taken by investors. Investors preferring risk will place their money in risky investments, followed by its high expected return, and vice versa.

Besides, the increase in investors' wealth becomes another basis for an investment decision (Christanti & Mahastanti, 2011). Furthermore, this wealth gets reflected by the stock return components: capital gain and dividend (Hartono, 2017). The stock intended has to be easily traded by investors and is issued by a profitable firm (Arrozi & Septyanto, 2011).

1.1.2. Herding

Herding is the contemplate of Keynes (1936), who equalizes human beings to animals in their instinct: they always follow what their group does. Moreover, herding is broadly defined in the investor behavior context by Chang, Cheng, & Khorana (2000), and Qasim et al. (2019). According to them, herding is the imitation of one investor to follow the others without a reliable strategy (Qasim et al., 2019); hence, this becomes irrational behavior (Chang et al., 2000). Additionally, Kumar & Goyal (2015) explain that individual investors tend to execute this strategy, unlike institutional investors.

1.1.3. Overconfidence

Overconfidence is the prejudice associated with how investors assess their limited ability and knowledge. Investors with this perspective feel more well-informed than others (Shefrin, 2007). When individuals become overconfident, they will overemphasize and wrongly estimate their potential investment return. They excessively trade their stocks because they believe their information differs from the others and keep holding risk tolerance despite the high risk of investment (Asri, 2013).

1.2. Hypothesis Development

1.2.1. The herding effect on the decision to invest

The herding is where one investor follows the other investors without steady strategy supports (Qasim et al., 2019) because they cannot find clear facts in the market (Fityani & Arfinto, 2015). Individuals with this behavior easily invest the money in the stocks, as the study of Ghalandari & Ghahremanpour (2013), Khalid et al. (2018), and Qasim *et al.* (2019) describe. By indicating this information, the second hypothesis is like this way:
H_1: Herding makes individuals decide to invest.

1.2.2. The overconfidence effect on the decision to invest

Self-confidence is the bias of the way of the investors to evaluate their ability and knowledge limitation. Investors with this bias admit to having better ability and knowledge (Shefrin, 2007). Consequently, they are likely to invest, as the study of Wibisono (2013), Alquraan et al. (2016), Riaz & Iqbal (2015), Bakar & Yi (2016), Khan et al. (2017), Jannah & Ady (2017), Khalid et al. (2018), Mahanthe & Sugathadasa (2018), Setiawan, et al. (2018), and Malik et al. (2019) display. By standing for this information, the second hypothesis is like this way:
H_2: Overconfidence makes individuals decide to invest.

II. Method

2.1. Research Variables

The variables utilized in this study, i.e., herding, overconfidence, and the decision to invest, are latent. Hence, they need deriving until the measurement process is over.

a. The first variable is herding. Mentioning Sarwar & Afaf (2016), it has three indicators: HERD1, HERD2, HERD3. Their content is in Table 1.
b. The second variable is overconfidence. According to Sarwar & Afaf (2016), it has seven indicators: OCD1, OCD2, OCD3, OCD4, OCD5, OCD6, and OCD7. Their content is in Table 1.

Table 1. The content of indicators for herding and overconfidence

Explanatory Variable	Indicator
Herding	HERD1: I confide in the information from my friends.
	HERD2: I confide in the information from my colleague.
	HERD3: I confide in the information from the members of my family.
Overconfidence	OCD1: I can create a favorable investment in the past.
	OCD2: I can predict the future of the stock price.
	OCD3: I entirely have the capital market knowledge.
	OCD4: I am determined to assess the stock price in the portfolio.
	OCD5: I am bold to invest when the stock market index is in the opposite direction.
	OCD6: I always invest the stocks by my best thinking based on the experience.
	OCD7: I am interested in investing stocks in the capital market.

c. The third variable is the decision to invest (DTI). Alluding to Sarwar & Afaf (2016), DTI consists of two dimensions, i.e., satisfaction (SAT) and efficiency of skill (ES). Both of them own four indicators, as displayed in Table 2.

Table 2. The content of indicators for each dimension of the decision to invest

Dimension	Indicator
Satisfaction	SAT1: I am satisfied with my investing way. SAT2: My decision helps me to achieve my investment goal SAT3: I have already made the right decision to invest. SAT4: I can catch a higher stock return more than a market return based on my investment decision.
Efficiency of skills	ES1: I make all my investment decisions by myself. ES2: I believe that my skills and knowledge about the market help me get more returns than the market return. ES3: I can anticipate the movement of the market return. ES4: I think through all the possible factors to make the investment decision.

2.2. Population and Samples

The 290 individual investors in the investment gallery of Sinar Mas Securities in Bandung located in Maranatha Christian University become the study population. Furthermore, the Slovin formula in the first equation with a 10% boundary of fault (e), by referring to Suliyanto (2009), acts to obtain the total samples (n) reflecting the total population (N).

$$n = \frac{n}{1+Ne^2} \quad \text{(Eq. 1)}$$

By indicating this formula, the total samples are: $\frac{290}{1+(290*0.10*0.10)} = \frac{290}{3.9} = 74.35 \approx 74$. Moreover, we use simple random sampling to take them.

2.3. The method to collect the data

This research uses a survey method to get the data. According to Hartono (2012), the data get collected by the questionnaire distribution in this method in this method. By considering the practical aspect, we distribute it online. Furthermore, the investors get asked for selecting one of 5 points of the Likert scale, starting from 1 (strongly disagree) until 5 (strongly agree).

As a result, 50 investors join the survey; the response rate is: $\frac{50}{74} x100\%$ = 67.57%. This rate is satisfactory because it is larger than 20% as the minimum rate required by Sugiyanto et al. (2018) for the online survey.

2.4. Method to analyze the data

In this study, the structural equation model (SEM) based on variance becomes the method to analyze the data. This model's utilization is due to the unobserved variables and the total samples between 30 and 100 (Ghozali, 2008). Additionally, this intended model is in equation two.

$$DTI = \gamma_0 + \gamma_1 HERD + \gamma_2 OCD + \zeta \quad \text{(Eq. 2)}$$

The validity and reliability test are essential because of employing dimensions and indicators. To perform the validity test, we use the confirmatory factor analysis in the variance-based SEM. To determine the valid answer of the respondent, we compare the loading factor (LF) of each indicator with 0.5 as the cut-off by following these rules explained by Sholihin & Ratmono (2013):

- If the LF is higher than 0.5, the answer of respondents to the indicator is valid.
- If the LF is the same as or lower than 0.5, the answer is invalid; therefore, eliminating this indicator is mandatory.

To perform the reliability test, we utilize the composite reliability coefficient (CRC) analysis. To determine the consistency of the valid answer to each indicator, we compare the CRC with 0.7 as the cut-off value by following these rules explained by Sholihin & Ratmono (2013):

- If CRC is higher than 0.7, the respondents' valid answers are consistent; hence, this study already accomplishes the reliability test.
- If CRC is similar to or lower than 0.7, respondents' valid answers are not consistent; hence, this study does not attain the reliability test.

III. Results dan discussion

This section informs two things. The first is the result covering the statistics describing demographic features (see Section 3.1), the validity and reliability test of each variable (see Section 3.2), the estimation of variance-based SEM (see section 3.3), the hypotheses test (See Section 3.4). The second is the discussion based on the hypotheses test result (See Section 3.5).

3.1. The result of the descriptive statistics

The statistic to describe the categorical data is frequency based on gender (see Table 4), occupation (see Table 5), age range (see Table 6), the last formal education (see Table 7), and monthly range of money earned (see Table 8).

- Table 4 presents the respondents based on gender participating in this survey. The total males are 35 (70%), and females are 15 (30%).

Table 4. The number of respondents based on gender

Gender	Total	Percentage
Male	35	70
Female	15	30
Total respondents	50	100

Source: Primary data processed

- Table 5 describes the number of respondents based on their occupation: college students (CS) and private company employees (PE) take the top two in domination; their totals are 26 (52%) and 16 (32%), respectively.

Table 5. The number of respondents based on their occupation

Occupation	Total	Percentage
Auditor	1	2
Banker	1	2
Lecturer	2	4
The employee of the private company	16	32
The employee of the government institution	1	2
Consultant	1	2
Entrepreneur	2	4
College student	26	52
Total respondents	50	100

Source: Primary data processed

- Table 6 depicts the number of respondents based on the age range. The distribution of respondents owning age is as follows.
  A. The total respondents between 20 and 29 are 42 (84%),
  B. The total respondents between 30 and 39 are 6 (12%);
  C. The total respondents below 20 and above 39 are 1 (2%), respectively.

Table 6. The number of respondents based on the age range

Age Range	Total	Percentage
Below 20	1	2
Between 20 and 29	42	84
Between 30 and 39	6	12
Above 39	1	2
Total respondents	50	100

Source: Primary data processed

- Table 7 displays the number of respondents based on the last formal education. The total respondents owning a bachelor's degree is 26 (84%), graduated from senior high school is 17 (34%); the rest have a master's degree with a total of 6 (12%) and a doctoral degree with a total of 1 (2%).

Table 7. The number of respondents based on the last formal education

Last formal education	Total	Percentage
The senior high school graduate	17	34
Bachelor	26	52
Master	6	12
Doctor	1	2
Total respondents	50	100

Source: Primary data processed

- Table 8 exhibits the number of respondents based on the monthly range of money earned. The total respondents possessing an income below 3 million rupiahs is 26 (40%), between 3 and 6 million rupiahs is 12 (24%), between 6 and 9 million rupiahs is 11 (22%); between 9 and 12 million rupiahs is 6 (12%), and above 12 million rupiahs is 1 (2%).

Table 8. The number of respondents based on income range

Income Range	Total	Percentage
Below 3 million rupiahs	20	40
Between 3 and 6 million rupiahs	12	24
Between 6 million and 9 million rupiahs	11	22
Between 9 and 12 million rupiahs	6	12
Above12 million rupiahs	1	2
Total respondents	50	100

Source: Primary data processed

3.2. The result of the validity and reliability of each variable

Table 9 shows the loading factors and composite reliability coefficient for the herding indicator. In this table, the loading factor of HERD1 is 0.908, HERD2 is 0.940, HERD 3 is 0.893, respectively. Because these values outdo 0.5, the answer of the respondents for this each indicator is valid. Likewise, the CRC of three accurate indicators is 0.938, higher than 0.7 as the required cut-off value so that the answer of respondents to three indicators is consistent.

Table 9. Loading Factor of Herding Indicator

Indicator	Loading factor	Description
HERD1	0.908	Valid

Table 9. Loading Factor of Herding Indicator

Indicator	Loading factor	Description
HERD2	0.940	Valid
HERD3	0.893	Valid
CRC	0.938	Consistent

Source: Warp PLS 3 modified Output

Table 10 illustrates the loading factors and composite reliability coefficient (CRC) for overconfidence indicators. In this table, the final loading factor of OCD2 is 0.759, OCD3 is 0.815, OCD4 is 0.839, OCD5 is 0.692, OCD6 is 0.678, and OCD7 is 0.552. Because these values outdo 0.5, the answer of the respondents for this each indicator is valid. Likewise, the CRC of three valid indicators is 0.870, higher than 0.7 as the required cut-off value; therefore, the respondents' answer to six indicators is consistent.

Table 10. Loading Factor of Overconfidence Indicators

Indicator	Initial Step		Final Step	
	Loading factor	Description	*Loading Factor*	Description
OCD1	0.202	Invalid	n.a.	OCD1 gets removed
OCD2	0.748	Valid	0.759	Valid
OCD3	0.825	Valid	0.815	Valid
OCD4	0.839	Valid	0.839	Valid
OCD5	0.693	Valid	0.692	Valid
OCD6	0.681	Valid	0.678	Valid
OCD7	0.537	Valid	0.552	Valid
CRC	-	-	0.870	Consistent

Source: Warp PLS 3 modified output

Table 11 contains two panels: A and B. Panel A reports the loading factor and composite reliability coefficient for indicators in the dimension of satisfaction and efficiency of skill. Meanwhile, Panel B informs the loading factors and composite reliability coefficient (CRC) for two dimensions.

Table 11. Loading Factor and Composite Reliability Coefficient Related to Satisfaction and Efficiency of Skill Dimensions

Panel A. Loading factor and CRC of Each Indicator of satisfaction and efficiency of skill

The dimension of satisfaction			*The dimension of efficiency of skills*		
Indicator	*Loading factor*	*Description*	Indicator	*Loading factor*	Description
SAT1	0.702	Valid	ES1	0.687	Valid
SAT2	0.865	Valid	ES2	0.816	Valid
SAT3	0.826	Valid	ES3	0.758	Valid
SAT4	0.843	Valid	ES4	0.659	Valid
CRC	0.884	Consistent	CRC	0.822	Consistent

Panel B. Loading factor of each dimension and CRC of the decision to invest

Dimension	Loading factor	Description	CRC	Description
Lv_SAT	0.890	Valid	0.885	Consistent
Lv_ES	0.890	Valid		

Source: Warp PLS 3 modified output

The explanation for Panel A can get seen as follows.

- For the satisfaction dimension, the loading factor of SAT1, SAT2, SAT3, and SAT4 is 0.702, 0.865, 0.826, and 0.843, respectively. These values are higher than 0.5; consequently, the answer of respondents for each indicator is valid. Also, the CRC of four accurate indicators is 0.884, higher than 0.7 as the required cut-off value; therefore, the respondents' answer to these indicators is consistent.

- For the skills dimension's efficiency, the loading factor of ES1, ES2, ES3, and ES4 is 0.687, 0.816, 0.758, and 0.659, respectively. These values are higher than 0.5; consequently, the answer of respondents for each indicator is valid. Also, the CRC of four accurate indicators is 0.822, higher than 0.7 as the required cut-off value; therefore, the respondents' answer to these indicators is consistent.

The explanation for Panel B can get seen as follows.

- The loading factor for the satisfaction dimension (Lv_SAT) and the efficiency of the skill dimension (Lv_ES), is 0.890 and 0.890. Because two values exceed 0.5, they can reflect the decision to invest.
- The CRC of two dimensions is 0.885, higher than 0.7 as the required cut-off value; hence, respondents' answer to these two dimensions is consistent.

3.3. The estimation result of the model

Table 12 presents the result of the variance-based SEM estimation with the probability value of t-statistic for the two path coefficients for HERD and OCD.

Table 12. Estimation result of the variance-based SEM: the effect of herding and overconfidence on the individual decision to invest

Latent variable	Path coefficient	Standard error	t-statistic	Probability value
HERD	0.029	0.142	0.204225	0.419
OCD	0.593	0.144	4.118056	<0.001

Source: Warp PLS 3 modified output

3.4. The hypothesis testing result

The first hypothesis, becoming the alternative one, declares that herding makes individuals decide to invest. This hypothesis gets rejected because the probability value of t-statistic for HERD is 0.419, higher than a 5% significance level. Instead, the null hypothesis stating that herding does make individuals decide to invest gets recognized.

The second hypothesis, becoming the alternative one, declares that overconfidence makes the individuals decide to invest. This hypothesis gets acknowledged because the probability value of t-statistic for OCD is <0.001, lower than a 5% significance level.

3.5. Discussion

Denoting the first statistical hypothesis testing, it infers that herding does not make individuals decide to invest. This evidence supports the result of the study of Gozalie & Anastasia (2015), Alquraan et al. (2016), Bakar & Yi (2016), as well as Setiawan et al. (2018). In this research context, additionally, this situation exists because the investors becoming our respondents do not count on the information from their friends, colleagues, family members. This unbelieving is reflected by the accumulated response of undecided, disagree, and strongly disagree on information from their friends of 66%, colleagues of 52%, and family members of 58% (see Table 13).

Table 13. Total Response of Undecided, Disagree and Strongly Disagree of Valid Herding Indicators

Valid indicator content	Response			Total Responses
	Undecided	Disagree	Strongly disagree	
HERD1: I confide in the information from my friends.	17	15	1	33
	34%	30%	2%	66%
HERD2: I confide in the information from my colleague.	15	10	1	26
	30%	20%	2%	52%
HERD3: I confide in the information from the members of my family.	17	11	1	29
	34%	22%	2%	58%

The number of participating respondents is 50.
Source: The primary data processed

By denoting the second statistical hypothesis testing, it infers that overconfidence makes the individuals decide to invest. Investors, who are frequent to transact their stocks, think they are already so smart that they are brave to take the stock transaction-associated risks. This situation is also fair because they are young and well-educated (Asri, 2013). This evidence is in line with Wibisono (2013), Alquraan et al. (2016), Riaz & Iqbal (2015), Bakar & Yi (2016), Khan et al. (2017), Jannah & Ady (2017), Khalid et al. (2018), Mahanthe & Sugathadasa (2018), Setiawan, et al. (2018), and Malik et al. (2019). In this research context, additionally, this condition happens because their accumulated response of strongly agree and agree on:

a. Their ability to predict the stock price is 52% (OCD2).
b. Their knowledge of the capital market is 42% (OCD3).
c. Their steadiness in evaluating the stock prices in the portfolio is 50% (OCD4).
d. Their boldness to keep transacting against the opposite movement of the market index is 70% (OCD5).
e. Their experience-based thought is 80% (OCD6).
f. Their belief in the attractiveness of the capital market is 92% (OCD7).

Table 14. Total Response to Strongly Agree and Agree on The Valid Overconfidence Indicators

Valid indicator content	Response		Total Response
	Strongly agree	Agree	
OCD2: I can predict the stock price.	3	23	26
	6%	46%	52%
OCD3: I entirely have the capital market knowledge.	4	17	21
	8%	34%	42%
OCD4: I am determined to assess the stock price in the portfolio.	4	21	25
	8%	42%	50%
OCD5: I am bold to invest when the stock market index is in the opposite direction.	7	28	35
	14%	56%	70%
OCD6: I always invest the stocks by my best thinking based on the experience.	7	33	40
	14%	66%	80%
OCD7: I am interested in investing stocks in the capital market.	14	32	46
	28%	64%	92%

The number of participating respondents is 50.
Source: The Primary data processed

IV. Conclusion

This study wants to examine the herding and overconfidence effect on the decision of individuals to invest. After testing and discussing two associated hypotheses; overall, this study deduces that herding does not affect the decision to invest; conversely, overconfidence does with a positive sign. These findings mean the individual investors do not depend on the information from others to decide to invest. Instead, they entrust themselves to do that. As long as it is risky, overconfidence should get reduced because of some reasons. Firstly, the future is uncertain. Secondly, the access and ability of individuals to get information and assess their stock portfolio are more limited than those of the institution. Thirdly, the consequence of getting lost if individuals keep trading against the market movement. Finally, the experience is not repetitive yet in the future.

Academically, this research has some limitations. Firstly, it only utilizes a small number of samples, 50. To fix this limitation, the next scholars need to search for:

a. The individual investors in the investment galleries in Indonesia, becoming partners of securities companies, acting as the population.
b. The individual investors associated with one securities company, distributed in big cities in Indonesia, acting as the population.

Secondly, this research only utilizes two determinants of the decision of individuals to invest. This circumstance allows the next scholars to place the other affecting factors: heuristic, investor competency, experienced regret, risk avoidance, risk tolerance, self-control, market situation, optimistic bias, illusion control, loss aversion, risk perception, conservatism, and cognitive dissonance bias.

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Investigating and Comparing Petroleum Contract Models from Effective Control Lens in Contracts

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Abstract
Selecting the suitable petroleum contract pattern is one of the most sensitive in oil activities after the initial petroleum negotiations, whereas different petroleum contracts have emerged due to the willingness of the host government to grant control and oversight of petroleum activity to the International Oil Company. The right to control effectively is the key to earning more and longer-term profit and impact on project economics for each of the parties. Occasionally, this right to effective control creates a major challenge for host countries and international and transnational oil companies. In the meantime, domestic law requirements play an important role along with the willingness of governments to maintain or grant effective control.

Keywords: Petroleum Contract, Effective Control, Host Country, International Oil Company

1. Introduction

Always determine the contracting pattern of oilfields is very important for host countries, especially when foreign investors and international oil companies are interested to cooperate in these contracts. This is because of the countries' sensitivity to the features and privileges that this mineral can provide to tank owners and products produced from oilfields, such as political, economic, and even military interests in the regional or international arena for oil field stakeholders.

Determining the right to control plays a key role in oil contracts because effective control is important from the point of view that if each party to the contract has sovereign control and control over the contract, it has the ability to control the capital, extracted product, profits as well as the market finally. This in itself creates a high score along with the strategic points mentioned for the controlling party.

Our assumption in this investigation is that one of the main determinants of choosing the type of petroleum contract model is determining which of the parties can obtain effective control over petroleum contracts?

2. Define effective control over petroleum contracts

A review of various legal texts and legal documents shows that there is no complete and independent definition of the right to effective control over petroleum contracts.

From the examination of numerous international judicial and arbitration procedures, it can be inferred that the exercise of the sovereignty and effective control by the contracting parties (host government and foreign investor) of oil contracts depends on the fulfillment of three effective conditions for the International Court of Justice that include :
1. Appointment of Managers (ICJ, 1983) (ICJ, 1986a)
2. Control over the Board of Directors
3. Amount and Percentage of shares (ICJ, 1986b)

In the International Court of Justice view, the appointment of directors and control of the board of directors can be proven and reliable when it is directly ordered by the parties to the contract and included in official documents. It is not a prerequisite for effective control by the host government, whether it is a private or public company if the above condition means the exercise of sovereignty by the government directly.

It should be noted, however, that the appointment of directors and control of the board of directors should not be made because of emergencies, According to Dickson Car Wheel Company Case 669 (Commission, 1931), the Court notes that government has taken control of this company (Dickson Car Wheel Company), But the court declared the Mexican government had taken over the management of the lines to respond to an emergency to control public order and the danger that endangered the country's independence. But the court declared the Mexican government had taken over the management of the lines to respond to an emergency to control public order and the danger that endangered the country's independence and on the basis of this argument there is no responsibility for the Mexican government. Having a majority stake in one of the parties to the contract can be another reason and authority factors for effective control of the holder of the shares.

Accordingly, it can be noted that the Committee on Human Rights (Hertzberg and Others v. Finland, para. 9-1) (UNHRC, 1982) has stated, Because the government holds a majority stake in the company (90%), the company was considered to be under special government control. Another document to examine is the effective control of the internal laws of countries, among the domestic laws of the countries can be mentioned in terms of effective control, Israeli Petroleum Regulations (Principles for Offshore Petroleum Exploration and Production) are approved (2016) (Hukim, 1952a), which one of the issues of the authority to exercise effective control is to have means of control by the company. Including having the right to vote in the company's general assemblies or organs parallel to another company, as well as the right to appoint a director in the company or its general manager or officeholders in parallel to another company (Hukim, 1952b). It is also stated in these Regulations (Control of a Corporation) that Ability to perform actions to guide the company's activities and Rules of Control of a Corporation also defines the ability to perform actions to direct the activity of a company and to participate in a regular partnership, either alone or with others.

It also sets out the rules for expressing one's control over participation has expression, Having half or more of a particular type of control within the company, as well as the ability to make fundamental decisions about the company and partnership, such as petroleum right or the ability to prevent decisions in a particular area (Hukim, 1952a).

The importance of the above classification will become clearer when the ownership rights in the oil activity, each of which has great financial and strategic value, are negotiated between the International Oil Company (IOC) and the host government. The right to control can be examined in several parts of the oil contracting activities and patterns, which are discussed further in the contract patterns.

The survey consists of five general categories:

1. Control over ownership of oil in place or oil reservoirs

2. Control over ownership of oil and oil products
3. Control over ownership of oil in place or oil reservoirs
4. Control over ownership of information and data
5. Effective Control

3. Concession regime

The Concession contract (CA) was the first system adapted to the petroleum industry, and it is still one of the most popular and widely used systems throughout the world (Meuers, 1988).

Professor A.A. Fatouros has been defined a concession agreement; an instrument is between a government and a private person and provides for the grant by the government with an individual of exclusive right or authority that is usually own to the government and expected from it (Fatouros, 1963).

The granting of concessions by the host country (HC) is not mean transfer the owner of a natural resource to the concessioner, but also authorization to IOC for enjoying the exclusive right to operation and marketing (Carlston, 1958).

The Concession is an arrangement whereby the IOCs have granted the right to explore and operate petroleum in exchange for the payment of all costs and also specific taxes related to the operation (Wells et al., 1987).

Under a Concession arrangement, the HC grants the contract holders exclusive exploration rights (exploration license), as well as exclusive development and production rights (lease or Concession) for each commercial discovery. In other words, the term Concession has, in this context, the same meaning as license and refers to a contract between the HC and an IOC granting exclusive rights to the IOC to operation for petroleum within a particular region and for a determinate duration of time. This kind of contract grants ownership rights to oil and gas to foreign oil companies, IOCs also have effective control over operations and associated risks (Al-Emadi, 2010).

The Concession usually gives all producing oil and gas to the IOC, while HC is imposing the commensurately royalty and tax rates.

According to Clause 2.2 of the Brazilian Concession Agreement (Annex I), IOCs must pay:
a) Signature bonus;
b) Royalties;
c) Special participation;
d) Payment of the occupation and retention of the area

The Concession is an arrangement whereby IOC has granted the right to explore and exploit hydrocarbons in exchange for the payment of all operating costs (Capex & Non-Capex) and all specific taxes (Duval et al., 2009). The Concession agreement in the petroleum industry gives the contracted company the HC as the owner and gives him the right to keep the hydrocarbons. The IOCs have exclusive right to explore and produce hydrocarbons, at his own expense and risk, becoming the owner of the oil and gas produced according to the contracts and taxes have been applied.

This is the beginning point of elements evaluation and identifies what are the significant differences between this petroleum contract regime in relation to others.

The main elements in this type of traditional concession contracts (CAs), including:
1. Granting licenses and exclusive exploration rights through a license to an IOC.
2. Payment of royalties, surface rental, and taxes by the foreign investor (IOCs) for the use of this privilege to the HC.
3. The vast territory of the land of the HC has been let under the control of an international investor for oil

operations.

4. The CAs were usually long-term. For instance, Article 3 of the 1980 Abu Dhabi concession provides for a 35-year term. Also, In the 1980s Norway had granted Licenses that during this license were provided for a six-year term with a "period of lengthening" of 30 years (Peter Cameron, 1984)
5. HC's non-interference in operations and lack of facilities for monitoring.
6. Creating an ownership right for the IOCs on reservoirs discovered (Najafabadi, 2014)

Post-World War II developments, factors such as the recognition of the sovereignty of countries over natural resources and the expansion of the nationalization movements of the oil industry led to the creation of a new generation of CAs (Shiravi, 2014).

Generally, in the Concession, the role of HC is to regulate and monitor Exploration and Production (E&P) activities by the IOC.

Usually, developed countries with high technology, expertise, and experience in the oil industry are interested in tax collection systems. For instance, the United States and Norway tend to use the Concession system (Ellsworth, 2005).

A modern score is probably called a "license." In the American legal regime, it is a common practice called this contract lease. Also, terms in the modern system have been modified. For example, the traditional concept of multinational companies that breaking and trampling the rights and interests of indigenous people has not been accepted in the modern world.

The elements that have been changed in the modern system include the parties to the contract, the method of the award, the extent of the rights granted in the contract, the duration of the contract, and the status of government (government takes or oil company takes) this is perspective about the division of benefits, royalty, and tax (Smith, 1991)

The feature of the modern generation of CAs, including:

1. Reduced operational area (blocks) under the control of foreign companies;
   In Norway, in 1988, based on the twelfth issue of licensing of oil products, each company was allowed to operate in independent and small projects in Conoco, Esso, and Elf Aquitaine. Norway's State Oil Company (Statoil), this company had 50 percent participation in petroleum activities to each of the sixteen blocks licensed (Smith, 1991)
2. Restricts the activities of the foreign company to the upstream activities;
3. Reducing the duration of long-term Concession contracts;
4. Cancel IOC ownership of tanks and oil in place;
5. the usage of penalties and the right to cancel the Concession Through continuous inspection by HC ;
6. a plan of development in the areas not utilized;
7. Contractor's commitment to using aboriginal forces, obligation to lease national companies for services and equipment;
8. The requirement of the IOC for training and job creation for workers and indigenous people engaged in the oil industry;
9. Modern contracts usually allow the concessionaire to obtain owns of equipment had installed;
10. After producing and extracting oil, the owner of a concession can obtain ownership of the oil in the at the wellhead;
11. Increased government control and control over oil operations;
12. Increased government receipts from Royalty interest and taxes (Shiravi, 2014);
13. Run split formula based on 50 -50, According to this method, the government receives half of the pure benefits of the company under the name of the tax (madrese alie hoghogh, 2014);
14. Under the United Nations, 1982 Convention on the Law of the Sea ,ownership of hydrocarbons (found in sea or land) is at the disposal of the government ,but if hydrocarbon has found on the continental shelf, the government can only grant the oil company a license under the 1982 Convention (Park, 2013);

15. In the modern system of concessions, they granted a license to the contractor by these methods (competition, individual negotiations, tendering, discretionary licensing). These methods allow sovereignty to consider various factors in choosing an award (Smith, 1991). Most North Sea countries have been using this system (Peter Cameron, 1984). In 1985, at the 9th round of licensing in the UK, it was an excellent example of using these systems. The modern system of concessions has been used in marine areas, especially at a depth of more than 200 meters.
16. "Government take" has several models there, as well as royalties and taxes. Some licenses may contain terms of direct payments such as bonuses and delay rentals payments (Vagts, 2015). The creating requirements for a contractor through licensing for training and employment of workers and indigenous peoples of the HC or the specific technology must have transferred to the HC (Smith, 1991).

Typically, this type of upstream oil contract system is used to explore and develop deep-sea who high-risk fields that require high capital and technology.

The HC or IOCs can adopt many methods for royalty calculation, including pre-tax profit-based royalty total revenue-based royalty, lump-sum royalty, royalties based on reward, etc (Kang, Chao-Chung, Cheng-Min Feng, 2011).

3.1. Control over ownership of oil in place or oil reservoirs

The HC grants a concession to a concessionaire who invests and maintenance control rights and cash flow rights for a period specified in the contract. During this period, the HC has no responsibility for the IOC's profits and losses (Auriol and Picard, 2013). Because the HC has transferred all rights, responsibilities, and the right to effective control over the tank to an IOC, through a CA including ownership of oil has been the hydrocarbons extracted and the right to authorize oil reserves in IOCs books.

This view was based on the fact that the IOC pays the costs, royalties, and taxes to the HC .Instead, the IOC acquires effective control and full ownership of the tank and oil production .The HC does not have access to (ownership) oil, although it is the owner of the land that contains the oil (Al-Emadi, 2010).

However, the modern concession agreement has canceled of IOCs ownership of the tank and oil in place.

3.2. Control over ownership of oil and oil products

A CA is a legal concept, which investor is allowed to carry out activities exclusively in the geographic area concerned under the right to exploration, production, and development of oilfields (Zhiguo Gao, 1994). In the regime of concession, the HC has ownership of oil in place, and the IOCs have only the right to operate within a specified period (Keith Blinn et al., 1986). The IOCs will be the owner of the oil at the head of the wellhead with the exclusive license for exploration, extraction, but IOC must acceptance of all contract risks and pay taxes and royalties to the host government during the contract period (Smith et al., 2010).

According to Article 20, item IX of the Brazilian Federal Constitution and Article 3 of the Law of Oil 9.478/97, one of the main features of the law of Brazil is that hydrocarbons are generally owned by the federal government until they have extracted from the oil Well .When Condensate Oil and Natural Gas have extracted from the subsoil, they become the possession of the IOC.

Federal Constitution -Article 20. The following are the Union's property:
IX - the mineral resources, for instance, subsoil;
Law N. 9.478/97- Art. Three combined with the alterations imposed by Law N. 5.938/09. The (E&P) of petroleum (Crude oil and natural gas), and other Hydrocarbon materials in the pre-salt zone and strategic fields will be contracted by the Federal Union under the regime of Production Sharing, based on this Law (Silva, 2010).
In the modern concession agreement, oil ownership has been determined often divided based on an agreement between the IOC and the HC that, in some cases, the share split is 50 -50.

3.3. Control over ownership of oil in place or oil reservoirs

IOCs, at the end of the contract, must transfer ownership of all equipment and supplies to the host government (Keith Blinn et al., 1986) by means of public interest.

According to the laws of Brazil, ownership of the facility is the holder of the Concession by the licensor until his lease expires. After installation of facilities and equipment may then revert to the HC without compensation for the concessionaire. The IOC possesses the total responsibility of obtaining and the installation of the equipment necessary to carry out the activities. Therefore, the IOC protects the proprietary responsibilities of the facilities and equipment. Under the Brazilian Oil Act, only the return of property and equipment to the government is required to be reversible. This property includes immovable and permanent property as well as movable equipment, existing in any the installment in the area of Concession (Silva, 2010).

Under the Norwegian Oil Act:
The right to revert the property and equipment of the installation apply in the oil activities after the license has also terminated, another condition that the installation facilities and equipment must be in a suitable situation in order to guarantee safe operation also after the property and equipment have returned (Business, 2001)[1]

3.4. Control over ownership of information and data

Indeed the owner of a concession is ownership of the production of crude oil, natural gas, information, and data from the field and reservoir; this ownership has made due to contractual obligations and the requirement to pay taxes and royalty.

3.5. Effective control

Indeed in the Classic Concession, The HC did not right to participate in management and control decisions. IOC has been all of the instruments of legal and contractual and financial to effective control. Accordingly, the IOC must pay HC for the duration of the period, royalty and tax.

In the modern concession system of contracts, the terms of the contracts have been intended to provide for the host government the right to participate in the management or control of oil activity. Usually, the effective control has been utilized at the time of granting the license by shortening the duration of the contract, limited the phases and operating blocks by the HC.

4. Production Sharing Agreements (PSAs)

Production partnership contracts have first used in Indonesia in the agricultural sector. It was later used in the oil and gas industry (Babusiaux, 2007).

PSA is the type of contract between the HC a National Oil Company (NOC) and an IOC or consortium, which allows authorized companies have been qualify to carry out exploration and extraction of oil by the terms of the contract (Pongsiri, 2004).

The benefits of oil production have been divided between the two companies (Barrows, 1988); this partnership in the production of oil between the IOC and an HC will lead to joint ownership of the oil produced by the parties. In this way, the costs and risks of doing so are borne out by both parties (Daniel Johnston, 1994). The authority of the HC has typically based on Exclusive rights; it was based on Legislation on Oil, Gas, & Mines of the HC, which has given to the IOC (Taverne Bernard, 1996).

[1] The Norwegian Oil Act 29 November 1996 No. 72 relating to petroleum activities. Last amended by Act 14 December 2001 No 98, 28 June 2002 No 61, 20 December 2002 No 88, 27 June 2003 No 68, 7 January 2005 No 2, 30 June 2006 No 60 and 26 January 2007 No3, Section 4-3.

One of the main aims of the PSA is to attract multinational companies in the Petroleum Industry, in which they are interested and willing to risk capital and utilize technological expertise to develop the oil tanks in the HC (Silva, 2010). The IOCs, as investors, must have the holders of the necessary expertise. Countries with moderate experience prefer to use PSA due to these types of contracts are simple and require less state control. Often, these types of upstream oil contracts have been used by developing countries in Africa and Central Asia with unstable states and weak rules of law (Ellsworth, 2005).

The host countries, through the utilization PSAs, has been looking for full ownership of technical expertise and effective control over operational skills, production, management and marketing, and related risks, as well as meeting financial needs (Al-Samaan, 1994).

If the IOC succeeds in discovering and producing a commercial field, they can have a share of production and recover all costs and return on the investment (Bindemann, 1999).

The main elements in PSAs include:
1- cost recovery;
2- The division of production between the HC and the IOC;
3- Income taxes.

Oil policies may vary from country to country; most of them aimed at maximizing revenues and minimizing financial risk in oil operations (Silva, 2010).

A variety of methods and mechanisms of the HC could get remuneration in the upstream oil include:
1. IOC must be paid a bonus for certain events specified in the contract;
2. The IOC must pay the operating area rent or the right to maintain the area specified in the contract during the duration of the contract at all stages of operation or production in offshore or offshore;
3. Production royalty;
4. A great benefit to get exclusive rights IOC;
5. Divide oil profits;
6. IOC revenue from fields during the production has a direct impact on profit tax (Silva, 2010)

Usually in the PSA is not expressed the concept and royalty rules because of the issue of ownership. However, there are PSAs with royalties in the financial system. For instance, Article 42 of Law 5938/09 has been approved in Brazil. The HC is allowed to use royalties as revenues to compensate for oil exploration. The royalty mechanism has never been necessary for PSA because the cost recovery constraint mechanism has been guaranteed the income of the HC during the first years of oil production, mainly when the company is benefiting from a position of non-tax (Nakhle, 2008).

In the PSAs, the IOC is entitled to recover costs based on a benchmark and a predetermined proportion of the produced oil; this proportion has been called the cost oil.
In general, PSAs can have divided into two major groups:
1. The first model, The IOC first receives a portion of the production to pay off costs and expenses, Receives a certain percentage of the remaining oil production from the oil field, this model is known as "Indonesian PSAs."
2. The second model, IOC, receives a specified percentage of the oil field production as payment for the costs, expenses, and profit. This model is known as "Peruvian PSAs" (Silva, 2010).

The IOC has the right to receive the share of produced oil (oil cost) to cover investment costs in the HC; these costs include capital costs (Capex) and operating costs. According to the Brazilian Bill of law 5938/08, Production Sharing Contracts (PSCs) ar a "regime of (E&P) of oil, natural gas, and other fluid hydrocarbons" whereby oil companies will have granted rights to explore for, develop and produce petroleum reserves, at their cost. In the event of a commercial discovery, costs incurred will be reimbursed to oil companies through an entitlement to production referred to as "cost oil." The remaining petroleum, after deduction of cost oil, is considered "profit oil."

This profit oil has been shared between the IOC and the HC in the percentages set forth in the PSC (Silva, 2010). According to Brazil Bill of Law 5938/09 –E.M.I n.00038 article 14. 31/08/09 Features of the PSAs include:

1. The IOCs has been accepted all operate risks before beginning the operation and IOCs must be under the supervision of the HC;
2. Responsibility for providing equipment and personnel necessary to carry out operations with IOCs;
3. HC owns all oil and oil products production;
4. the IOC can use the product belongs to the area specified in the contract for recovering their investments;
5. after the IOC has recovered all costs, the remainder of the production will have shared between the IOC and the HC, in proportions previously established in the PSC;
6. The IOC must pay taxes to the host government from their income;
7. The NOC has the authority of the HC to determine the selection of the IOC and particular contract for a specific region and the determined duration of time.

Another feature of the PSA is the issue of the government's effective control over the oil sector, which has an impact on E & P activity and hydrocarbons. The government gains more influence directly or through the NOC for better control and more detailed inspection of oil activities. NOC, on behalf of the government, has the role of regulates and inspects the operations and activities of E & P directly, which can be the operator or not (Silva, 2010).

The main methods of ownership and the amount of oil produced in the system of PSAs are:

1. Ownership of oil in a fixed proportion to the parties to the contract, this system HC has ownership of 85% and IOC ownership of 15% on oil production. For example, Indonesia.
2. Ownership of oil based on progressive share or in daily production or production accumulation, for example, the HC will take a higher share if the progressive oil production.
3. The ownership share of oil produced between the parties to the contract depends on:
   3.1. Operation profitability;
   3.2. Some variables in the contract, for instance, production operations, were onshore or offshore, either oil or gas production, etc (Silva, 2010).

According to Angolan PSAs (the Law 13/2004 for the "Taxation of the Oil-producing Activities) have imposed Special taxes law (the tax income has set to 50%) on the activities of the oil for all national and international oil companies that operate in the territory of Angola.[2] Angola is the only major oil producer in Africa to use the "return rate" as the basis for calculating "oil profits." In other countries such as Qatar, Gabon, and Ivory Coast, this rate is very low and about 30% (Silva, 2010).

Indonesia was the first country to pass the PSAs. Malaysia has been changed the legal, regulatory structures in the first half of 2000. The major alteration has made that regulatory agency to decentralize power Pertamina (the stately belong Oil Company).

The oil profit-sharing system has created in Indonesia that the IOC must split the first 20% of the oil production with the NOC. This system has been called "First Tranch Petroleum" (FTP). The FTP is a way to cost recovery. These changes have removed regulatory and economic responsibilities from the NOCs.
According to Iran's petroleum law of 1957, two types of partnerships with foreigners were possible:

1. An independent Iranian company (a joint venture),
2. Unregistered civic participation (mixed system).

1. In 1957, Iran signed the first PSA with Agip Company (Azienda Generali Italiana Petroli - Italian General Oil Company). The company, ENI, was an Italian agent. This PSA was the type of joint venture (JV) (Mina, 1998).
The Iranian National Oil Company (INOC) was an agent in Iran. INOC and Agip Co have been established as a joint venture. Equal capital was one of the features of this joint venture. This JV is called Societe-Irano-Italienne des Petroleos (SIRIP).

[2] See more, www.minfin/gv .Downloaded 09/2010.

Other features of this JV were: one Iranian was the chairman of the board and also the equal number of board members (SIRIP) in this JV. Each party owns 50 percent of its shares, but the IOC had to pay half of its profits to the Iranian government as taxes, which resulted in the actual share of the profits of each party accounting for 75% to 25%. The share of HC was equal to the total royalties and half of the profit from the sale of oil .As a result, the IOCs held 25 percent of the total oil revenues (Ahmadian, 1999).

The scope of this JV has been determined in three parts of Iran, including in the Persian Gulf, on the eastern slopes of the central Zagros Mountains, and in the coastal region of Oman (NIOC, 2010).

To paragraph C of Article 12 of the JV, that SIRIP must be obliged to supply all oil quantities for sale to the NIOC and Agip before others.

2. The second PSA was signed in 1958 with Pan American Petroleum Corporation. The contract of the National Iranian Oil Company (NIOC) with Pan American Company was mixed participation (Mohebi, 2007). The contract was made up of a nonprofit company called Iran Pan American Oil Company (IPAC). The company (IPAC) has considered as the agent of the parties, and its capital and management were fifty-fifty with each other (Article 3, Contract of the National Iranian Oil Company and Pan American Petroleum Corporation of Corp, 1337). Two areas in the Persian Gulf have been included in this mixed partnership. Ownership of oil production has been transferred at the wellhead. Also, the share was equal to parties .(Article 23-25 of the contract of the National Iranian Oil Company and the Panamerican Petroleum Corp. 1337) (Mafi, 2008).

3. A PSA signed between NIOC and Sapphire Int'l Petroleum Ltd on June 16, 1958; this corporation has been called IRCAN. Under the agreement, the two parties formed a JV for the exploration and exploitation of oil in the Iranian offshore areas and management of the operations. The net profit was to be divided 25 % for Sapphire and 75% for NIOC and Iran. The carrying out of oil operations was in two parts of the Persian Gulf of the continental shelf (Judiciary, 1958) .The general principles of this contract were consistent with the Pan American Agreement. The contract has never been implemented because sapphire Petroleum Co did not do anything to start it (S Ripinsky, 1963).

4. Six contracts were signed in 1965. Profits on these contracts based on the criterion of 25% - 75% have divided between the parties. In this history, it is possible to say that the NIOC has been governed by the Iranian oil industry. Because the contracts of this period were generally contracts for the purchase and sale of Iranian oil. Six contracts were signed with Ashland USA, Agip Italy, CFP France, Altramar UK, and two contracts with German Dummies for areas of Shiraz and Abadan. These contracts were never carried out with the establishment of the Islamic Revolution in Iran (Muhammad and Mohammad Reza, 2007).

5. On December 27, 1971, three contracts were approved by the Iranian parliament. These three PSA contracts have based on the 50-50 formula. Since 1966, part of the consortium was handed over to the NIOC. After that, auctions have been held for those regions, which resulted in the conclusion of three PSA (Rouhani, 1978).

According to the contracts, joint ventures have been created. Bushehr Oil Company (BUSHCO) and Mobil Oil Corporation, a JV company, Hopeco Oil Company. PSA contracts for the exploration period were up to six years. The advantages of the three partnership contracts are: The supply of crude oil needed for domestic consumption has been the priority over crude oil exports.

In the case, if the contracting party does not intend to express your will or plan to operate your share of gas to the NIOC within six months, there will be no contracts right to the gases for them, and all the gas produced will belong to the NIOC (NIOC, 2010).

Among the operational and administrative areas assigned to the NIOC by signing new contracts was including:
Income control and operations such as operational plans and budgets, the Abadan refinery, exploration, and refining operations carried out by the NIOC, before which the NIOC was solely responsible for non-industrial activities and domestic broadcast operations. These changes took the situation as a NIOC, and the adoption of the

second petroleum law in 1974 has occurred in a period close. According to parliament, Law passed the Prohibition of transfer of ownership of oil to IOCs. Moreover, only contracting contracts were allowed as a suitable template for the cooperation of the NIOC with foreign companies to explore development and production (NIOC, 2010).

4.1. Control over ownership of oil in place or oil reservoirs

The system of PSAs has been to attract foreign investment with respect and attention to the preservation of public ownership, PSAs regime has used to attract foreign investment with respect and attention to the preservation of public ownership, and in all PSAs have been mentioned to the owner of oil is HC including the oil in place or the oil reservoirs. Also, in the PSAs, it is possible to get a reserve for fluctuations in the price of oil provides. These reserves are due to maximizing HC share (Zhiguo Gao, 1994) . In PSA, oil and gas always belong to HC; in this way, part of the oilfield production to the IOC will belong based on recovery to the risk of exploitation and investments made in the contract process (Silva, 2010). In a PSAs, IOCs will be able to list only the barrels it keeps. This means that if the contract has determined the share of HC is 60% of oil production, IOC will only be able to book the remaining 40% of oil production.

4.2. Control over ownership of oil and oil products

Oil production has owned by the HC, and the contractor under his supervision performs his duties. The IOC obtains ownership of the share of crude from oil at the point of export of oil. Based on contractual obligations has been created the right to share oil for oil companies.

In other words, as long as the hydrocarbon is underground, it belongs to HC, but when it reaches the wellhead, IOC will be the owner automatically (Bunter, 2002).

IOCs will be owner oil production if:

1. Succeeding to discover the oil field
2. The oil production should be at the limit and percentage specified in the contract.

The IOCs ownership of that percentage oil production, but HC will pay this percentage to IOC (Al-Emadi, 2010).

4.3. Control over ownership of oil in place or oil reservoirs

The equipment used in the project has divided into three categories:

1. Equipment belonging to IOC (service provider) without the possibility of transferring the installations to the government (Daniel Johnston, 1994);
2. Equipment that has been leased or bought by the contractor and they entered the country. This equipment will remain in the ownership of the HC both before and after Exploration and Production (E&P) (Fabricant, 1975); For instance, In Indonesia, the facilities and equipment used by the IOC are automatically transmitted to the HC at the beginning of the operation.
3. The equipment purchased is transferred from IOC to the government after being used in the project. Indeed, the government is the ultimate owner at the end of the contractual period (Keith Blinn et al., 1986); For instance, in Angola, the IOC equipment used in the project must be transmitted to HC at the end of the contract period.
4. Equipment is shared own between the HC and IOC, at one percent of the preset for each section; in the case of a joint venture, facilities and equipment will have transferred to the HC at the end of the contract period (Silva, 2010). For instance, in Venezuela, the JV regime has been approved, IOC's equipment and facilities as long as they are active, but they must transfer all installations and equipment to HC at the end of the project. One of the features of the PSCs is this at the termination of a contract must be transferred all the facilities and equipment to HC, at no extra charge. An example of this can have noted in the case

of Angola.[3] Also, article 57 of the "Law of Oil Activities" (Law 10/2004, of 12 of November of 2004) expresses clearly that, at the time of the termination of the contract, all of the equipment, instruments, material, and any other property acquired for the operations during the PSA (Angola, 2004).

4.4. Control over ownership of information and data

In the PSA, all data and information will have owned HC, including all geological information, seismicity, reservoir layout, and ..., in such a way, the oil company must be obliged to submit their reports to the government in their annual reports (Fabricant, 1975).

It has also been mentioned in the other part of the Angola case, all the information on economic and technical nature should have passed to the nation (Sonangol) without any payment or refund (Angola, 2004).

HC is the owner of all of the information acquired through the license or by activities of E&P. as well as IOC permitted to use such information only during the validity of their contract (Article 20 of the Indonesian Oil Act) (Angola, 2004).

4.5. Effective Control

IOCs are responsible for the management and control of exploration and exploitation operations. The full control of the IOC has based on the assumption that the host government does not decide to participate (Al-Emadi, 2010).

5. Service Contracts (SCs)

The first service contracts have signed between 1991 and 1995, Venezuela (1991), Kuwait (1992), and Iran (1995). Subsequently, Iraq, Mexico, Bolivia, Ecuador, and Turkmenistan were also interested in using these types of service contracts. There are two types of well-known service contracts, “Risk Service Contracts” (RSCs) and “Pure Service Contracts” (PSCs). The difference between these two types of service contracts is in the type and method of reimbursement. According to this type of contract, IOCs must carry out a specific duty or technical service for the HC that is provided or completed within a specific period.

5.1. Pure Service Contracts (PSC)
Indeed, the HC contracts with IOCs to carry out a determined service for a flat fee. Service contracts, in general, has been designed to develop oil reserves with risk.

There are two categories of PSC:

a. The service contract running parallel, this type of PSC has not connected purchase contract for part of the oil has produced from the field of operations to which the service contract relates.
b. This type of PSC not accompanied by any access to the oil has been produced under such a contract.

Some of the Persian Gulf countries and companies have used these types of contracts have included:
Saudi Aramco Company has been utilizing the type of a Risk Fee contract for exploration and Net Fee contract for production in this country. Abu Dhabi oil companies use contract type based on per barrel fee plus the right to buy part of its production. In Kuwait, the IOC provides technical support and support to the HC. The oil company will receive a discount on the purchase contract per barrel. Qatar pays for the technical and support services oil company through the produced barrels.

5.2. Risk Service Contracts (RSC)

[3] The Sociedade Nacional de Combustiveis de Angola or Sonangol was created in 1976 as the national oil company of Angola. It is 100% owned by the State and serves as the business arm of the Angolan Government, being responsible for co-ordinating and controlling all petroleum activities. The enactment of the Petroleum Law (Law 13 of 1978) made Sonangol the sole concessionaire for oil exploration and production in the country. (http://www.mbendi.com/cosg.htm, downloaded 01.10.2010)

In short, an IOC agrees to explore a specific region and evaluate its potential for exploration. In RSC, the contractor accepts all costs and capital payments as well as operational risks. All costs will recover through field production. Possibly, in Latin America, these types of contracts are more popular (Coelho Neto, 1985).

The RSCs will be paid to the IOCs if oil operations lead to oil production. Although it does not have access to its production. Some lawyers consider the difference between these two types of contracts based on the type of payment received (for example, profit or fees). The method of remuneration, on the other hand, is either a percentage of the production (in-kind) or a fixed amount (cash) (D. Johnston, 1994).

Service contracts are the types of oil contracts in which IOC has considered as a contractor. In the event of the exploration of a commercial oilfield and the commercialization of oil production to the IOC is entitled to reimbursement of costs and receive profits for investments and services. However, if the oil is not exploration, the contract ends with no payment to the IOC; In this type of oil contracts, international oil companies accept all obligations, including Investing and providing services in the oilfield as well as accepting all financial risks of services in the contract, also They will not lose ownership rights in the oilfield or production of oil and gas. (Mikesell, 1984) Indeed, ownership of oil resources and reservoirs has belonged to the government or NIOC (Smith et al., 2010).

RSCs are similar to production sharing contracts, which means reimbursement of IOCs depends on the production (Rosado de Sá Ribeiro, 2001).

In the service contract, the HC has no control over the operations and has no role in investing. RSCs and PSCs have the same status in terms of operational control and oil ownership. One of the most important features of service contracts is that all petroleum deposits and oil produced have belonged and property of the HC at the wellhead. In this contract system, the IOC never obtain "property rights" in the reservoir. Accordingly, the legal position is similar to the US drilling contractor (Coelho Neto, 1985).

The IOCs act as contractors for the HC and as such, carry out in the name and on behalf of the (NOC), all operations necessary for the exploration and development of oil deposits. Also, the oil company must accept all financial risk. Based on Article 7.1 of the Argentine Risk Service Contracts:

"[t]o provide at its own risk and for its exclusive account the technology, capital, equipment, machinery and any investment that may have required for the due performance of the [c]ontract" (Smith, 1991).[4]

Early examples of SCs have created by Petroleos Mexicanos and Yacimientos Petroliferos Fiscales in the fifties, and by Iran and Iraq contracts in the sixties (Bindemann, 1999).

Service contracts, "the investor provides the entire risk capital for exploration and development, which is reimbursed with interest, in cash or part of the oil produced, if the field proves productive. it is a form of production sharing where the contractor is compensated only upon discovery" (Khan, 1988). The HC has the legal authority to attend in petroleum activities directly through its NOC. Also, HC can choose subcontract companies who have to specialize in E&P activities. At the time of signing a service contract, all risks of the exploration contract have been transferred to the IOC (Silva, 2010).

Article 2 of the 1957 Iranian Petroleum Act was a license for the use of date contracts in 1966 was an authorization for the use of service contracts in 1966.

Article 2 (*New directions in the law* of the *sea*309 (1973)) holds that:

> "[i]n execution of the provisions of this Act, the National Iranian Oil Company may negotiate with any person, whether Iranian or foreign, whose technical or financial competence shall have established,

[4] Risk-Bearing Service Contracts in Brazil, 3 J. ENERGY & NAT. RESOURCES L. 114 (1986)

> moreover, may conclude with such person any agreement which it deems
> appropriate, based on the terms and stipulations of this Act and
> other conditions not inconsistent with the laws of the country" (Judiciary, 1958).

The first service contract was signed between the NIOC and a French government agency (Enterprise de Recherche et d'Activite Petroliere (ERAP)) in 1966. Also, ERAP establishes a non-profit company under the name of the French company of Iran (SOFIRAN). Under the terms of the contract, SOFIRAN was called a general contractor, and it had been specific responsibilities (Article 2). According to article 3 of the contract, (ERAP) was obliged to pay the contractor's fees for financial and commercial technical services. The oil field was part of the Persian Gulf plateau and as well as three-part of the onshore. All oil produced under the terms of this contract will be owned by the NIOC at the wellhead (Article 6).

The second contract was signed in March 1968 between the NIOC and five European state-owned companiesو which have become known as the European Consortium. The sum of these companies was named European Group Oil Companies (EGOCO). In the case of structured ownership, they were utterly similar to the contract with the company (ERAP). Also, the operational area specified in the contract was in the Persian Gulf (Kashani, 2009). The third contract was signed in March 1969 between the NIOC and the American Continental Company.

Later, two other companies joined the second contract. In the triple contracts, the role of oil companies has considered as the contractor. (Rouhani, 1978) The significance of these contracts can have attributed to the fact that it was the basis for the 1974 Petroleum law and the buyback contracts after the revolution in Iran. The 1974 Petroleum law was a comprehensive law passed by the parliament. According to the third paragraph of Article 8 of this law:

The contracting party must establish an Iranian subsidiary. The Iranian company will carry out as the "General contractor" of the NIOC. The General contractor will be responsible for the exploration and development operations in a nonprofit and under the terms of the contract.

In Article 1 (3) of the Petroleum law of 1974, the ownership rights of hydrocarbon resources are as follows:
Iran's Oil resources and petroleum industry has been national. National Iranian Oil Company has the responsibility exclusively as an agency to the state to the governing of Iran's right to Iranian oil resources in the fields of exploration, development, production, exploitation, and distribution of oil throughout the country and the continental shelf. Hence, the NIOC can take action either directly or through its agents and contractors.

In paragraph 2 of Article 3:
The NIOC can enter into negotiations with any person, both Iranian and foreign, in order to carry out exploration and development of oil in the sectors of the country, and the (NOC) must sign contracts as contractual contracts. Therefore, according to this law, the only allowed pattern is the pattern of service contract (contractor). Moreover, from this date onwards, responsibility for approving and authorizing oil contracts from the parliament was delegated to the Council of Ministers.

In Article 19 of the Petroleum law 1974 has been stated about the ownership of the oil in the reservoir, all of Oil produced from Iran's oil resources owned by NIOC, Ownership of the not extracted from oil (In the tank) is not transferable to others by the NIOC.

Therefore, after the passage of the petroleum law in 1974, Contracts were signed under the title of the Sixth Contract of Service. The structure of these contracts was similar to the structure of the three previous contractor contracts. In these six contracts were a party to the NIOC. In all of them, it was stipulated to remain oil owned by the NIOC (Rouhani, 1978).

In this part, l have compared the contracts discussed above:

Table 1: Comparison of Oil and Gas Contracts

Comparison Of Oil And Gas Contracts					
Contract-Type	Effective control of the production of petroleum	Management and supervision	Sharing interests	Major methods of technology transfer	The ownership of the facilities and equipment
Production Sharing Agreements	The contractor has ownership of part of the oil production (shared)	Government (only in regulatory terms)	The profits of the contractor are ownership of the part of the oil produced by the provisions of the contract	Participation and turnkey	ownership belongs to NOC after entering the country or installing equipment
Service Contracts	The host government has ownership of oil production (shared)	Jointly between the government and the contractor	The oil owned by the government and the contractor's cost has paid from the proceeds from the sale	Participation and turnkey	All equipment imported into the country will have done on behalf of the NOC

Table 2: Comparison of Petroleum Contracts

Comparison Of Petroleum Contract						
		Ownership of petroleum resources	Ownership of petroleum production	Control/field Operator	Risk	Compensation to oil Company
Concession contracts		IOC	IOC	IOC	IOC	Not Applicable being Owner
Production Sharing Agreements		IOC/HC	IOC/HC	IOC	IOC /NOC	Profit-sharing with HC
Service Contracts	PSC	HC/NOC	HC/NOC	HC/NOC	IOC has Exploration Risk	Flat Fee
	RSC	HC/NOC	HC/NOC	HC/NOC	HC has full Risk	Flat Fee

5.3. View of Religious Governance - Republican and Constitution from 1979 until now.

The 1979 Revolution against the last Shah of Iran, which led to the establishment of a government focused on religion. This religious structure had a profound effect on all aspects of the system of government & law of Iran. Due to the formation of a new constitution have been creating significant limitations to the participation of the private sector in general, & foreign investors in particular, in economic activities. According to Article 44 of the Iranian Constitution, many sectors of the economy have nationalized (Ebrahimi and Nasrollah, 2006).

Factors such as previous experience in the oil industry during the last years of the Pahlavi regime, the historical roots of service contracts & oil production participation contracts ،as well as the religious structure of Iran's government & constitution are cause led to the emergence of buyback contracts & Iran petroleum contract (IPC) in Iran.

5.4. Constitutions & supplementary laws derived from the religious view

One of the essential principles that have changed with the establishment of the Islamic Republic of Iran & the constitution is the sovereignty & ownership regime of mines. These changes are the basis for the creation of contracts in Iran after the 1979 revolution. Under Article 45 of the Constitution, Anfal[5] & Public wealth & property ..., Mines are in the hands of the Islamic government that utilizes them by the public interest.

According to Article 2 of the Law on Amended Petroleum Law, adopted by the Parliament on February 22, 2011, all oil resources are Anfal & public wealth. By Article 3 of the Act: The Supreme Council for Oversight of Oil Resources, Responsible for monitoring the exercise of sovereignty & public ownership of oil resources. Ownership of oil resources is Public ownership & private property is not possible & it is not possible to do it for private individuals to own itBy Article 44 of the Constitution, Major mines, including oil & gas, are part of the public sector, which is Public ownership & is at the disposal of the government. The implementation of general policies of Article 44 of the constitution in 2008: Oil & gas mines are part of the economic activities of the "3" group which according to paragraph (c) of Article 3 of the aforementioned law, it is exclusively for the government to investment, ownership & management of activities & institutions in Article 2 Group 3 (Shiravi, 2014). By Articles 2, 3 & 4 of the Mines Act of 1988 & revised in 2011, the concept of sovereignty has separated from the acts of ownership. Mines have divided into four classes. Applying Governance to Mines is in the sense of policing, regulation, & enforcement of them. The Ministry of Industry & Mines issues licenses for the use of mines, which Include exploration licenses & operation licenses. This license has given to individuals or legal entities authorized & competent. In this way, the legislator has tended in its evolutionary process, in the sense of public ownership & the Anfal of mines generally. From religious jurists suggests that there are several theories regarding the ownership of mines, which include: The theory of the separation of mines based on its location, mines (on the surface of the earth) & mines (the depths of the underground).

Mines on the surface of the earth (MSE) (معادن الظاهريه):

Mineral matter is on the earth, & its achievement does not require additional action or cost (Karaki, 1990).
Mines in the depths of the underground (MDU) (معادن الباطنيه):

To determine the nature of the material extracted from the mine requires special operations; this mineral is mixed with other materials to obtain it requires a lot of cost & effort (Al-Shafi al-Sahhir, 2012).

Some of the mines that are apparent such as the spontaneous outflow of oil from the ground, which is located in the lower reaches of the earth, & extraction of these requires the earth drilling; these mines fall into the category of (MDU) (Najafi, 2012).

Ayatollah Khomeini's view is that oil mines are (MDU) (Khomeini, 2013).

In total, oil mines are Anfal & they are at the disposal of the Imam (Islamic leader). The view of the jurisprudential regime has been emphasizing oil & gas mines are the Anfal. & the Islamic leader can allow another for the operation & extraction. This license is granted to another because of the public interest (Abdolrahim Moradi and Ranjbar, 2016).

Based on the interpretation of Jurists, Anfal perspective as Anfal & ownership of Imam on Anfal is due to the position of leadership & community management which is similar to the views expressed in the Common law & modern theories about regarding government ownership of the public property; it has interpreted as administrative ownership. Also, the theory is more compatible with Article 45 constitution (Katouzian, 1999).

With the interpretation provided of Ownership in Anfal, It is closer to the concept of ownership in common. The administration of both the regime (Anfal & the common public) by the Islamic ruler. It has been interpreted (public benefit) in modern rights (Abdolrahim Moradi and Ranjbar, 2016).

[5] In the definition of Anfal, it is said that the property assigned to the Prophet Muhammad & the Imams is called Anfal. The jurisprudential regime says about mine Anfal: 1. Private ownership of the mine is the ban, 2. because of Anfal belongs to the Imam, & Imam’s permission is needed to use them.

Iran's supreme leader Ayatollah Ali Khamenei's statement on the general policies of Article 44 of the constitution & paragraph (c) the date 22/05/2005 & 23/02/2007: It has mentioned in the statement emphasis on the exclusion of Mines oil & gas, from the category of Privatization & private sector investment, especially the upstream sector oil & gas (Behrooz Akhlaghi, 2013).

It was during these challenging years that the United Nations passed its first Statement of permanent sovereignty over natural resources in 1952 (Schwebel, 1963). In another legal resolution, natural wealth has recognized as the national interest of that country in 1962. Because permanent sovereignty over natural resources, in addition to preserving national interests, It also causes safeguard the rights of all future generations & indigenous people, economic & social development, sustainable development, & the right to development, that all are by the principles of the United Nations (Miranda, 2012).

From the analysis of these events, it is clear that in global crises, it was presumed that IOCs would enter such crises & secret oil wars against the interests of HC. So it is a legitimate concern for governments to preserve ownership & sovereignty over oil resources because of their willingness to avoid engaging in a Cold oil crisis. Hence, the tendencies Resource nationalism & the establishment of National oil company's (NOCs) can be considered as a national response to the inappropriate influence of some of the great IOCs that threaten the sovereignty of countries (Madelin, 1974).

5.5. The historical trend of service contracts (contracting) & the emergence of new contractual generations after the 1979 revolution

Iran has a long history of oil contracts. In a classic classification of contracts, include Systems Concessionary, Production Sharing Contracts, & service contracts. The study of Iran's buyback contracts has shown; these contracts have been inspired by the pattern of pre-revolutionary (1979) service contracts. Service contracts have been introduced since the year 1966 in the Iranian oil industry, & since 1974, they have been considered as the only model of the authorized contract of Iran. The pattern of buyback contracts, influenced by three factors: the historical roots of contracts, religious views regarding sovereignty & ownership of the oil, & reform of the constitution after the revolution (Principles of the Constitution, Articles 80, 81 & 44).

After the Iranian Revolution from 1978 to 2018, we have faced with about four decades with two types of contracts based on the three above factors. Including

1. The first three decades - generations of buyback contracts 2- Fourth decade - The emergence of the (IPC) contract.

5.6. The first three decades - generations of buyback contracts

After the victory of the Islamic Revolution, due to the desire of the leaders to views the sources of nationalism, the attitude of the foreign investment relation was considered harmful. During this period, there were many requirements & restrictions on Iranian oil contracts. Between the years 1357 to 1373 were not signed, any contract for the upstream oil & foreign investment was only applicable to the downstream oil contracts sector.

The factors that caused the adverse effects & increased investment risks in Iran include US economic sanctions, executive constraints, & laws of Iran. During the Iran-Iraq War of 1980, the first attempts after the revolution to attract foreign investment to improve oil production (Azadi and Yarmohammad, 2011).

The 1977 Oil Act can have considered as the basis for buyback contracts. It was the beginning of the use of buyback contracts to preserve the principles of religious governance, the constitutional limitations, Annual budget Acts & rules of the five-year development program as well as the Petroleum Law, especially the Petroleum Law of 1987. Finally, in 2011, Article 9 of the Law on the Amendments to the Petroleum Law, canceled the Petroleum Law of 1977.

Permission to use buyback contracts has given in the budget Acts of 1993 to 2000, the rules of the second, third & fourth development plans, as well as the rules of the budget of 2000. The term buyback has first mentioned in the budget Act of 1994, which authorized the NIOC to use it (Ebrahimi and Nasrollah, 2006).

5.7. Generation of buyback contracts

A buyback contract is one of the type's service contracts. In this type of contract, the method of reimbursement of contractor costs is selling products from the field. Methods buyback in Iran is as a Non-borrowing investment method; it is a modified version of the buyback in other countries which conforms to the interests & needs of Iran & motivates IOCs to transfer their capital, technology, & know-how to Iran (Fard and Kavyar, 2010).

Types of buyback Contracts

1- Development or exploration contracts, the main feature is Contract cost has been determined constant & it has considered for the exploration or development of fields.
2- Combined Contract Exploration & Development of fields, Contractor of Exploration Projects will earn to authorize entered into development operations directly & without a new contract if they succeed in discovering the hydrocarbon reservoir (Green Field) & the oil reservoir be commercial. (The maximum cost of the contract has been determined & fixed).
3- Development contracts & Combined Contract Exploration & Development of fields that the amount of the contract will have determined by holding tenders at a specified time after confirming the validity of the contract (Fard and Honary, 2016).

5.8. Ownership & sovereignty in buyback contract

According Article (3) of Iranian Petroleum Law Approved(1974) Oil & gas resources & the petroleum industry have nationalized in Iran, & that all activities include exploration, development, production, distribution of oil & gas & the marketing must carry out exclusively by NIOC throughout Iran, the NIOC must act directly or via its agents & contractors.

IOCs must accept the primary condition in the contract buyback for cooperating in the oil fields of Iran including Condition of Supply & pay all costs of the project Capital costs (Capex), Non-capital costs (Non-Capex), Operating costs (Opex), Bank charges) & accept all operational risks. Finally, the Iranian government will pay off the profits from the production field to the IOC. In Section 3, Paragraph (c), Article 3, One of the Responsibilities & Authorities of the Ministry of Petroleum (2012) in investment & financing:

Attracting & directing domestic & foreign capital to develop hydrocarbon fields with the priority of Common fields via the use of new contractual patterns, including co-operating with investors & domestic & foreign contractors without transferring ownership of oil & gas in reservoirs.

The analysis of these Acts shows that

1- Ownership of hydrocarbons owned by the state until it is in the tank (underground).
1. 2-The ownership of all products resulting from the operation belongs to the NIOC.

By the pattern of buyback contracts, Ownership of oil products in the fields of Iran has been transported to IOCs neither at the wellhead nor at an export point (Ebrahimi and Nasrollah, 2006).

Because the legislator's assumption of buyback contract is a type of service contract. According to Article 153 of the Iranian constitution, any form of the agreement resulting in foreign control over natural resources... . is forbidden. One of the examples of controlling natural reserves is the possibility of booking petroleum products by IOCs. Thereby there is no possibility of booking oil reserves in the assets of IOCs. The first Iranian buyback contract was between the NIOC & an American company (Conoco Oil Co). However, this contract canceled because of the sanctions against Iran by the United States as of President Clinton. The French company (Total SA) accepted the American company under contract with the new terms; it has carried out the first Iranian buyback contract (J.H. and van Groenendaal, 2006).

The Sirri (A) oil field project was the first major project of the type of contract buyback; it was carried out in Iran (Amani, 2009).

5.9. Technology transfer in buyback contracts

1- First & second generation buyback contracts

The transfer & development of technology in the first & second generations of the buyback contracts have only contained in article 13, & it was very brief & there was much ambiguity (Ebrahimi and Khoshchehreh, 2015). Accordingly, the IOC is required to do the following in the contract:

A. Priority employment of local experts & Human resources (Guidance, training, & promotion of technical knowledge & skills of Iranian trainees);
B. Provide a training program tailored to technology & technical knowledge;
C. Agreement on the type of training & level of training with the HC;
D. Provide conditions for the supply of materials & services for goods based on a comprehensive development plan designed to maximize the use of domestic capacity.

2- Third generation buyback contracts

Includes the following two attachments:

A- First appendix, IOC must the transfer of technology to the HC This method has been used for the first time in the Yadavaran field contract; the appendix has provided a list of the general needs of the upstream technology of the oil industry.
B- In the second appendix, IOC must use the maximum of the domestic capacity of the HC. Based on this, domestic companies will be corporate & carry out with IOC in the exploration & development of Iranian oil fields.

A committee has been set up with the purpose of monitor the good faith of the contractor's obligations. The committee responsible for scout, control & monitor the program by the appendix (Ebrahimi Seyyed Nasrallah, 2014).

5.10. Analysis of the weaknesses of buyback contracts

1. The fixed rate of return on capital;
2. Non-flexibility of the terms of buyback contracts & their lack of anticipation;
3. The short period of buyback contracts, for this reason, IOCs did not the motivation for technology transfer;
4. Because the HC takes control of production & exploitation, IOC reluctant to use superior technologies;
5. The contract duration is 7-5 years. The contractor could only be present at the stage of development & exploration, & at the stage of exploitation of the field carrying out by the NIOC;
6. After the product reaches the specified level specified in the contract for 21 days of 28 days, the contractor will have not responsible for the drop in production during the operation period. In practice, the IOC to achieve the level stipulated in the contract may be used inappropriate & Non-standard in Maximum Efficiency Rate (MER) reservoir protection methods to production, Due to the short time that has been set in the contract.

Table 3

Generations buyback	Year	Duration of contract	Contractor Operations Center	Maximum use of Iranian experts	Transfer of technology	Maximum Efficiency Rate (MER)
First-generation	1994	Development Contract 4-5 years, Repayment of Cost 7-9 years from the end of the development operation, Exploration operations for 3- 4 years.	The IOC must register a branch office in Iran for doing business, such as tax & office administration.	The IOC is required to do it. However, there is no encouragement or penalty for the IOC.	Not specified	The IOC is only must use conventional international methods in the oil industry to produce hydrocarbon at the most efficient & effective level.
Second generation	2003	Combined with the exploration & development of 25 years	The IOC must register a branch or company in Iran in order to manage all petroleum operations in Iran, Management & administration of operations & maintenance of offices, accounts & taxes, duties, etc.	The IOC must fulfill the condition of the assignment & use of (Capex) of the contract for this division. (Maximum of 51% of the capital costs). & just a penalty has been set for the IOC to Breach of obligation.	The main contractor & subcontractors must be required to transfer technology during the contract period to the NIOC.	The IOC is only must use conventional international methods in the oil industry to produce hydrocarbon at the most efficient & effective level.
third generation	2007	The contract for the development of the field in a phase of about five years With a repayment period of about 15 years	Only Iran will be the center of all operations (administrative, executive, financial, technical, etc.)	The IOC must fulfill the condition of the assignment & use of (Capex) of the contract for this division. (Maximum of 51% of the capital costs). & penalty & rewards have been set for IOC.	The IOC must transfer the latest technical & industrial achievements, including technical knowledge, or transfer the technical knowledge in the property, by the instructions set out in the annex to the contract.	Conditions have negotiated before the contract With the title of Total Reservoir Management, optimizing reservoir management & (MER) items will be agreed upon by the parties.

5.11. The fourth decade- the emergence of an IPC contract

Iran accordance with paragraphs 14 & 15 of the document approved by the cabinet, titled "General Conditions, Structure, & Pattern of Upstream Petroleum Contracts" (2016), Government policies are increasing oil & gas production capacity to influence the global oil & gas market. As well as emphasizing the preservation & development of oil & gas production capacity, particularly in Common oil fields. The government also seeks to increase value-added through the completion of the value chain of the oil & gas industry, the development of products with optimal performance based on energy consumption & increase electricity exports, petrochemical products, & petroleum products emphasize the MER of resources & technology transfer. Accordingly, IPC contracts in the fourth decade after the Iranian revolution have been designed to achieve these goals.

IPC is the latest type of upstream oil and gas fiscal regime; it has described as the contract is a combination of Buy-Back (contract services) and Production Sharing Contract (PSC).

Transfer of technology & Create local capacity are among the strategic objectives of the IPC. To achieve this goal, IPC has a basic reward system that allows increased costs per barrel will pay to the IOC. This model has been designed to encourage the IOC to extend the latest technological advances in field management, optimization & production. The term of the contract is 25 years. The ownership of petroleum products belongs to the Iranian government. Ownership of Common property belongs to the project. In the IPC contracts, the NIOC & the IOC have been a (JV) & operate jointly. NIOC has the role of manager & monitoring operations as the project owner. IPC contracts have used the structure of JV for carrying out petroleum operations. Its duration is between 7 & 9 years in the development & production phase that has considered between 20 & 25 years. & in the mechanism of reimbursement of costs, the structure is similar to the participation in production (Allocate a portion of the oil produced has intended for payment to the contractor). Indeed, with the establishment of numerous companies, efforts have been made to reinforce learning in practice, whereby the HC will achieve aims related to oilfield management training & technology transfer (Norouzi, 2015).

Table 4

Contracts based on the IPC						
	Date	Party company Contract	The share of the parties	Oil fields	Goals Contract	Contractual feature
1	2016	NIOC & Persia Oil & Gas Industry Development Co (a subsidiary of the Executive Committee of the Comm& of Imam Khomeini)	---------------	Oil fields: Kupal Asmari; Kupal Bangestan; Maroon Bangestan; Joint area of the Yaran (with Iraq Majnoon oil field).	Recovery recovery; The development of joint oil & gas fields.	Iranian companies should choose foreign partners, IOCs tender winners are required to introduce an Iranian company as a partner.
2	2017	NIOC & a consortium of companies Total & CNPCI & Petropars Company	Total (50.1%) CNPCI (30%) Petropars ((%19.9	the 11th phase of the South Pars	Oil Field Development	Remove stage (FID) of the contract; The right to withdraw due to lack of an economic feasibility plan is not possible for foreign companies after signing the contract; If IOCs, without the enforcement of (U.N.) Security Council sanctions, announces that it has the intention to leave the contract, no capital has returned to this company & no sum has transferred to the company.
3	2018	Between the NIOC & the Consortium consisting of Zarubezhneft & Dana Energy Iran	Zarubezhneft (80%) Dana Energy Iran (20%)	Aban oil field & Paydar-e Gharb field (Both fields are jointly owned by Iran & Iraq)	Improved Oil Recovery (IOR) & increase production fields	The main purpose is Technology transfer; Knowledge management & financing; plans to increase production through Improved Oil Recovery (IOR)

5.12. Causes & objectives designing of IPC

5.12.1. Non-attractiveness of buyback for foreign investors

The buyback contracts have not enough attractiveness for foreign investors, Because of the presence of models of more attractive contracts in the area such as Iraq contracts. It has caused new model contracts to has placed on the agenda of Iran; firstly, they have enough attractions for foreign investors; second, those contracts can compete with regional countries, especially for the development of common oil fields. Some experts believe that the IPC contract of Iran is such as the Technical Service Contract (TSC) of Iraq. Because of the similarity in the distribution of benefits in the contract (Sahebonar et al., 2016).

Because in this contract, the contractor's payments are made solely on the oil field's income. It is somewhat similar to the contract of PSC, although ownership has not been transferred.

The contractors will receive all operational costs of the contract (operating costs of the prime period of development & Capex & Non-Capex) & the period of exploitation from the oil produced from the field until the end of the contract period. The reason is the encouragement of the contractor to carry out the best ways to recovery & efficiency factor of the field (Abbaszadeh and Abbas Maleki, 2013).

In contrary to Buy-back contracts in which the IOCs were absent in the production period, in IPC the IOCs will be present in all of the exploration, development & production phases (Sahebonar et al., 2016).

Also, the parties' contract will establish a joint operating company (JOC) for carrying out the production stage. These contracts are applicable & suitable for Greenfield & Brown Fields.

In a simple analysis, one can say, the essential aspect of the IPC's differentiation with buyback contracts is the presence of the contractor during the operating period as well as the long-term duration of the contract period & these contracts are applicable for high risk, medium risk, & low risk. The contractor's wages have based on the amount of production from the field, which is related to various factors such as oil price, R-factor, production level & type of field (Fard and Honary, 2016).

5.12.2. Create effective contracts for technology transfer & Maximum Efficiency Rate

According to Paragraph 7 of Article 1 of the Law on Amended petroleum Law, adopted in 2011:
MER & production of hydrocarbon reserves include all activities & operations that lead to the optimal & maximum economic recovery of production from the country's oil resources over the lifetime of the resources, & these activities will prevent the loss of reserves in the oil cycle based on approved policies.

Some factors that reduce the annual production of reservoir oil are including
Increasing the age of the tanks & entering the second half of their lives, failure to implement appropriate technical & management policies to maintain reservoir pressure & Keep up the pressure in the tank (Abbaszadeh and Abbas Maleki, 2013).

The IOCs reasons for being the impossibility of optimal production & long-term reservoir development in the buyback contracts are as follows:

1. Buyback contracts are for exploration or developing the field (build & transfer (B &T)) until the time of production oil, & after this stage, the IOC must leave the project & NIOC will become as an operator, & the role of the IOC will reduce & limits as a provider of services & technology.
2. NIOC has incapacity & Lack of sufficient knowledge in the management & preservation of the oil field.
3. Tanks always have required new investments due to changes in the behavior of the reservoirs during the production phase (J.H. and van Groenendaal, 2006).

To address these deficiencies in the IPC contracts have been the following is predicted:

1. IOC intervention in the production phase;
2. Contract duration is Long-term;
3. Cooperation & participation of the Iranian company in all stages.

These conditions are the mechanism to ensure the correct & complete transfer of technology to Iran by the contractor. The contractor is present in the operation stage & they will enjoy the fee this step. The fee & profit of the contractor is related to the amount produced from the field directly. The contractor must carry out best efforts to maximize the cumulative production of the field during the duration of the contract by the standards of field protection.

Also in the IPC will be used to improve & enhance the recovery process from the reservoir (Improved Oil Recovery (IOR) / Enhanced Oil Recovery (EOR)).

The EOR methods have been divided into primary & secondary recovery processes, including tank pressure stabilization with water or gas injection & recycling processes of mixing & non-immersion injection methods, chemical methods & thermal methods & the different use processes to increase retrieval.

The IOR is all the processes, including technologies, intelligent reservoir management, & control, advanced reservoir monitoring techniques that accelerate the production & enhancement of withdrawal of residual oil (Alvarado and Manrique, 2010).

5.13. Advantages & features of the IPC contract

- The program & budget of the project are determined annually based on the reservoir behavior & project realities;
- All projects & (Capex) will pay off the oil produced from the field. The maximum payment time will be between 5 & 7 years;
- In the contract has been created a positive balance between the risks & revenues of the parties in the project;
- The investor's profit (bonus) will be paid for production & calculated based on per barrel of oil or one thousand cubic feet. Due to fluctuations in the price of oil in the market, a percentage (amount) of the contract has been intended to control it. Given the fact that each oil field has different risks & conditions, the profit level of the fields will also be considering different.
- This type of contract is usable in high-risk areas & deepwater (exploration, development, production);
- IOCs have a chance of exploration in the side blocks in the event of the failure in exploration;
- The flexibility in the contract means is Long-term cooperation through the formation of a joint venture, the operation structure, & joint management by the joint management committee of the contract;
- Flexibility to increase collaboration time at the production & development stage will be through the carrying out of (EOR) techniques;
- It is possible continuity of all operational steps (Exploration, Development, & Production, EOR & IOR) in the contract (Fard and Honary, 2016);
- The IPC contract has dedicated some terms of Social corporate responsibility. IOC will be committed to building hospitals or centers of social services in regions & towns adjacent to the reservoir oil production (Talebian, 2015);
- In IPC, the exploration/evaluation phase is four years plus two years for the development phase;
- In IPC, the phase of development & production is 20 years (plus five years of development for IOR / EOR).

In general, buyback & IPC contracts have been classified in the service contract. Consequently, they follow the principles of service contracts.

5.14. Control over ownership of oil in place or oil reservoirs

According to a Service, the Contract has determined total ownership of the petroleum resources and all assets with the HC. Economically, under Service Contracts, the HC gets the maximum return than other petroleum contracts because the government has exclusive power overproduction. In paragraph (c) of Article 11 are listed: oil, gas ، gas condensate, and other materials in the reservoirs based on the contract are wholly owned by the Iranian government. The right of sovereignty over and public ownership of all oil and natural gas fields or reservoirs is vested in and is to be enforced by the Ministry of Petroleum as the representative of Iran. According to Article 3 of the IPC by-law approved by the Council of Ministers on the general conditions, structure, and model of upstream oil and gas contracts (2016): The Ministry of Petroleum is the official representative of the government to apply sovereignty and public ownership over wholly Iranian oil and natural resources and reserves.

5.15. Control over ownership of oil and oil products

According to IPC terms, in paragraph (c) of Article 11 are listed: oil, gas ،gas condensate, and other materials in the reservoirs based on the contract are wholly owned by the Iranian government. However, the oil, gas and condensate, and other products of production belong to the employer or client. In the IPC contracts, like other service contracts, the ownership of reserves and oil production will not be transferred to the contractor at the wellhead. However, this case can have examined in several ways.

1. Some analysts believe that in the Contract IPC have been implicitly mentioned Reserves Booking, and it is legally available to IOCs as well. Although Iranian officials have stated in this, the contract will be paid in cash (USD). However, the same as the buyback contract, this payment can be considered as a contract for the purchase and sale of oil, which is one of the annexes to the contract, it is a commercial transaction, and it has a delivery point. It means that it is not possible to transfer ownership of the oilfield and production ownership to the IOCs (Fard and Honary, 2016).
2. However, in paragraph 3.1 of Approved of the Cabinet of Ministers of Iran of 2016, the sovereignty and ownership of property are reserved for the government. However, it has not has determined, The costs and Compensation of IOCs caused by the actions of the government in the application of sovereignty and ownership on the property, which must pay all of these costs to the IOCbased on the principle of reasonable expectations. One of the essential reasonable expectations for a contractor in this contract is to receive a specific wage from per barrel of oil or condensate. If the government want to apply of sovereignty in contract, for any reason other than technical reasons, decides to reduce or stop the production of the field, it is possible for IOC claim & demand for all the wage that could have received during the period of production stoppage. It indicates that the IOC has a legal right to oil produced from the reservoir, which is proportional to the amount of volume of oil in the tank and the recovery factor. (Fard and Honary, 2016).

5.16. Control over ownership of oil in place or oil reservoirs

According to IPC terms, In paragraph (g) reads: All operations of the contractor will have done on behalf of the employer on the date of commencement of the contract, all property as belonging to the employer from the date of the beginning of the contract, including buildings, goods, equipment, wells and surface facilities and subsurface. According to the IPC, technology and knowledge are in the category of property to be transferred by the IOC to Iran based on the contract. Consortium and JV contracts are among the best ways to transfer technology to upstream oil contracts. Establishment of Iranian and foreign joint ventures E & P has selected for technology transfer as the primary solution at IPC. it is the way to attend IOCs in all stages of exploration, development, and production integrated with the participation of Iranian companies. The creation of JV is due to cover the weaknesses in the supply chain covering the upstream oil industry. Impact of IOCs Obligations on Investment in Technology with the participation of Iranian companies, universities, and research centers of Iran is as follows:

1. The ability to transfer hard technology;
2. The possibility of transferring management of soft technology;
3. Merge of Mega petroleum projects through rotational management and E & P companies (Emadi, 2015)

Technology transfer in IPC contracts has predicted in four ways:

1. Cooperation and Participation of the Iranian party with a credible foreign company and the foreign company must provide a technology transfer and development program.
2. The foreign company must maximum use of the technical, engineering, manufacturing, industrial, and executive capacity of the HC (at least 51%).
3. The foreign company must use the maximum domestic human resources in the carry out of the contract; the foreign company must offer a comprehensive training program to improve the quality of these domestic human resources and carry out the necessary investments.
4. Management positions in the production period are circulation between the parties. Also, executive management positions must have gradually transferred to the Iran party.

IPC contracts have a new vision at technology transfer (soft and hard). Soft technology is the management skills needed to utilize the hardware. Soft technology is the conscious use of general laws or economic, social, instrumental, institutional, methodological, and procedural experiences, which contribute to the development, adaptation, or control of the internal and external world. However, hard technology without soft technology does not produce much-added value. Hard technologies need to be integrated with soft technologies to reveal their economic and social value (Jin, 2011).

5.17. Control over ownership of information and data

The oil and gas industry can achieve innovation through "data democratization."

Usually, the data collected at the exploration stages are analyzed before the decision was made for drilling oil wells.

Data democratization is the process of creating value from all the data and creating an accessible database in order to create new patterns of data for obtaining more knowledge.

In the oil and gas industry, data has been considered as property, and data ownership has been identified in the contracts.

According to the rules of Iran and the terms of the IPC contract, data and information are the property categories. Due to factors such as bilateral or multilateral contractual agreements, storage policies, the fear of disclosure of information, and the access and profitability of competitors from data, data have been kept confidential usually.
Each oil tank has a life cycle. Using and connecting data from one or more wells in the same field (especially common oil fields), host countries, and IOCs can achieve better results and more valuable. (Bagherian, 2015)
In the IPC contracts, information and data ownership is owned by the NOC or the host government, like the service contract.

5.18. Effective Control

Under IPC contracts, reservoirs, and all oil products have owned by the HC. Analogous to buyback contracts, the HC has the right to attend and monitor and manage all phases of petroleum activities. It is also the right to sell and sell petroleum products on the domestic and international markets for the HC or its representative. In practice, the IOC has the role of contractor in the oil project. Moreover, the ultimate and effective control belongs to the HC.

Table 5

contracts	**The structure of technology transfer in Iran's oil contracts1901-2018**
Concession contracts	Not specified
Production sharing	The soft technology transfer
joint ventures	The soft technology transfer, but its speed was dependent on the operating agreement

Service contract	The human training resources
Buyback First-generation	Not specified
Buyback Second generation	In one of the terms of the contract, the contractor (primary and secondary) must transfer technology during the contract period to NIOC.
Buyback third generation	The contractor must carry out some subject, including : Transfer technical know-how and the latest technical, industrial, and technical knowledge, human resources training, and the maximum use of the HC's capabilities in designing, constructing, and installing equipment and machinery. For the first time, the instructions for this have been one of the annexes to the contract, and the contractor must perform this assignment, including : Staff Training of NIOC; Active participation of experts in various activities related to the agreement; Recruiting Iranian experts; Assignment of a license ; Preparing documentation and booklets for activities; Participation of Iranian contractors; Joint Research and Development and cooperation with research centers of this field have been controlled by the Subcommittee on Joint Technology Transfer Management.
IPC	Establishment of a joint Iranian-foreign JV with the project's rotating management in (JOC) joint operation and soft technology transfer; The presentation of the program of technology transfer and development as part of the annual operational, financial plan requires the maximum use of technical, engineering, manufacturing, industrial, and executive capacity of the HC under the law and rules; The joint ventures of this model have shifted the direction of technology transfer from buyback to FDI; Accordingly, it is possible to carry out research, development, production, and production through JV, also strengthening the networking process In the transfer of innovation by JV.

6. Joint Venture (JV)

In 1957, the first generation of the JV in the Middle East was signed by the Italian National Oil Company through AGIP with Iran and Egypt (Suleiman, 1988).

Crommelin has stated the definition of a JV in the oil and gas industry:
"The mineral and petroleum JV is an association of persons (natural or corporate) to engage in a common undertaking to generate a product to be shared among the participants. Management of the undertaking has divided: specified activities are to be performed by a designated person (the operator or manager) as agent for the participants; the power to determine certain matters is vested in a committee (the operating or management committee) upon which participants are represented and entitled to vote in accordance with their interests in the venture, and other matters are decided at the outset by the participants as terms of the association. The relationship among participants is both contractual and proprietary: the terms of the association are fixed by agreement, and property employed in the undertaking is held by the participants as tenants in common" (Crommelin, 1986).

According to the Courts of Canada, a JV is:
"contemplates an enterprise jointly undertaken, that it is an association of such joint undertakers to carry out a single project for profit; that the profits are to be shared, as well as the losses, though the liability of a joint adventurer for a proportionate part of the losses or expenditures of the joint enterprise may be affected by the terms of the contract" (Barker, Graham Edward and Seccombe., 1973) (Grant, 2012).

JV has been made based on the concept of production partnership contracts. There are some components of production partnership contracts in the current JVs. For instance, the existence of a joint management committee in the structure of this partnership, which includes capital costs, operational costs, and control and monitoring of exploration and development activities. There is also an operational committee responsible for the implementation and coordination of oil operations. (Suleiman, 1988)The operator may be one of the participants. A subsidiary company is to act as an operator to implement a project or formation of the company. Each of the shareholders has a share in their interest in the project. Sometimes the operator in the JOA acts as an agent or representative of the participants. JV assets have considered common shares which maintained by the operator as a representative of the participants. The operator is an agent of the participants (H. Kevin McCann, 1982).

Some of the reasons behind the tendency of developing countries to abandon traditional CAs and tendency to other contracts, such as Joint Operating Agreement (JOV) are:

1- The flaw of the traditional CAs for the HC to have effective control over petroleum resources, products, and activities, Low-income HC of oil fields;
2- Increasing NOC Knowledge and Skills;
3- Establishing an OPEC organization and enhancing the negotiating ability of OPEC member countries, and the emphasis on the principle of "changing circumstances."
4- Approve the United Nations Resolutions on the principle of permanent sovereignty over natural resources.

From 1967 until 1973, the idea of “participation” in the oil and gas industry had received considerable attention by OPEC and its member states supported by UN Resolution 2158 (XXI) concerning the principle of permanent sovereignty over natural resources (Al-Emadi, 2010).

The aim of countries to use JV contracts has included

1- Sovereignty, ownership, and effective control over petroleum resources;
2- Control over oil operations;
3- Profit and more financial returns than sales of petroleum products;
4- Transfer of technology in petroleum contract;
5- Training nationals working in the oil industry;
6- Direct and easy access to international petroleum markets (Al-Emadi, 2010).

Elements of Joint Venture:

1- The venture should be a specific commercial project;
2- Joint Ownership of Assets;
3- Joint investors should be able to participate in managing and controlling joint ventures (Wilkinson, 1997).

there are different categories for Joint Ventures, including Considering legal issues, structure, and frameworks.
First- JV category included is:

1- 1-Incorporated joint ventures (IJV)
2- 2-Unincorporated joint ventures (UJV) (Bean, 1995)

Second- Joint Ventures can be divided according to the structure including:

1- 1-Contractual Joint Venture (CJV)
2- Joint Venture Corporation (JVC)
3- Joint Venture Partnership (JVP)

One of the reasons for diversification in the form of a JV is often to depend on considerations such as taxes and the ability to limit liability to third parties. (Grant, 2012) Activity petroleum operations business investment. This activity can be shared among IOCs to produce commercial oil (Kaasen, 2001). These business relations IOCs are based on an agreement between the parties with the HC and commonly known as the Joint Venture Agreement (JVA) or Joint Operating Agreement (JOA). JVA is a framework for conducting petroleum business, activities, and decision making through a JV management committee .The government grants a license to determine the scope of petroleum activity. This license is including the rights and interests of the partnership. JVA guarantees that the rights and responsibilities associated with the license to share with members. JVA governs over the licensed petroleum through the appointment of an operator (Kaasen, 2001). Regularly JOAs used in offshore and international operations, where costs and risks are high, usually go much further in requiring non-operator approval or consent to decisions.

6.1.First- JV category

6.1.1. Incorporated joint ventures (IJV)

Governments control this type of JV through the utilization of specific regulatory rules and regulations as a condition for issuing production licenses. These mandatory terms of the JOA are part of a regulatory arrangement that authorizes the HC to regulate all aspects of petroleum development and production. For instance, IOCs are authorized to operate in Norway by Section 3-3 of the Petroleum Activities Act 1996 joint operation agreement (Norway). These activities have been controlled by the government through the issuance of production licenses. (Directorate, 2008)

Norway's most significant regulatory issues are:

1. The JV was formed by the Norwegian government. Through the JOA, the government determines all oil activities conditions, including JV management, oil activities, responsibility, risks of the field, and financial facilities development;
2. The government determines the operator for the joint venture; the government will be able to control the development of oil resources.
3. The government has the legislative capacity to select the participants of a license. Companies authorized to develop and produce oil have been selected by the Norwegian Petroleum Directorate (NPD). The NPD examines environmental and socioeconomic factors in exploiting oil resources section 3-4 and 3-5 of the Petroleum Activities Act 1996 (Norway);

The Norwegian government can regulate petroleum activities in the sustainable exploitation of oil resources in compliance with Norwegian oil policy to increase by utilization of JOV (Hunter, 2010) (Arnesen, 2007). The Norwegian government, through the JOA contract, to regulate and control the activities of oil as well as the relationship between the participants in the petroleum activities. (Art. 15-17 of the Joint Operating Agreement (Norway)) (Directorate, 2008) A method of controlling oil activities is by the Norwegian government through the Management Committee, which is part of the Norwegian JOA.(Art. 1.3.) The Norwegian government regulates the activities of the oil industry through regulation of oil through regulatory powers, administrative bodies, as well as the licensing of participation in the oil industry activities in the Norwegian continental shelf (Nelsen, 1991).

6.1.2. Unincorporated joint ventures (UJV)

In this type of contract, the government does not participate in petroleum activities. The government has no legal role in regulating oil development. It means that (of an oil company or other organization) not formed into a legal corporation for activity petroleum. In this type of contract, all agreements have been privately negotiated between the JV parties, and the government does not have any role. There are no government regulations for the establishment of JV. For instance the Australian JV Agreement. The Australian Government has no role in the petroleum activities, but the JVA requires legitimate passage for the project and activity JVA has been under Legal obligations outside of the JVA, for example, Trade Practices Act 1974 (Cth), OPAGGSA, and common law fiduciary duties. JV marine development activity is under the auspices of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth); after then, JV has been approved by qualified authorities. At this time, the JVA regulates the relationship between participants in the JV and the development of oil resources.

Model JV in Australia (UJV) is a legal relationship for oil activity in a specific region based on a special license in which parties to contract make a contractual relationship without forming a distinct legal entity. (Petroleum, 2009) In the Australia JVA, it has determined that the interests of the parties in the contracts, stocks, and interests of the shareholders as well as the legal rights between the parties as joint tenants and determine the specific production ratio separately to the account of the parties (Jaques, 2005).

The Australian Government Parliament has passed regulations for offshore oilfield operations in Western Australia through non-compulsory State Agreements. These Agreements are a contract between the HC and supporters of major resource projects; this project is including mining and oil, offshore, and offshore. (Petroleum, 2009) These rules and regulations determine the framework of the obligations, terms, and conditions of project development for the continuous relationship and cooperation between the HC and IOCs. These governmental agreements are a mechanism that facilitates and guarantees long-term assurances, land tenure, the development of specific long-term projects, the security of tenure, and sovereign risk reduction for IOCs (Western Australia Department of Industry and Resources, 2007).

The goal of Australian oil policy is the sustainable development of oil resources; The Australian government has no legal capacity to influence the decision making, conduct, and policy of investors in the joint ventures (Arnesen, 2007).

The features of this type of government agreement are that:

1. Reduce a large amount of legal pressure and controls on IOCs;
2. Reducing the being responsible and costs of IOCs, These leads contribute to the sustainable economic development of offshore oil resources:
3. The government agreement encourages oil companies to invest in Australia due to a lack of legal, contractual relationships between the license and the HC. (Hunter, 2010)

There is a history of using these types of government agreements in other countries' contracts, for example, the Anglo-Persian Oil Company Limited's (Private) Act 1919, British Imperial Oil Company, Limited (Private) Act 1925, Commonwealth Oil Refineries Limited (Private) Act 1940 and Texas Company (Australasia) Limited (Private) Act 1928.

6.2. Second - JV category

6.2.1 Contractual Joint Venture (CJV)

The first CJV contracts were used in the United States onshore, in which a model has proposed by the American Association of Petroleum Landmen. This type of structure was introduced in the Middle East by the agreement between the NIOC and AGIP, Philips, and the Oil and Natural Gas Commission of India in 1965 (Hossain, 1979). In the current period, CJVs are the most popular type of JV in the oil and gas industry (Hossain, 1979). For example, this model contracts more utilization on the continental shelf of the UK (Black and Dundas., 1992). JOAs are a mechanism through joint ventures to the operation of oil and gas resources. JOAs generally include an operator responsible for exploration and development operations under the supervision of the operational committee. As a result, JOAs create a structure that is in the form of a partnership, which is based on the contract. The Operator can be one of the co-venturers (usually the one with the most massive participating interests), a stranger (a company not associated with the co-venturers), or an Operating Company established by the co-venturers (Merralls, 1980).

The features of this type of contract:

1. In this type of contract, a contract governs the relationship between investors and their contractual obligations, and No separate legal entity has created in this type of contract Unlike a JVC or JVP;
2. Parties have determined the governance structure of JV; it will be entirely customized by them;
3. Capital and assets allocated in this type of JV are remain owned by the parties themselves (Grant, 2012).

6.2.2. Joint Venture Corporation (JVC)

The IJV has governed by the corporation law of the relevant government (Al-Emadi, 2010). The feature of this type of JV is that asset investors will participate in their participation, since then the partnership is the ownership and control of assets. Moreover, it is not necessary to state the objects of the corporation. In this type of joint venture, investors are joint stockholders and have limited liability. In the tax viewpoint, the JVC has identified to be a separate legal entity and states that taxpayers are distinct from JV (Grant, 2012).

6.2.3. Joint Venture Partnership (JVP)

Unincorporated joint venture partnerships have been governed by the partnership laws of the relevant state. (The New Legislation (2001); and U.S. Uniform Partnership Act 1914 (Revised 1994 and 1997), and Uniform Limited Partnership Act 1976 with 1985 Amendments). A partnership can take one of two forms. In a general partnership, all parties are personally liable for the debts of the partnership. In a limited partnership, at least one general partner has unlimited liability, while dormant partners have limited liability but no rights to control or manage the business. The oil and gas industry prefers general partnerships. Provincial partnership law has governed on JVP. In this type of JV, each investor is the principal and agent of another investor, and they should be the best function as investors' representatives based on the interests of participants (Alberta Partnership Act, RSA 2000, c P-3, s 1(g)).

6.3. Control over ownership of oil in place or oil reservoirs

Most exclusive ownership of petroleum resources is for the government except for some countries such as America. According to US law, the owner of a land is also the owner of oil and gas on the land. (Meyers, 1956)In the JV, sovereignty over oil resources has belonged to the HC.

6.4. Control over ownership of oil and oil products

The government grants ownership rights to third parties (IOCs) for exploration, development, and production activities through the issuance of oil licenses as the owner of the oil resources. Granting a license to operate oil by the HC creates ownership rights between the government and the IOCs, which leads to the exploitation of oil through the establishment of JV.

The licensee is an exclusive right to the specific area specified in the authorization. The HC has the right to transfer ownership of the land to others when the license expires. This right is transferable and can have sold.

The transfer of ownership of oil has been determined in a joint operation agreement (JOA). Each of the parties to the partnership has a certain amount of rights, responsibilities, and shares, in which the share of the parties in the contract is equal to the amount of ownership of the oil products by the parties. According to Norway's JOA, the ownership, responsibility, and risk associated with the produced oil have transferred to either side at the delivery point designated by the management committee before the start of the oil production (Art. 20.1) (Directorate, 2008).

As a general rule, each partner in the JOA obtains a share of production based on its proportional interest in the contract.

Ownership in CJV, in other words, in CJV direct ownership of the project and production is available to the HC and IOCs. (Al-Emadi, 2010) HC and IOCs are the owner of equipment and facilities for this project and produce oil and gas. (KW Blinn et al., 1986) Ownership in (JVC), HC, and IOCs will only receive revenues from oil and gas sales, and they have not direct access to petroleum production. Indeed, HC and IOCs are shareholders of a separate legal entity. This JVC independently owns oil and gas production (Davies et al., 1992). Ownership (JVP), The JVP has direct ownership (and access) to the production of petroleum in addition to equipment and facilities. Ownership in these types of JV contracts has been determined by the amount of capital (or cash or property) of the partners. Finally, each partner will be the owner of invested due to the ownership of capital (Al-Emadi, 2010).

6.5. Control over ownership of oil in place or oil reservoirs

Generally, co-ownership has held on assets, installations, and equipment installed. The JV has direct ownership of equipment and facilities.

6.6. Control over ownership of information and data

Given that each party to the partnership has a certain amount of rights, responsibilities, and shares, it appears that control of ownership of the information and data also belongs to all stakeholders on the basis of the extent of each party's participation.

6.7. Effective Control

Control in CJV -The CJV to be granted Operations Committee the power to control and manage the activities of the joint venture, except for exploration and exploitation operations. The operational committee has the right to monitor the operation of the operator. On the other hand, the exploration and operation of resources are under the sole control of the operator (Al-Emadi, 2010).

The structure of JV management and control is integrated or non-integrated. The co-ventures jointly participate in the management and control of the joint venture's affairs. In non-integrated structures, management and control have divided between the co-ventures (Chow, 1985).

Control in (JVC) -Board of Directors (BOD) is responsible for controlling and managing operations and executive management of the joint venture company.

IOC and HCs, as JV shareholders, have the responsibility to grant executive management through the appointment of BOD members, thereby indirectly controlling joint investment activities. Indeed, control and management are done directly by partners or co-ventures (Shishido, 1987) (Al-Emadi, 2010).

Control (JVP)-All partners have an equal right to participate in the management and control of the JV. A management committee has created, which consists of an agent of the joint participants, which is responsible for the implementation of the business (Sayer, 1999).

Conclusion

One of the reasons for the creation and diversification of different types of petroleum contracting patterns is the tendency of governments and international oil companies to define different states of control over the oil reservoir, including produced products, petroleum facilities and equipment, and even the right to own data and information on these activities. All of the above have high strategic and economic value. In the meantime, the domestic laws of the states have a fundamental impact on the division of ownership rights and sovereignty over these strategic natural resources, for example, in the CA the government aims to maximize the profits from the extraction and sale of oil resources, thereby providing effective management and control to the IOC, But in contrast to the service contracts of host governments that are not interested in granting strategic concessions to the IOCs, the status of the IOCs as a contractor is reduced by the profits from the sale. In fact, the ultimate and effective control of all aspects is in the hands of the host government, On the other hand, in PSA and JV agreements, HC and international oil companies reach an agreement based on an integrated or non-integrated JV management and control structure. It is based on the number of shares and dividends agreed between the parties, in which case-control and management are exercised directly by the partners or partnerships. Based on the analysis done in this article, it has been identified that one of the key factors informing & determining different petroleum contract patterns for the stakeholders is which party can exercise more effective control over the items mentioned in this article. Such as management, stocks, oil reserves, manufactured products, reserves, etc.

Author contributions
This paper was written in its entirety

Conflicts of interest
The author declares no conflicts of interest in this paper.

Abbreviations
Agip Company (Azienda Generali Italiana Petroli - Italian General Oil Company),Bushehr Oil Company (BUSHCO),Contractual Joint Venture (CJV),Concession contract (CA) ,Capital costs (Capex),Contractual Joint Venture (CJV),Exploration and Production (E&P),Enterprise de Recherche et d'Activite Petroliere (ERAP),Enhanced Oil Recovery (EOR),First Tranch Petroleum (FTP),Host country (HC),International Oil Company (IOC),Iranian National Oil Company (INOC),Iran petroleum contract (IPC),Incorporated joint ventures (IJV),Improved Oil Recovery (IOR),Joint venture (JV),Joint Operating Agreement (JOV),Joint Venture Corporation (JVC),Joint Venture Partnership (JVP),Joint Venture Agreement (JVA),Joint Venture Corporation (JVC),Joint Venture Partnership (JVP),Maximum Efficiency Rate (MER),Mines on the surface of the earth (MSE),Mines in the depths of the underground (MDU),National Oil Company (NOC),National Iranian Oil Company (NIOC),Non-capital costs (Non-Capex), Norwegian Petroleum Directorate (NPD),Operating costs (Opex),Production Sharing Agreements (PSAs),Production Sharing Contracts (PSCs),Pure Service Contracts (PSCs),Risk Service Contracts (RSCs),Societe-Irano-Italienne des Petroleos (SIRIP),Technical Service Contract (TSC),Unincorporated joint ventures (UJV).

Competing interests
All authors declare that they have no competing interests.

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Applying Simplifying Heuristics when Making Judgment under Uncertainty – A Field Study

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Abstract
This paper studies the so-called Take the Best (TTB) and the other two related heuristics which are Take the last (TTL) and the Minimalist heuristics to collect more evidence on these heuristics and then make comparison on performance of these heuristics' potential users who have different degree of knowledge. People actually adhere to the recognition heuristics (RH) so often when facing inferential choice between a recognized object and a novel one. It is a main purpose of our empirical field study to look for evidence on what decision makers really do to arrive at their final choice in cases where both objects in the choice task are recognized. Will they still stick to recognition cue, or will they follow TTB or TTL or the Minimalist heuristic or will they resort to other type of strategies? Our results are somehow ambiguous. In sum, the cues the participants really picked up from their minds when taking the task and revealed by themselves in the interviews are more diverse and complicated than the anticipated ones.

Keywords: Decision Making, Heuristics, Uncertainty Behavioral Economics, Field Experiment

JEL: D01, M20

1. Decision Making with Recognition Heuristic

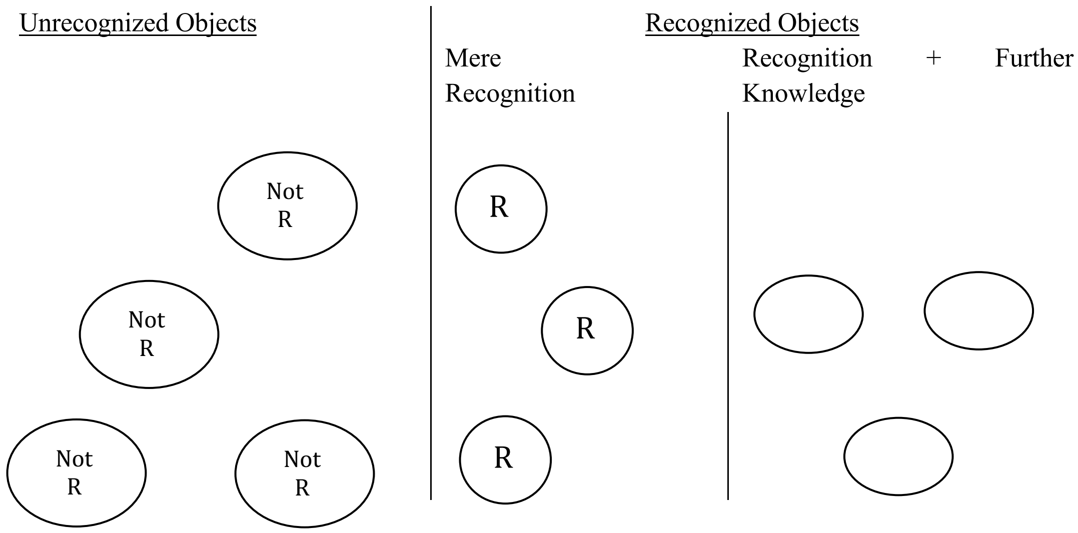
Whether an individual can come up with a good quality decision or judgment under time constraint, limited knowledge and computational capacity of a human brain and how he performs this as a process are prominent questions that have drawn much attention and efforts of the scientific community to solve. Decision making theories have gone through a long history from the very first normative models which base on the basic assumption of human unbounded rationality. The new perspective of human bounded rationality, in which decisions makers may not be consistent or are unable to integrate all relevant information into the decision making process due to his cognitive limitations or due to time constraint, has paved the way for the development of abundance of descriptive theories as attempts to give explanations to the deviations from normative models.

Simon (1947) was with his book "Administrative Behavior" and his later works in "theories of "bounded rationality" (Simon, 1955, 1956, 1978 and 1980) a pioneer to many of the later concepts in behavioral economics (Kalantari, 2010; Kerr, 2007, 2011). He was one of the first scientists to analyze organizational decision making under uncertainty by considering the constraints under which decisions are made. The central idea of bounded rationality concept proposed by Simon is that due to human's cognitive limitations and due to the fact that in many real-world situations, optimal strategies are unknown or unknowable, decisions are made by a process called as '*satisficing'* rather than by 'optimizing'. The term 'satisficing' - a blend of 'sufficing' and 'satisfying', has been used to denote problem solving and decision making process which involves steps of setting an aspiration level, searching for alternatives until one is found that meets the aspiration level and selecting that alternative (Simon, 1978). Simon's notion of bounded rationality and satisficing approach has soon been adopted by many other scientists to construct their own models of human decision making (Kahneman, 2003, 2011; Gintis, 2006; Callebaut, 2007).

How are decisions made under uncertainty? Our mind applies logic, statistics, or heuristics (Gigerenzer & Gaissmaier, 2011). The simplest heuristic among the 'fast and frugal heuristics' proposed by Gigerenzer and his research group (Gigerenzer & Goldstein, 1999a) is the Recognition Heuristic (RH), which may be employed alone or employed at the very first step when applying other heuristics in the family of 'satisficing' heuristics (i.e. Take-the-best heuristic, Take-the-last heuristic and The Minimalist) in inferring choice tasks. Concretely, when one is facing a pair of options in a choice task in which he/she has to infer which of the two has a higher (or lower) value on some criterion (e.g. larger, faster, …), the recognition heuristic, if employed, says that "if one of two objects is recognized and the other is not, then infer that the recognized object has the higher value". The condition for RH to work well is when recognition is a good indicator of a high value on the criterion estimated i.e. the recognition validity is high.

Before bringing in an illustration for RH, it is important to distinguish 'mere recognition' from 'degree of knowledge'. Mere recognition is binary feeling that we have or have not experienced something before, which can be considered as a minimal state of knowledge (see *Figure 1*). This shows that RH can help to make decision only in cases where one object is recognized and the other is not. For cases in which both objects are recognized or neither of the two objects is recognized (i.e. the recognition cue does not discriminate between the two options), then decision makers must resort to other heuristics using knowledge beyond mere recognition or may make decision based on random guessing.

Figure 1: Recognition Heuristic



The family of 'fast and frugal heuristics' applicable in a two-alternative choice tasks is constructed by combining or switching between such decision making strategies. In general, the three heuristics share some common features which are involving limited search using step-by-step procedures, having simple stopping rules and basing decision on only one reason or cue (one-reason decision making mechanism); yet, they are different in the way further information (i.e. cues and cue values of the objects) are searched. The following step-by-step breakdown of the three heuristics (with binary probability cues) tells us more.

Step 0 (same for all three heuristics): Recognition heuristic is employed at this very first step and the result of this step determines which action should be taken next.

- o If one object is recognized and the other is not, then choose the recognized one.
- o If neither of the two objects is recognized, then choose randomly between the two objects.
- o If both objects are recognized, then go to step 1.

Step 1: Search for cue(s) and cue values that indicate higher (or lower) value on the criterion estimated. Limited search works in a step-by-step way: cues are looked up one by one until the stopping rule is satisfied.

- o The Minimalist: Draw a cue randomly (without replacement) and look up the cue values for the two objects.
- o Take-the-last (TTL): Applicable only if records of which cues discriminated in previous similar tasks/problems have been built up. If such records are available or retrievable, choose the cue that stopped search in the most recent task/problem that the subject has faced. Then look up the cue values of the two objects.
- o Take-the-best (TTB): Choose the cue with the highest validity that has not been tried for the respective choice task. Then look up cue values of the two objects.

Step 2 (same for all three heuristics): Stopping rule to stop search for cues and cues values.

- o If the cue discriminates which means one object has a positive cue value ("1") and the other does not (i.e. either "0" or unknown value), then stop search and move to Step 3.
- o If the cue does not discriminate, then go back to Step 1 and search for another cue.
- o If no further cue is found, then make a random choice between the two objects.

Step 3 (same for all three heuristics): Decision rule. Predict that the object with the positive cue value has the higher value on the criterion.

The transparent algorithms as presented above are supposed to make the whole information-gathering and decision making process involved in these heuristics easily traceable. They also enable putting those heuristics into test for confirming or disconfirming its validity and effectiveness (Gigerenzer & Goldstein, 1996 and Gigerrenzer & Goldstein, 1999b).

2. Research Design and Methodology

With a large number of certain evidence that people actually adhere to the RH so often when facing inferential choice between a recognized object and a novel one, it is a necessity now to focus on seeking evidence on what decision makers really do to arrive at their final choice in cases where both objects in the choice task are recognized. Will they still stick to recognition cue, or will they follow TTB or TTL or the Minimalist heuristic (i.e. base their inferential choices on probability knowledge cues in a non-compensatory way), or will they resort to other type of strategies? Another critical question that should be tackled when studying heuristics is the deference in heuristic users' performance. In the studying cases i.e. knowledge- based decisions, the question raised is that whether participants with better knowledge can perform better than the ones with less knowledge.

This paper is an attempt to find the answers for the above questions. However, this paper does not deal with tracking down the whole decision making process but rather only deals with two basic signs of TTB, TTL, the Minimalist heuristics:

- o Inferential choices are based on knowledge cues, and
- o Inferential choice is made based on one cue only if such cue discriminates between the two objects

If both of the two signs mentioned above are found in a specific choice task, then that participant is considered as a potential user of TTB, TTL or the Minimalist in that case. The second purpose is to make comparison of performance between the participants with better knowledge and the others in terms of accuracy and speed of making choices. For such purposes, the research is designed on the qualitative approach basis. Twenty (20) participants will be invited to join an experiment in which they will have to deal with two certain tasks.

In the main task, participants will be asked to deal with the following inferential choice task: *"Which country/dependent territory in each pair has the larger population?"*[1] However, before engaging in the main task, participants will be asked to identify which countries (or dependent territories) they can recognize in the list of 100 populous countries of the world (ranking from the 6th to 105th most populous countries in the world in 2018). And then for each participant, ten (10) pairs of countries/ dependent territories will be drawn out randomly from the list of 100 countries which have been identified as 'recognized' by that participant to make a list of ten (10) pairs of recognized countries. After the experimenter draws out 10 pairs of countries and fills in the pre-printed questionnaire, the questionnaire then will be given to the participant in order for him/her to do the main task (see *Appendix 1*).

To give participants an incentive to exert more effort in the task, participants are promised (in the instruction of the task) that they will have a chance to receive a gift voucher as a reward if they have the highest number of correct answers and with less time needed compared to other participants who have the same most correct answers. No specific time restriction will be imposed in order to enable participants to do the task at their own speed so that it is more likely that participants can recall exactly what they have thought of while solving the task. Instead, the time consumed to complete all of ten pairs of each participant will be measured (by the experimenter). For the second task: Right after handling the answer sheet, the participant will be asked to recall what he/she has already done in the main task and answer the follow-up question for each pair of countries: "*What makes you come up with an inference that the country you chose has larger population than the other one in each pair?*" (see *Appendix 2*). The participant is expected to give explanation what reasons (or cues) that he/she bases his/her inferential choice on. These pieces of information will enable the experimenter to identify which decision strategy the participant has applied in each pair of countries.

Table 1: Anticipated probability knowledge cues

PROBABILITY CUE(S)	ECOLOGICAL VALIDITY OF THE CUE	HOW THE CUE SUPPOSEDLY CORRELATES WITH TARGET VARIABLE (I.E. POPULATION OF A COUNTRY)
LAND AREA	**0.8353**	POSITIVELY
FERTILITY RATE	**0.5127**	POSITIVELY
DEATH RATE	**0.4694**	NEGATIVELY
DENSITY	**0.4635**	POSITIVELY
NET MIGRANTS	**0.4308**	POSITIVELY
AGING POPULATION	N/A	
ENVIRONMENT	N/A	
ECONOMIICS DEVELOPMENT	N/A	
HEALTHCARE CONDITION	N/A	
WELFARE POLICY	N/A	
EDUCATION	N/A	
SEX STRUCTURE OF POPULATION	N/A	
GEOGRAPHIC LOCATION	N/A	
WEATHER CONDITIONS	N/A	

[1] Country's population is a suitable object for studying inferential choice decision making for the reason that there are many determinants or influencing factors on population of a country, which can be considered as potential probability cues that may be invoked to solve the task, whereas people's knowledge on this type of general knowledge are often uneven and limited.

To deal with potential probability cues prior to conduct the experiment, the experimenter engaged in quick interviews with five (5) participants (who will not be asked to join the official tasks) to test whether a participant is able to retrieve from memory for any cue(s) relating to a country's population, and what cues they can think of in just a short time. The question was "Which factors do you think that indicate larger/smaller population size of a country?" All of them were able to list out a few cues within a few minutes. All these anticipated cues are presented in the following table together with the ecological validity of each cue if related data enabling such calculation is available and accessible. The ecological validities of the cues were solved using EXCEL. For any cue which ecological validity cannot be calculated, the 'ecological validity' column will be remarked "N/A" (see *Table 1*).

This list of potential cues and their ecological validity (if possible to calculate) will be used as a reference source and is expected that can give good explanation for good/bad performance of the participants who are identified as potential users of TTB/TTL/the Minimalist in specific pairs of countries.

3. Empirical Results

3.1 Strategy Selection

All participants taking the main task have the same base i.e. ten pairs of countries in which both are recognized, yet they all have different degree of knowledge about the countries in the tasks. The result shows that participants choose decision strategy basing on their degree of knowledge relating to the two countries in each pair. There are several strategies observed across all choices of all participants.

(i) *Familiarity:*
When facing two countries which the participants do not have any specific information about, they tend to choose in favor of the one which sounds more familiar. The same tendency has been observed for pairs of countries in which the participant feels he knows more about one country but cannot recall any specific information. In this case, he will choose in favor of the one he things he knows more about.

(ii) *Recognition plus further information:*
In some cases, when participants know nothing but the name of one country in a pair and can recall one fact or specific information about the other country in that pair which cannot help to reach a direct solution or to apply TTB (or the like), he chooses the one he knows a fact or specific information about. Some other participants may know something about the two countries but still base their decisions on a piece of information like "Country A is a populous country" which they have read in newspaper or have known from the media rather than looking for cues or cue values that distinguish between two countries.

(iii) *Fluency heuristic:*
There is only one case in which participant no.15 revealed that she picked Hungary over Zimbabwe basing on the speed of information retrieval about the two countries. She recognized Hungary and recall some information faster than Zimbabwe then she picked Hungary without considering the information has been searched. This decision strategy fits the FH best and is the only one case across all cases.

The results that there are a number of cases in which participants really applied the above mention strategies give more evidence that in cases where decision makers face a pair in which both objects are recognized, they still can rely on the recognition cue plus further sign or information to help making choices.

(iv) *Direct solution:*
This strategy has been taken by participants who have enough certain information to make a logical deduction or to apply exclusion rule to arrive at the decisions.

(v) *Knowledge-cue-based strategy:*
When participants have some information about the two countries and can distinguish the two countries on one or more than one criterion, they take it as cues to make inferential choice. There are a large number of choices which have been made based on one cue only. These cases can be considered as that the participants are potential users of TTB or the two related heuristics because decisions in these cases have been made based on knowledge cue in a non-compensatory fashion. If the cue value about one country is unknown (missing information) or cue values of both are known but do not clearly distinguish then the participant tends to search for other cues and cue values. If no other can be found then decision will be based on the previous cue and choice will be made in favor of the country of which cue value is known if it is a positive value.

However, besides a large number of participants following this strategy, there are some cases in which the participants combined more than one cue in the inferential choice (knowledge cues combined) and the cue values of those cues suggested the same choosing tendency between the two countries. There are some cases where decisions based on more than one cue but the cue values found suggesting conflicting choosing tendencies. It means that in these cases, decisions were overturned or dominated by a cue which discriminates the two countries better than the other cues do according to the participants' own knowledge. These cases are evidence for knowledge cue based decisions in a compensatory fashion.

(vi) *Random guess:*
Participants made random choices in the two following scenarios:

- They have no information about the two countries and the familiarity cue does not discriminate between the two i.e. the two countries sound the same familiar.
- They know some information but it does not distinguish the two countries. This scenario is considered as part of TTB or TTL or the Minimalist heuristic in which the heuristic users search for cue(s) and cue values however no cue discriminates between the two options, then they must base their choices on random guess.

(vii) *Mixed strategies:*
There are many cases in which the participants revealed some speciic information which tells us that they seem to combine more than one strategy in their choice decisions. The choices, results (whether choices are correct or not) and the decision strategies are presented in *Appendix 3.*

3.2 Decisions based on knowledge cues

Cues that participants base their decisions on which have been observed across all choices together with possible cue values and choice tendencies for each cue are to be discussed one by one as follows:

(i) Continent cue
There are many cases in which participants consider the geographical location of the countries as a cue. This is obviously not a binary cue. Basically, there are seven available cue values consisting of Asia, Africa, North America, South America, Antarctica, Europe and Australia. Most of participants who base their choices on this cue have the tendency to pick an Asian country over a European country with a straight explanation that Asian countries are more populous than European countries. The same tendency has been observed in choices of pairs including one African country and a European country, or of pairs including one South American country and a European country.

However, for pairs which includes an Asian country and a African country, most of participants tend to not base on this cue but rather look for another cue or for further specific information. This means these participants consider 'Asian country' and 'African country' values as 'not discriminated' between the two countries. The same tendency occurs for pairs consisting of a South America country and an Asian country or pairs including a South America country and an African country. In a few cases, participants seem to base their choices on 'continent cue', however, when taking the explanations they revealed in the interview into account, the choices made actually were based on another type of cue rather than continent cue.

(ii) Land area cue

This is a cue with the highest ecological validity as previously calculated before conducting the experiment. In reality, one can hardly remember and recall a exact number of land area of a country, even approximate value. Rather, when facing two countries, participants tend to look for any information enabling them to make relatively comparison between the two countries' land area. So, basically, there are three comparison results which can be taken into account for inferential choices: one country's land area is larger than or smaller than or as same as that of the other in a pair. The result of the experiment shows that there is large proportion of participants who chose a country they know or think that it has larger land area than the other. There is a dominating number of cases in which participants apply knowledge cues to reach at the decision have based their choices on 'Land area cue' alone.

A few cases in which participants combined other cues before making choices have been seen. In some cases, information revealed by the participant shows that they intended to make choice in favor of one country basing on another cue like density cue or continent cue, then changed their decisions when taking land area cue into account. In other words, this is the sign that these participants followed the compensatory decision strategy in which their decision is overturned by one cue which shows a more highly discrimination between the two countries.

Among the countries appeared in the pairs, there are two special case which are Russia and Hong Kong. Participants who took land area cue into account always choose Russia in favor of another country whenever it is included in a pair. Their explanation in the interview confirms that they picked Russia because the land area cue in a pair including Russia and any country else is a highly discriminated cue because of the fact that Russia is among the largest countries in the world. For Hong Kong case, choosing tendency is reversed because of the fact that Hong Kong is a very small island.

(iii) Density cue

Taking the previously-calculated ecological validities as a reference, density cue's validity is slightly less than chance level, which suggests that this cue may not be a good cue to base on. However, from what shown in results of the experiment, in a few cases participants did consider density cue in the decision process but it is often combined with or dominated by another cue. There is only few choices which were based on density cue alone.

Density cue is found to be taken into account by the participants who have information about the geographic conditions or environment of a country such as a mountainous country, country with extreme weather or having a large part of its land area covered by forests, country's altitude is lower than the sea level.

One conflicting trend which can be observed from the results is that when facing a pair consisting of Hong Kong and another country, participants who revealed they had considered land area cue did pick the other country in the pair over Hong Kong whereas participants who had considered density cue would choose in favor of Hong Kong.

(iv) Fertility rate cue

According to the calculation before the experiment, this cue has an ecological validity just slightly above chance level. Results of the tasks show that in a few cases participants did base on this cue alone to reach the final choice and in a few cases this cue is combined with other cues.

Some confuses arose when determining decision strategy and the cue(s) in the decision when it comes to fertility rate cue because most of participants infer the cue values of the fertility rate (in the form of the comparative relation between the two countries in terms of fertility rate) from other cues. For example, participant no.7 picked Bolivia over Hungary and explained that Hungary is in Europe where most of the countries has low fertility rate whereas Bolivia is a country in South America where countries are known having high fertility rate. He applied the same strategy for Austria-Ghana pair.

Another cue which is closely related to fertility rate cue is Chinese culture cue. This cue was referred to by only few participants, for instance participant no. 2 and no. 20, when they faced a pair which includes Hong Kong or

Taiwan for the reason that these territories are influenced by Chinese culture which prefers large-size families with a lot of children.

(v) Economics cue: developed, developing, poor countries

Some participants recognized the country with a piece of information about its geographic location i.e. they can tell that country belongs to which continent, however, interpreted it as or combined it with a different cue that is whether that country is a developed or a developing or a poor country. The general choice tendency basing on this type of cue alone is that participants tend to choose a developing country or a poor to be more populous than a developed one and to choose a poor country to be more populous than a developing country.

Some participants did not tell in specific whether it is a developed, developing country, but rather chose the one they knew that it is less developed than the other in the pair. Some participants which based decisions on economics cue inferred that the more developed country to be more populous with the explanation that more developed countries have better health care system which implies a lower death rate. In a few cases, participants interpreted the information found relating to economics cue in terms of fertility rate cue. For instance, if a country is a developing country then it is more likely to have higher fertility rate than a developed country thus is more likely to be more populous.

(vi) Death rate cue

Like density cue, death rate cue has an ecological validity less than chance level. There are fewer cases in which the death rate cue is observed to be resorted to than cases in which other cues are based on to make choices. If participants have any information that tells them one country has a high death rate (or higher death rate than the other), they tend to choose the other country in the pair. The results show that only few participants considered this information as a cue. A cue related to death rate cue is the war zone cue (i.e. whether the country is in a zone that war often occurs like in the Middle East).

(vii) Migrants cue

As previously calculated, migrants cue has the lowest ecological validity in the anticipated cue lists. There are only few cases in which decisions are based on migrants cue and Germany appears in most of those cases and the explanation for choosing is that Germany has a lot of migrants.

4. Conclusion

In sum, the cues the participants really picked up from their minds when taking the task and revealed by themselves in the interviews are more diverse and complicated than the anticipated ones. There are some correlations between some cues, therefore, in some cases it is hard to precisely determine whether the decision is based on one cue or more and on which cue(s).

In some cases, different participants facing the same pairs of countries and having the same piece of information do not always base on the same cue or interpret this same information in the same way. Consequently, they did not always make the same choice in a same situation, or they made the same choice but due to different reasons in the very same case. In cases where choices have been made based on knowledge cues, there are a large number of choices made basing on one cue only which discriminates the two countries in the pair. However, there are a number of cases in which participants tend to integrate more than one cue in their decisions. In many cases among those, choices were overturned by one cue against the other cues.

In comparison of participants' performance in terms of accuracy and speed, the participants with better knowledge did perform better compared to the rest of participants except two participants with lower degree of knowledge but somehow performed as well as the two participants who exert best knowledge. Besides, the time needed is longer in the case the better knowledge participant tried to recall more specific knowledge. The surprising result that the two participants who took the longest time in the task drew the least correct choices compared to others raise a question that taking longer time in making a decision is really good or bad.

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Appendix 1: Questionnaire for Task 1

QUESTIONNAIRE FOR RESEARCH PAPER ON DECISION MAKING PROCESS IN TWO-ALTERNATIVE CHOICE TASK

Please give your answers to the same question for ten (10) different cases by choosing one of two countries (or dependent territories) in each of the ten (10) pairs below.
Please note that you will have a chance to receive a gift if you have the highest number of correct answers (and with less time, in case there are two or more participants have the same number of correct answers).

Start the task at: _____:_____ (time)

Which country/dependent territory in each pair below has the larger population?

1/ □ __________ □ __________

2/ □ __________ □ __________

3/ □ __________ □ __________

4/ □ __________ □ __________

5/ □ __________ □ __________

6/ □ __________ □ __________

7/ □ __________ □ __________

8/ □ __________ □ __________

9/ □ __________ □ __________

10/ □ __________ □ __________

Finish the task at: _____:_____ (time)

Participant's name: _______________. Phone No.____________

Finish at: _____:_____ (Please fill in the time you finish)

Appendix 2: Follow-up questionnaire

FOLLOW-UP QUESTIONNAIRE **(For the experimenter)**
Please answer the following question: *What makes you come up with an inference that the country you chose has larger population than the other one in each pair?* 1st pair: ____________________ ____________________ 2nd pair: ____________________ ____________________ 3rd pair: ____________________ ____________________ 4th pair: ____________________ ____________________ 5th pair: ____________________ ____________________ 6th pair: ____________________ ____________________ 7th pair: ____________________ ____________________ 8th pair: ____________________ ____________________ 9th pair: ____________________ ____________________ 10th pair: ____________________ ____________________ Participant's name: ______________. Phone No.______________

Appendix 3: Participants' results and reasons for the choice decisions[2]

Partici-pant no.	pairs of countries		Correct choice	Total time consumed (seconds)	STRATEGY	cue remark	Remark (why choose)
1	**Myanmar**	Germany			Knowledge cue - non compensation	continent cue	An Asian country vs a European country: Asian countries are often more populous
	Czech Republic	**Hong Kong**			Knowledge cue - non compensation	continent cue	An Asian country vs a European country: Asian countries are often more populous
	Netherlands	**Cambodia**			Knowledge cue - non compensation	continent cue	An Asian country vs a European country: Asian countries are often more populous
	Colombia	**Russia**	X		Knowledge cue - non compensation	Land area cue	Russia's land area is very large.
	Cuba	Iran			Random guess		Having no specific information about the 2 countries
	Nepal	Greece	X		Knowledge cue - non compensation	economics cue	Less developed countries are often more populous than developed countries.
	Chile	**Japan**	X		Recognition plus further information		Read somewhere Japan is a populous country, no specific information about Chile.
	Italy	**Malaysia**			Knowledge cue - non compensation	continent cue	An Asian country vs a European country, bc Asian countries are often more populous
	France	**Jordan**			Knowledge cue - non compensation	economics cue	Less developed countries are often more populous than developed countries.
	Hungary	Bolivia			Random guess		Having no specific information about the 2 countries
			3	**48**			
2	Myanmar	**Germany**	X		Knowledge cue - non compensation	Land area cue	Germany is larger than Myanmar -> incorrect
	Czech Republic	**Hong Kong**			Knowledge cues combined	Economics cue + Chinese culture cue	Czech Republic is more developed. Hong Kong is influenced by Chinese culture which prefers large-size families with more children.
	Netherlands	Cambodia	X		Recognition plus further information		Read somewhere about Amsterdam's population which is quite large, know something about Cambodia but no specific information.
	Colombia	**Russia**	X		Recognition plus further information		Russia belonged to the Soviet Union in the past and is a populous country.
	Cuba	Iran			Random guess		Having no specific information about the 2 countries

[2] Note: The countries in bold letters are the participants' choices

Partici-pant no.	pairs of countries		Correct choice	Total time consumed (seconds)	STRATEGY	cue remark	Remark (why choose)
	Madagascar	**Greece**			Knowledge cue - compensation	Land area cue + Density cue + fertility rate (Decision is dominated by Land area cue and Density cue)	Greece is a large country -> incorrect + Madagascar has large area of forests so less density -> correct + Madagascar has higher fertility rate -> correct
	Nepal	**Iraq**	X		Random guess		Having no specific information about the 2 countries
	Chile	Japan			Knowledge cues combined	Fertility rate cue + aging country cue	Japan is an aging country, has low fertility rate because of rising number of young people who are not interested in getting marriage.
	Italy	Malaysia	X		Random guess		Because no cues distinguish btw the 2 countries.
	France	Jordan	X		Knowledge cue - non compensation	Land area cue	Jordan is a small country -> correct
			6	**73**			
3	Myanmar	**Germany**	X		Knowledge cue - non compensation	Land area cue	Germany is larger than Myanmar -> incorrect
	Czech Republic	Hong Kong	X		Knowledge cue - non compensation	Land area cue	Hong Kong is very small -> correct. Czech Republic is a large country -> incorrect.
	Netherlands	**Cambodia**			Knowledge cue - non compensation	Land area cue	Cambodia is larger than Netherlands -> incorrect
	Colombia	**Russia**	X		Knowledge cue - non compensation	Land area cue	Russia is larger than Colombia -> correct
	Uganda	Iran			Knowledge cue - non compensation	continent cue	Uganda is in Africa, Iran is in Asia. African countries are often more populous than Asian countries.
	Madagascar	Greece	X		Knowledge cue - non compensation	continent cue	Madagascar is in Africa, Greece is in Europe. African countries are often more populous than European countries.
	U.K.	Hungary	X		Recognition plus further information		U.K. comprises several portions so it is populous.
	Nepal	**Iraq**	X		Knowledge cue - non compensation	Land area cue	Iraq is larger than Nepal -> correct.
	Chile	Japan			Knowledge cue - non compensation	continent cue	Chile is a country in South America. A South American country is more likely a populous country.
	Italy	**Malaysia**			Knowledge cues combined	continent cue + Land area cue	Italy is a European country. Malaysia is an Asian country AND comprises many small islands so it has larger land area-> correct.

Partici-pant no.	**pairs of countries**		**Correct choice**	**Total time consumed (seconds)**	**STRATEGY**	**cue remark**	**Remark (why choose)**
			6	**46**			
4	**Myanmar**	Germany			Knowledge cue - non compensation	Economics cue	Myanmar is less developed than Germany. Less developed countries are often more populous than developed countries.
	Czech Republic	Hong Kong	x		Knowledge cue - non compensation	Land area cue	Hong Kong is smaller than Czech Republic.
	Netherlands	**Cambodia**			Knowledge cue - non compensation	Economics cue	Less developed countries are often more populous than developed countries.
	Colombia	**Russia**	x		Knowledge cue - non compensation	Land area cue	Russia is larger than Colombia.
	Uganda	**Iran**	x		Familiarity		Choose the one which sounds more familiar
	Madagascar	**Greece**			Familiarity		Choose the one which sounds more familiar
	U.K.	Hungary	x		Random guess		
	Nepal	**Iraq**	x		Familiarity		Choose the one which sounds more familiar
	Chile	**Japan**	x		Random guess		
	Italy	**Malaysia**			Random guess		
			6	**46**			
5	**Hungary**	Bolivia			Familiarity + Knowledge cue - non compensation	Land area cue	Country which is more familiar seems to be smaller and so to be less populous.
	Austria	Ghana			Familiarity + Knowledge cue - non compensation	Land area cue	Country which is more familiar seems to be smaller and so to be less populous.
	Kenya	**Saudi Arabia**			Familiarity + Knowledge cue - non compensation	Land area cue	Country which is more familiar seems to be smaller and so to be less populous.
	Thailand	**Somalia**			other strategy		
	Myanmar	**Germany**	x		other strategy		
	Czech Republic	Hong Kong	x		Knowledge cue - non compensation	Land area cue	Hong Kong is a small territory which belongs to China, so its land area is small.
	Netherlands	Cambodia	x		other strategy		
	Mozambique	**Venezuela**	x		Familiarity		Know more about Venezuela
	Belgium	Morocco			other strategy	Land area cue	
	Colombia	**Russia**	x		Knowledge cue - non compensation	Land area cue	Colombia is developed from a small island. Russia is very large.

Partici-pant no.	pairs of countries		Correct choice	Total time consumed (seconds)	STRATEGY	cue remark	Remark (why choose)
			5	**48**			
6	**Hungary**	Bolivia			Familiarity		Choose the one which sounds more familiar
	Madagascar	**Greece**			Recognition plus further information		Watched 'Madagascar' film -> scarce population
	Austria	**Ghana**	x		Knowledge cue - non compensation	economics cue	Less developed countries are often more populous than developed countries.
	Kenya	Saudi Arabia	x		Knowledge cue - non compensation	economics cue	Kenya needs international aids -> poor country
	Thailand	Somalia	x		Familiarity		Know more about Thailand
	Myanmar	Germany			other strategy		Myanmar is closer to Vietnam and more populous than Vietnam
	Czech Republic	Hong Kong	x		Knowledge cue - compensation	Density cue + Land area cue (Decision is overturned by Land area cue)	Although Hong Kong's density is high, its land area is very small. So its population is small.
	Netherlands	**Cambodia**			Knowledge cue - non compensation	economics cue	Less developed countries are often more populous than developed countries.
	Nepal	Iraq			Random guess		No information. Guess.
	Israel	Serbia			Random guess		No information. Guess.
			4	**105**			
7	Hungary	**Bolivia**	x	**74**	Knowledge cue - non compensation	fertility rate cue	Hungary: European country -> low fertility rate, Bolivia: South America country -> high fertility rate.
	Madagascar	Greece	x		Direct solution		Greece's population was only about 10 million (5 years ago) whereas Madagascar is among the largest islands in the world.
	Austria	**Ghana**	x		Knowledge cue - non compensation	fertility rate cue	Same as the first case. Austria: European country -> lower fertility rate, Ghana: African country -> high fertility rate.
	Kenya	**Saudi Arabia**			Knowledge cue - compensation	continent cue + Land area cue (decision is overturned by Land area cue)	Kenya is an African country which is more likely to be more populous, however, Saudi Arabia is the largest countries among the Gulf countries.

Partici-pant no.	**pairs of countries**		**Correct choice**	**Total time consumed (seconds)**	**STRATEGY**	**cue remark**	**Remark (why choose)**
	Thailand	Somalia	x		other strategy	Consider continent cue, but decision is based on some specific information.	Somalia is an African country which is more likely to be more populous, however, Thailand is one of the most populous countries in Southeast Asia whereas Somalia is extremely poor.
	Myanmar	**Germany**	x		Knowledge cues - non compensation	Consider Land area cue -> not distinguish. Decision based on migrants cue	Land area of the two countries are about the same, Germany is the largest countries in Europe and has a lots of migrants
	Czech Republic	Hong Kong	x		Direct solution		Hong Kong's population was only about 7 million (5 years ago) whereas Czech Republic is a large country.
	Netherlands	Cambodia	x		Direct solution		Cambodia's population is only about 5 to 10 million (5 years ago) whereas Netherlands has a large number of migrants.
	Nepal	**Côte d'Ivoire**			Knowledge cues combined	Density cue + Fertility rate cue	Nepal is a mountainous country so its population is scarce, whereas Ivory Coast -like Ghana case - is a country with high fertility rate
	Uganda	**Iran**	x		other strategy	Consider continent cue, but decision is based on some specific information.	Uganda is an African country, located close to Kenya, however, it cannot be the case that it has larger population than Iran does because Iran is originated from the Persian Empire which was populous and its land area is large also.
			8				
8	**Hungary**	Bolivia			Familiarity		Choose the one which sounds more familiar
	Madagascar	**Greece**			Familiarity		Know more about Greece. Do not know anything about Madagascar.
	Austria	Ghana			Familiarity		Austria sounds more familiar. Not sure but maybe Ghana is in Africa
	Kenya	Saudi Arabia	x		Recognition plus further information		Kenya is an African country and seems populous (watched on TV).
	Thailand	Somalia	x		other strategy		Somalia is an African country. Thailand's population approximates Vietnam's population.
	Myanmar	**Germany**	x		Recognition plus further information		Myanmar has a lot of Islamic inhabitants (-> incorrect info). Know more about Germany, but cannot tell in specific.
	Czech Republic	Hong Kong	x		Knowledge cue - compensation	Density cue + land area cue (Decision is overturned by Land Area cue)	Hong Kong is crowded but very small.

Partici-pant no.	pairs of countries		Correct choice	Total time consumed (seconds)	STRATEGY	cue remark	Remark (why choose)
	Netherlands	Cambodia	x		Random guess		No cue distinguish between the two countries.
	Nepal	**Côte d'Ivoire**			Random guess		No information. Guess.
	Uganda	**Iran**	x		Familiarity		Iran sounds more familiar. No information about Uganda.
			6	**62**			
9	**Myanmar**	Germany			Knowledge cue - non compensation	continent cue	Myanmar is an Asian countries. Germany is a European country. Most of Asian countries are more populous than European countries.
	Czech Republic	**Hong Kong**			Knowledge cue - non compensation	density cue	Hong Kong's density is high. Czech Republic's density is low.
	Netherlands	**Cambodia**			Knowledge cues combined	density cue + land area cue	Netherlands is a developed country and its altitude is lower than the sea level so its density is low. Cambodia is a large country.
	Colombia	**Russia**	x		Knowledge cue - non compensation	land area cue	Russia is a very large country compared to other countries.
	Madagascar	Greece	x		Random guess		Madagascar is an island. Not sure about Greece's land area, so guess.
	Nepal	**Iraq**	x		Knowledge cue - non compensation	Density cue	Nepal is a mountainous country so its population is scarce. No specific information about Iraq.
	Chile	Japan			Knowledge cues combined	Continent cue + Fertility rate cue + young/aging country cue	Chile is a South American country. Japan is an aging country and has low fertility rate.
	Italy	**Malaysia**			Knowledge cue - non compensation	continent cue	Malaysia is an Asian country. Italy is a European country. Most of Asian countries are more populous than European countries.
	Israel	**Serbia**	x		Knowledge cues combined	land area cue + death rate cue	Israel is not large and in the war zone. No specific information about Serbia.
	Bolivia	Hungary	x		Random guess		Hungary is used to belong to the Soviet Union (-> incorrect info). Do not know any information about Bolivia. So, guess.
			5	**36**			
10	**Greece**	Madagascar			Random guess		Madagascar is an island. Greece is used to be the center of Western civilization and has a long developing history. Guess.

Partici-pant no.	pairs of countries		Correct choice	Total time consumed (seconds)	STRATEGY	cue remark	Remark (why choose)
	Uganda	**Iran**	x		Random guess		Uganda: African country, Iran: Asian country; know where they are on the map but these do not tell anything, so guess.
	Austria	**Ghana**	x		Knowledge cue - non compensation	continent cue	Austria: European country, Ghana: African country. African countries are more populous than European country.
	Kenya	**Saudi Arabia**			Recognition plus further information		The participant works in a trade finance dept of a bank and knows that Saudi Arabia has a lot of trade transactions with Vietnam. No information about Kenya.
	Thailand	Somalia	x		Knowledge cues combined		Somalia: African country, poor. Thailand: Asian country with many well-known and crowded cities.
	Myanmar	**Germany**	x		Knowledge cue - non compensation	migrants cue	Germany has a lot of migrants.
	Czech Republic	**Hong Kong**			Knowledge cue - compensation	Land area cue + Density cue (Decision is overturned by Density cue)	Hong Kong is a small territory but it is very crowded.
	Netherlands	Cambodia	x		Knowledge cue - non compensation	land area cue	As I remember, Netherlands' land area is quite large'
	Nepal	**Côte d'Ivoire**	x		Knowledge cue - non compensation	Density cue	Nepal: large of land area covered by forests. Ivory Coast: near the sea.
	U.K.	Hungary	x		Recognition plus further information		U.K. comprises 4 portions.
			7	**90**			
11	**Hong Kong**	Taiwan			Knowledge cue - non compensation	land area cue	Hong Kong's land area is larger than Taiwan (-> incorrect.)
	Rwanda	**Mexico**	x		Recognition plus further information		Rwandan genocide.
	Japan	**Chile**			Knowledge cues combined	land area cue + fertility rate cue	Japan: smaller, lower fertility rate compared to Chile.
	Kenya	**Russia**	x		Knowledge cue - compensation	land area cue + fertility rate cue (decision is dominated by Land area cue)	Russia: very large, low fertility rate.
	Somalia	**Hungary**			Knowledge cue - compensation	Consider continent cue, decision is overturned by Land area cue	Somalia: African country. But Hungary is larger than Somalia -> incorrect.

Partici-pant no.	pairs of countries		Correct choice	Total time consumed (seconds)	STRATEGY	cue remark	Remark (why choose)
	Belgium	Haiti	x		Knowledge cue - non compensation	land area cue	Haiti is very small.
	Senegal	**Myanmar**	x		Knowledge cue - non compensation	land area cue	Myanmar is larger than Senegal.
	Uganda	**Malaysia**			Knowledge cue - non compensation	land area cue	Malaysia is larger than Uganda.
	Bolivia	Philippines			Knowledge cue - non compensation	land area cue	Philippines is smaller than Bolivia
	Nepal	**Iraq**	x		Knowledge cue - non compensation	land area cue	Iraq is larger than Nepal
			5	**80**			General strategy: base on land area, density and fertility rate. Land area comparison bases on memory about those countries on the map.
12	**Nepal**	Senegal	x		Familiarity		Nepal sounds more familiar
	Madagascar	**Hong Kong**			Knowledge cue - non compensation	economics cue (different choosing tendency)	Hong Kong is more developed.
	Haiti	**Tanzania**	x		Knowledge cue - non compensation	economics cue (different choosing tendency)	Tanzania is more developed.
	Malaysia	Saudi Arabia			Random choice		Random choice
	Cameroon	Taiwan	x		Knowledge cue - non compensation	Land area cue	Taiwan is small, Cameroon is larger.
	Italy	Peru	x		Knowledge cue - non compensation	economics cue (different choosing tendency)	Italy is more developed.
	Bolivia	Iraq			Knowledge cue - non compensation	economics cue (different choosing tendency)	Bolivia is more developed.
	Serbia	**South Africa**	x		Knowledge cue - non compensation	Land area cue	South Africa's land area is larger.
	Chile	U.K.			Random choice		Random choice
	Ethiopia	**Hungary**			Recognition plus further information		"Because Hungary is a happy country."
			5	**57**			
13	Malaysia	**Bulgaria**			Knowledge cue - non compensation	Land area cue	Malaysia is smaller than Bulgaria
	Saudi Arabia	Algeria			Familiarity		Saudi Arabia sounds more familiar
	Haiti	Peru			Knowledge cue - non compensation	Land area cue	Haiti is in Africa where there is populous.

Partici-pant no.	pairs of countries		Correct choice	Total time consumed (seconds)	STRATEGY	cue remark	Remark (why choose)
	Israel	**Serbia**	x		Random choice		Random choice
	Mexico	Ecuador	x		Knowledge cue - non compensation	Land area cue	Mexico is larger than Ecuador
	Iraq	**Chile**			Knowledge cue - non compensation	Land area cue	Iraq is not a large country, Chile is larger.
	Venezuela	**U.A.E**			Recognition plus further information		Read an article about U.A.E which reads that U.A.E is a populous country.
	Hong Kong	Bangladesh			Knowledge cue - non compensation	Chinese culture cue	Hong Kong belongs to China so it is populous
	Tanzania	Greece	x		Random choice		Random choice
	Mali	**Nepal**	x		Familiarity		Do not know anything about Mali. Have heard something about Nepal.
			4	**60**			
14	Mozambique	**Venezuela**	x		Knowledge cue - non compensation	continent cue	Venezuela is in South America
	Honduras	Turkey			Random choice		Random choice because economics cue and land area cue do not discriminate.
	Belgium	Morocco			Random choice		Random choice because economics cue and land area cue do not discriminate.
	Belarus	**Germany**	x		Knowledge cue - non compensation	Land area cue	Base on land area
	Colombia	**Russia**	x		Knowledge cue - non compensation	Land area cue	Base on land area
	Iran	**Malaysia**			Knowledge cue - non compensation	Density cue	Choose Asian country because Asian countries have high density.
	Thailand	Bangladesh			Knowledge cue - non compensation	Density cue	Choose Asian country because Asian countries have high density.
	Ethiopia	**Israel**			Random choice		Random choice because economics cue and land area cue do not discriminate.
	Nepal	**Chile**			Random choice		Random choice because economics cue and land area cue do not discriminate.
	Canada	Uganda			Knowledge cues combined	Land area cue + economics cue	Canada is larger and more developed.
			3	**105**			General strategy: base on continent cue, economics cue (how developed the country is) and which is more popular on media

Partici-pant no.	pairs of countries		Correct choice	Total time consumed (seconds)	STRATEGY	cue remark	Remark (why choose)
15	**Chile**	Germany			Knowledge cues combined	Land area cue + fertility rate cue	Land area cue (Chile is larger than Germany) -> Note: incorrect info. Chile has a lower education level than Germany so its fertility rate if high whereas Germany has a low fertility rate.
	Israel	North Korea			Familiarity		Know more about Israel.
	Madagascar	**U.A.E**			Recognition plus information		Madagascar is in Africa but do not know about its population. U.A.E 's population size is not small.
	Morocco	**Peru**			Familiarity		Peru sounds more familiar
	Iran	**Cambodia**			Knowledge cues combined	Fertility rate cue + Land area cue	Cambodia has a high fertility rate. Iran has a small land area-> Note: incorrect
	Zimbabwe	**Hungary**			Fluency heuristic		Choose Hungary because of faster retrieval of information.
	Colombia	Japan			Knowledge cue - non compensation	Land area cue	Colombia's land area is larger than Japan.
	Bolivia	Honduras	x		Familiarity		Choose the one which sounds more familiar
	Cuba	Angola			Familiarity		Choose the one which sounds more familiar
	France	Jordan	x		unknown		Jordan's land area is smaller than France. Base on land area and density… (uncertain)
			2	**205**			
16	**Cambodia**	Mozambique			Knowledge cue - non compensation	Decision based on economics cue	Cambodia is in Asia and Mozambique is in Africa: not distinguish, Land area of the two countries are about the same. Cambodia is more developed.
	South Korea	Australia	x		Knowledge cue - non compensation	Fertility rate cue	Australia is an aging country with a high quality of living conditions -> lower fertility rate compared to an Asian country like South Korea.
	Dominican Republic	**U.K.**	x		Knowledge cue - non compensation	Economics cue	Based on economics development. U.K. is more developed (then they have better living condition -> lower death rate)
	Sri Lanka	**Germany**	x		Knowledge cue - non compensation	Land area cue	Sri Lanka's land area is smaller than Germany.
	U.A.E.	Sudan			Knowledge cue - non compensation	Land area cue	Based on land area
	South Africa	Cameroon	x		Familiarity		No information about Cameroon. Heard of South Africa more often.
	Angola	**Ukraine**	x		Familiarity		Heard of Ukraine more often.

Partici-pant no.	pairs of countries		Correct choice	Total time consumed (seconds)	STRATEGY	cue remark	Remark (why choose)
	Philippines	**Spain**			unknown		Think both are the same, however, choose Spain because of its long history of development
	Canada	**Cuba**			unknown		Canada is more developed and its land area is larger, however its density is low. Cuba is a developing country so its labor force is large.
	Italy	**Malaysia**			Knowledge cue - non compensation	Land area cue	Based on land area
			5	**50**			
17	Iraq	**Egypt**	x		Knowledge cues combined		Read somewhere that Egypt is populous. Iraq is in the war zone -> high death rate.
	Somalia	**Chile**	x		Familiarity		Chile sounds more familiar.
	Germany	Algeria	x		Knowledge cue - non compensation	Land area cue	Algeria is a small country in Africa or in West Asia and the size of the country (on the map) is not large. Certain that Germany is a very large country.
	France	Ecuador	x		Random guess		Random guess
	Thailand	**Mozambique**			unknown		Have some information about Mozambique which are black people, a populous country and has a large number of poor people.
	Philippines	Cuba	x		Direct solution		Philippines is more populous than Cuba by transitive comparison with Vietnam's population (certainly know that Philippines are more populous than Vietnam and Vietnam is more populous than Cuba)
	Niger	**Peru**	x		Familiarity		Choose the one which sounds more familiar
	Portugal	Jordan	x		Familiarity		Choose the one which sounds more familiar
	Romania	Honduras	x		Familiarity		Choose the one which sounds more familiar
	Pakistan	**Uzbekistan**			Recognition plus further information		A friend once said that there are many flights to Uzbekistan
			8	36			
18	**Chile**	Germany			Knowledge cues combined	Land area cue + Density cue	Germany is smaller than Chile because most of European countries are small -> Incorrect. Germany's density is low because most of European countries has low density.
	Israel	North Korea			Knowledge cue - non compensation	Density cue	Israel's density is higher than North America

Partici-pant no.	pairs of countries		Correct choice	Total time consumed (seconds)	STRATEGY	cue remark	Remark (why choose)
	Madagascar	**U.K.**	x		Recognition plus further information		U.K. is a populous country (read on newspaper)
	Morocco	Peru	x		Random choice		Random choice
	Philippines	Cambodia	x		Knowledge cue - non compensation	Land area cue	Cambodia's land area is very small. (Participant's hometown is next to Cambodia).
	Zimbabwe	**Hungary**			Familiarity		Do not know much about Zimbabwe, so pick Hungary
	Russia	South Sudan	x		Knowledge cue - non compensation	Land area cue	Russia's land area is larger.
	Bolivia	**Honduras**			Familiarity		Honduras sounds more familiar
	Congo - DR	**Angola**			Familiarity		Angola sounds more familiar
	France	Jordan	x		Familiarity		Know more about France (thanks to reading newspaper and listening to the news).
			5	**36**			
19	Mozambique	**Venezuela**	x		Random choice		Random choice after considering continent cue (Venezuela is in South America, Mozambique is in Africa)
	Honduras	**Turkey**	x		Familiarity		Know more about Turkey
	Belgium	Morocco			Random choice		
	Kazakhstan	**Mexico**	x		Knowledge cues combined	Density cue	Kazakhstan is in West Asia -> low density due to severe weather conditions. Mexico is one among the populous countries.
	Belarus	**Germany**	x		Familiarity		Know more about Germany.
	Colombia	**Russia**	x		Direct solution		Russia is among the top of most populous countries.
	Iran	**Malaysia**			Knowledge cue - non compensation	War zone cue	Iran is in the Middle East which is more likely to be less populous.
	Thailand	Bangladesh			Recognition plus further information		Both countries are in Asia. Thailand is among the populous countries in Asia.
	Ethiopia	Israel	x		Direct solution		Israel's population is only about 6 million people. -> correct.
	U.K.	Uganda	x		Direct solution		U.K. is among the top of most populous countries.
			7	**31**			
20	**Australia**	Cambodia	x		Knowledge cues combined		Australia has large land area and no war.

Partici-pant no.	**pairs of countries**		**Correct choice**	**Total time consumed (seconds)**	**STRATEGY**	**cue remark**	**Remark (why choose)**
	Chile	Germany			Knowledge cues combined		Chile is in South America and is a developing country.
	Japan	**Taiwan**			Knowledge cue - non compensation	Chinese culture cue	Taiwan is influenced by Chinese culture which prefers large-size families with more children.
	Cuba	**Hong Kong**			Knowledge cue - non compensation	Chinese culture cue	Hong Kong is influenced by Chinese culture which prefers large-size families with more children.
	Myanmar	**South Korea**			Random guess		Random guess, no information discriminates
	Philippines	Canada	x		Knowledge cue - non compensation	continent cue	Asian countries are more populous.
	Venezuela	**Thailand**	x		Knowledge cue - non compensation	continent cue	Asian countries are more populous.
	Italy	**Mexico**	x		Knowledge cue - non compensation	continent cue	European countries are less populous than South American country.
	North Korea	**Malaysia**	x		Knowledge cue - non compensation	Economics cue	North Korea is sanctioned due to developing nuclear weapons and thus less developed than Malaysia.
	U.K.	**Russia**	x		Knowledge cue - non compensation	Land area cue	Russia has the largest land area in the world.
			6	**33**			

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The Impact of Financial Literacy on Investment Decisions Between Saving and Credit: Studies on Sharia Bank Customers in the Special Region of Yogyakarta

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Abstract
Investment decision-making will involve cognitive, psychological, social and behavioral aspects. Financial literacy includes financial knowledge, financial behavior, financial awareness and financial attitudes. This study aims to analyze the impact of financial literacy on investment decisions of Sharia Bank customers. The sampling technique uses random sampling on Sharia Bank customers in the Special Region of Yogyakarta, Indonesia. Data analysis using multiple regression. The results reveal that 1) Financial knowledge has a positive effect on investment decisions. 2) Financial behavior has a positive effect on investment decisions. 3) Financial awareness has a positive effect on investment decisions. 4) Financial attitudes has a positive effect on investment decisions.

Keywords: Financial Knowledge, Financial Behavior, Financial Awareness and Financial Attitude

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Introduction

The development of digital banks is an illustration of the condition of the entire digitalization of the banking world nationally and internationally. A quick response is needed to ratify the financial inclusion and literacy program in the expansion of profit-sharing based banking services. Islamic banks are banks that carry out their business activities based on sharia principles. Islamic banks act as an intermediary institution (intermediary) between parties that experience a unit surplus and unit deficit (Salam,2018). The research reveals that financial inclusion is access, community groups, and systems finance affects banking performance (Demirgüç-Kunt et al., 2008; Sarma & Pais, 2008; Sarma, 2008; Demirgüç-Kunt & Klapper, 2012). This will increase the ease with which people can use banking. On the other hand, increasing public financial literacy is urgently needed to improve financial and economic performance.

The development of the Islamic banking system in Indonesia is carried out within the framework of the dual-banking system framework of the Indonesian Banking Architecture (API). The characteristics of the Islamic banking system that operate based on the profit-sharing principle provide an alternative banking system that is mutually beneficial for the public and the bank. Emphasizing the aspects of fairness in transactions, ethical investment, togetherness and brotherhood values, and avoiding speculative activities in financial transactions.

The growth of the Islamic finance industry in DIY continues to show positive growth, it can be seen from the increasing number banking which opened a sharia business unit in the region. OJK recorded the number of sharia business units in DIY as as many as 59 units. Until early 2019, there were 59 units in Yogyakarta with total assets reaching 6.3 trillion rupiahs so that the room for sharia banking, especially financing, is still wide open (OJK, 2020).

Joining as a Sharia Bank customer with the aim of saving and getting benefits such as: easy access to credit, dividends that can be received in favorable circumstances, plans for retirement, ease of arrangements for the purchase of housing or land, among others (Wameyo, 2015; Salam, 2018). However, these goals are often not met or partially met due to lack of financial literacy. A study in India by Bhushan (2014) on the relationship between investment behavior and financial literacy has found that with the new age, financial products, awareness and investment preferences largely depend on individual financial literacy. That is, the higher the level of understanding of financial knowledge, the higher the chances of making investment decisions.

Mian's (2014) research on the level of financial literacy and its effect on investment and other financial decisions, shows that there is a negative relationship between financial literacy and the need for investment decisions. In this study, financial literacy is shown by pension plans and stock market participation. The weakness of Mian's (2014) research is that the indicators are less precise, because the research ignores the fact that financial literacy is a comprehensive combination of an individual's behavior, attitudes, skills, knowledge and awareness. Tabiani and Mahdzan (2012) explored the impact of financial knowledge on saving in Malaysia. The results show that there is a significant positive relationship between financial literacy and the decision to save.

There is an inconsistency in the results of the relationship between financial literacy and investment decisions. Some studies have found a negative effect (Mian, 2014), others are positive (Mahfund, 2012; Tabiani & Mahdzan, 2012) and also no correlation (Atakora, 2013). Further research is needed to prove the nature of this effect, this relationship.

The economic prospects in DIY are going well. Economic growth grew by 5.9% or above national. The economic growth in DIY, one of which is supported by the actors UMKM which amounted to nearly 98.4%. Currently, major economic challenges occur especially in the global market. This is due to uncertainty. The global economy is growing but not evenly. Not to mention the trade war between United States of America with China (OJK, 2020). Yogyakarta has a growth in Sharia-based third party funds that continues to increase. It is believed that this will increase the penetration and customer base of Islamic banking. Special Region of Yogyakarta too has great economic potential, especially to support the industrial sector, trade, processing and accommodation provision.

The main objective of this study is to examine the effect of financial literacy on investment decisions on customers of Islamic banks in Yogyakarta. More detailed objectives are as follows: 1) To examine the effect of financial knowledge on customer investment decisions. 2) To examine the effect of financial behavior on investment decisions. 3) To test the effect of financial awareness on investment decisions. 4) To test the effect of financial attitudes on investment decisions

The targeted findings of this study are: 1) Finding empirical evidence of influence financial literacy on investment decisions. 2) Finding empirical evidence of a research model that is able to explain the influence of financial knowledge, financial behavior, financial awareness, and financial attitudes on investment decisions. 3) This study is aimed at making several useful contributions, namely the contribution of empirical evidence, managerial contributions and methodological contributions.

Literature Reviews and Hypotheses Development

Seeing the facts from the researchers, that financial decision making can be rational as well as irrational. Every investment decision making, including in the group of an investor, will involve cognitive, psychological, social and behavioral aspects (Elster, 1998; Hermalin and Isen, 2000 in Asri, 2013). Hogarth (2002) defines financial literacy as the way people understand and use basic knowledge of financial concepts to plan and manage financial decisions, such as in insurance, investing, saving, and budgeting. Financial literacy includes financial knowledge, financial behavior, financial awareness and financial attitudes. Mugo (2016) defines financial knowledge as a significant financial concept, such as inflation, calculation of interest rates and diversification of risk in a portfolio. Financial behavior is the ability to prepare a budget and obtain loans and savings (Amos, 2014). Financial awareness refers to an individual's ability to understand financial education and financial education resources (OECD, 2006; Mugo, 2016). Financial attitude is the ability to choose and invest and the preferences of some alternatives are over (Pankow, 2012).

Multiple Process Theory

Multiple process theory reveals that the decision-making process is influenced by intuition and cognitive processes (Asri, 2013; Mugo, 2016). This theory has been extensively researched in the field of behavioral finance. This theory reveals that bias, framing and heuristic factors are influenced by the system (Alós-Ferrer and Hügelschäfer 2012; Asri, 2013). Previous studies have shown that both systems are suitable for improvement and intervention in decision making (Reyna, 2004). Crusius, Horen, and Mussweiler (2012) argue that a need arises when someone evaluates and analyzes economic or financial aspects. Godek and Murray (2008) analyzed the role of rational and experiential processing modes on willingness to pay. Dual-process theory is useful in explaining whether investment decisions are based on intuitive thinking,

Planned Behavior Theory

The main proponent of planned behavior theory is Ajzen (1988) who analyzes individual behavior. Because behavior can be predictive or intentional. TPB argues that human behavior can be categorized as behavioral beliefs, normative beliefs and control beliefs. Behavioral beliefs are a possible consequence of individual behavior. Normative beliefs are expectations from others for our behavior and control beliefs for behavioral performance (Asri, 2013). Sharia Bank customers take actions that may be triggered by attitude, behavior and awareness. Theoretically, financial behavior, financial awareness and financial attitudes affect investment decisions in Islamic Bank customers (Salam, 2018).

Social Learning Theory

Bandura (1960) argues that the learning process can only occur through direct observation or instruction. This theory was developed to enhance the stimulus-response theory which explains how and why humans respond to certain attributes. Bandura argues that there are weaknesses associated with the learning process model which illustrates that social learning variables are related to certain responses found in human behavior (Asri, 2013). More than that, Rotter's theory reveals that behavior change is related to subjective expectations. This theory is suitable for this research, because most investment decisions can be made or linked to a learning process that can be formal or informal.

Expected Utility Theory

Individual preference for one investment over other investments, basically because the utility expected is higher than the alternative investment. Investors expect to maximize utility. Davis, at.all (1997) and Asri (2013) reveal that utility theory can be explained in a situation when the decision-maker chooses between a risky prospect and the utility value that is expected to be realized. The decision is obtained by evaluating the utility of the expected outcome multiplied by the probability. Theory uses the assumption that the decision-maker is sure of the probability of each outcome.

Neumann and Morgenstern (1944), Asri (2013) show that the normative problem is rationality. Rationality is the choices and desires that individuals have. Although what individuals choose based on rational choice theory, further research and evidence is needed for the consistency of the theory. Expected Utility Theory can also be interpreted as the behavior of rationality by following certain substantive rules. This theory is relevant in research to examine the effect of human financial behavior on investment decisions.

Empirical Overview

This literature review presents studies on the effects of financial knowledge management, financial behavior, financial awareness and financial attitudes on investment decisions.

Financial Knowledge and Investment Decisions

Greenspan (2002) concluded that financial knowledge that is applied appropriately by individuals can obtain maximum utility from resource planning and utilization. Greenspan (2002) argues that when a person has increased financial knowledge, there is an increased chance of being able to make budgets, save for the future and make investment decisions. Using an Internet-based survey, Robb and Sharpe (2009) sampled undergraduate and graduate students electronically on financial knowledge in credit card use decisions. The results showed that financial knowledge is the main factor that determines how credit card decisions are.

Rooij, Lusardi and Alessie (2007) revealed that financial knowledge is related to financial instrument differentiation and portfolio risk diversification. This study also concludes that there is a need to increase financial knowledge in order to make wise financing decisions. Financial knowledge influences what will be stored and what will be invested. Lusardi (2008) argues that a person needs financial knowledge and financial concepts to make decisions about saving and investment.

Financial Behavior and Investment Decisions

Tyrimai (2013) found that the majority of households were involved in saving because of fear and unexpected events. The customer wants to protect against reduced income or emergency expenses. Financial behavior as a need to address financial literacy problems. Brown and Graf (2012) reveal that there is an influence on financial behavior and household investment in Switzerland. Financial behavior is measured by lending by individuals, retirement planning and mortgages. The empirical results of 1,500 households show a strong correlation between levels of financial behavior, and participation in financial markets, pension savings and mortgage loans. The results of this study are consistent with research by Lusardi et.al (2011) in Germany and Mahdzan and Tabiani (2012) in Malaysia. Uma, et.all, (2014), Mugo (2016) concluded that aggregate saving behavior is a prerequisite for making investment decisions.

Financial Awareness and Investment Decisions

Bhushan (2014) examined the effect of financial literacy and investment behavior on individuals who receive monthly salaries from government and non-government in Indonesia and India. Financial literacy is assessed in three dimensions of financial attitudes, behavior, knowledge and awareness on a 5-likert scale. The results reveal that high levels of financial literacy create financial awareness. Investment decisions become wiser. Individuals with low financial knowledge will choose and invest in limited traditional products. Duflo and Saez (2003, 2004), Madrian and Shea (2001), Al-Tamimi and Kalli (2009) found evidence that individuals who have financial awareness will be wiser in investing. Investors who have work experience in banking or have a high degree of education and are trained in financial matters will make investments easily.

Financial Attitudes and Investment Decisions

Ibrahim and Alqaydi (2013) examined the effect of financial attitudes on investment in the United Arab Emirates. The results show that there is an improvement in personal financial attitudes. There is a reduction in dependence on the use of credit cards. This study used a convenience sampling technique to increase the chance of non-representation bias. Ghauri et. al (1995) revealed that Singaporeans have a healthy financial attitude because of high financial literacy. So that financial problems, financial planning and management in investment decisions are better.

Based on the theoretical description ethical and various empirical studies, hence its hypothesis will tested are: H1) Financial knowledge has a significant effect on investment decisions. H2) Financial behavior has a significant effect on investment decisions. H3) Financial awareness has a significant effect on investment decisions. H4) Financial attitude has a significant effect on investment decisions.

This study is aimed at making several useful contributions, namely theoretical contributions, managerial contributions and methodological contributions. 1) Contribution to the empirical literature, that is: a) This study expands the determinants investment of Sharia Bank customers in using banking products. b) Development of financial literacy factors as independent variables. 2) Contribution managerial, that is: a) provide managerial input to Sharia Banks in an effort to improve products and services to customers. b) Provide managerial input regarding the importance of paying attention financial literacy and deep macroeconomic conditions improvement of products and services to Sharia Bank customers. 3) Methodological contribution, namely the use of regression models binary logistics in testing the research hypothesis to be tested.

Research Method

Research Data and Samples

The research was designed using an approach causality through hypothesis testing and data analysis primary. The research design refers to the theory and results of empirical studies that support the hypothesis to be tested. The researcher conducted a theoretical review and the results of empirical studies in order to map the theory according to the research objectives and the research conceptual framework. After the data collection was successful, the questionnaire was coded, input data, analyzed and concluded. The binary logistic regression model is used to show how dependent and independent variables are related as follows (Greene, 2012; Wooldridge, 2013):

$$\mathbf{Y = \beta_0 + \beta\, 1\, X\, 1 + \beta\, 2\, X\, 2 + \beta\, 3\, X\, 3 + \beta\, 4\, X\, 4 + \mu}$$

Where;

Y = Investment decision
X 1 = Financial knowledge
X 2 = Financial behavior
X 3 = financial awareness
X 4 = Financial attitude
μ = error term

Identification and Operational Definition of Research Variables

Identification and operational definitions are used to clarify and refine the focus research in order to get the right results. Operational identification and definition describes the variables research, namely the dependent variable, variable is independent. Questionnaire using 5 Likert scale.

Financial knowledge is understanding significant financial concepts such as inflation, calculating interest rates and diversifying risk in a portfolio. Using 7 Likert scale items (A. Gina, Akoto and Despard, 2012; Mugo, 2016). Financial behavior is the knowledge ability to prepare budgets and obtain loans and savings. Using 9 items on the Likert scale (Amos, 2014; Mugo, 2016). Financial awareness refers to an individual's ability to understand financial education and financial education resources. Using 7 Likert scale items (OECD, 2006: Mugo, 2016). Financial attitude is the ability to choose and invest with the preferences of several people. Using 12 Likert scale items (Pankow, 2012, Mugo, 2016). Investment decisions are awareness of alternative investment opportunities, investing in securities and the realization of the benefits that come with investing. Using 6 Likert scale items (Musundi, 2014, Mugo, 2016).

Model Specification Testing

In uni research using multiple regression. Testing model specifications to determine the best equation model and can be used to draw conclusions using validity, reliability, normality test, classic assumptions.

Result and Discussion

Based on data obtained from a questionnaire of 225 Sharia Bank customers in the Special Region of Yogyakarta. Respondents came from customers of Sharia BRI, Sharia BNI, Sharia Bank Mandiri, Sharia BPD Yogyakarta. Reliability test and validity test shown in Table 1. The results of the validity test indicate that the questionnaire is valid. This is indicated by the Pearson Correlation test quantity> 0.60. Reliability test shows that each research variable is reliable. This is indicated by the amount of Cronbach's Alpha> 0.80.

Table 1. Reliability and Validity Test

	Cronbach's Alpha	Pearson Correlation	N of Item
Financial knowledge	0,840	> 0,680	7
Financial behavior	0,891	> 0,550	9
Financial awareness	0,875	> 0,744	7
Financial attitude	0,925	> 0,719	12
Investment Decision	0,805	> 0,693	6

Table 2 it can be concluded that the model is good enough to take analysis and take conclusions. The regression equation is able to explain the effect of the independent variable on the dependent variable by 62.8%. The F-statistic is 92.01 with a probability of 0.000.

Table 2. Multiple Regression Results

Variables	Coefficient	Std. Error	t-statistics	Sig.
C	3,805	1,242	3,063	0.002
Financial knowledge	0.091	0.039	2,344	0.020
Financial behavior	0.186	0.026	7,076	0,000
Financial awareness	0.289	0.052	5,526	0,000
Financial attitude	0.087	0.026	3,370	0.001
R2	0.791			
Adjusted R2	0.628			
F-Statistics	92.01			
Prob.	0,000			

* Dependent Variable: Investment Decision

Hypothesis Testing 1

The test results show that financial knowledge affects the investment decisions of Islamic Bank customers. This is indicated by the t-statistic magnitude of 2.344, a significant amount of 0.020. The results can be concluded that the increased financial knowledge of customers, the more investment decisions will be increased. The results are consistent with the findings Greenspan (2002), Robb and Sharpe (2009), Mugo (2016). High financial knowledge will increase the capacity of budgeting, saving and investing.

Hypothesis Testing 2
The test results show that financial behavior affects the investment decisions of Islamic Bank customers. This is indicated by the t-statistic magnitude of 7.076, a significant amount of 0.000. The results can be concluded that the increasing financial behavior of Islamic Bank customers, will increase investment decisions. The results of this study are consistent with the findings. Duflo and Saez (2003, 2004), Madrian and Shea (2001), Al-Tamimi and Kalli (2009). Individuals who have financial awareness will be wiser in investing. Investors who have higher education, work experience in banking will make investments easily.

Hypothesis Testing 3
The test results show that financial awareness affects the investment decisions of Islamic Bank customers. This is indicated by the t-statistic amount of 5.526, a significant amount of 0.000. The results indicate that the higher the customer's financial awareness, the more investment decisions will be increased. The results of this study are consistent with research by Mugo (2016), Lusardi et. al, (2011) in Germany and Mahdzan and Tabiani (2012) in Malaysia. Uma, et.all, (2014) concluded that saving behavior has an effect on making investment decisions.

Hypothesis Testing 4
The test results show that financial attitudes affect the investment decisions of Islamic Bank customers. This is indicated by the t-statistic amount of 3,370, a significant amount of 0.01. The results can be concluded that the higher the customer's financial attitude, the more investment decisions will be increased. Mugo (2016), Ghauri et al (1995) revealed that a healthy financial attitude due to high financial literacy will facilitate investment decisions. Financial problems, financial planning and management in investment decisions are getting better. Financial monitoring has become tighter and more controlled.

Conclusion

This study aims to examine the effect of financial literacy on investment decisions of customers of Sharia or Islamic Banks in Yogyakarta Special Region. Financial literacy uses measures in the form of financial knowledge, financial behavior, financial awareness and financial attitudes. A sample of 225 Islamic Bank customers. The analysis technique uses multiple regression. The results showed that financial literacy has an effect on investment decisions.

Managerial Suggestions and Implications

Based on the results of this study, the authors provide suggestions, as follows:
1. Sharia banks should provide concessions to customers according to POJK No.11 / POJK.03 / 2020 concerning National Economic Stimulus as a Counter cyclical Policy on the Impact of the Spread of Coronavirus Disease. The POJK is in effect from March 13, 2020 to March 31, 2021. The regulation states that banks can provide relaxation to financing facilities for customers affected by the Covid-19 virus pandemic in the form of postponement of payments and / or provision of margin relief/profit sharing over a period of time and conditions. the terms are adjusted to the economic sector, criteria and customer conditions by still referring to OJK regulations.
2. Required Concrete programs as the implementation stage of the Sharia Bank strategy include the following: a) A new sharia banking imaging program that includes aspects of positioning, differentiation, and branding. The new position of Islamic banks as a mutually beneficial banking for both parties. Differentiation aspect with competitive advantage with diverse, ethical and transparent products and schemes. 2) Creating a new mapping program that is more accurate to the potential of the Islamic banking market. 3) product development programs aimed at a wide variety of products. 4) Service quality improvement program supported by competent human resources and the provision of high information technology. 5) Broader and more efficient public outreach and education programs through various means of direct communication, or indirectly. Various media are used, such as: print media, electronic, online / website.

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The Governance of the Surabaya's West Shipping Channel

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Abstract
The governance regarding shipping safety in the Surabaya's West Shipping Channel is very important because it affects the smoothness of movement of ships, which carry goods and passengers to the ports in Surabaya City. Due to the frequent occurrence of ship accidents in the channel, there is a possibility that these were caused by several factors related to the governance in the shipping channel. The required data was obtained from relevant informants, while other supporting information was obtained by direct observation in the field. Then the data was analyzed using descriptive qualitative method. From this analysis, it was found several findings concerning the factors causing the accident of ships in the shipping channel, namely: the technical condition of the ships, the level of professionalism of the ship's crews, natural factors, the condition of navigation aids, and installation of infrastructures in the sea. The next findings were about things that have not been achieved by the government, such as law enforcement regarding the ships' maintenance, education and training for the ship's crew especially in handling ships' accidents at sea, law enforcement regarding the installation of undersea infrastructures, and the installation of proper navigation aids along the shipping channel.

Keywords: Accident, Channel, Governance, Safety, Shipping, Surabaya

1. Introduction

The safety of shipping is a very important issue because it will be very helpful in conducting shipping of various ships that pass certain waters from one place to another. This issue is important to discuss because it involves a variety of influential factors, such as shipping lanes and their navigation aids, ships and their crews and the cargoes they carry, provisions regarding international and national security and safety, and weather conditions within and above the shipping lanes. Safety of shipping is so important because it will smooth the flow of transportation of goods and people from one place to another. Conversely, if shipping safety is not adhered to properly, it will potentially cause accidents at sea or undesirable matters events humans, as well as those concerning ships such as: leaking, drifting, aground, construction damage, engine failures, exploding, sinking, burning, upside down, and collision.

Surabaya West Shipping Channel (SWSC) is a very important channel, because this channel is the only access to the entry of ships to several seaports in Surabaya, especially to Tanjung Perak port, and the Indonesian navy fleet base. Geographically, SWSC is located between latitude 65˚0'00"S-7˚15'00"S and longitude 112˚35'00"E-112˚45'00"E in the working area of Tanjung Perak Port, Surabaya (see Figure 1). The condition of this channel is very narrow and shallow when compared to the high intensity of passing ships. The density of SWSC is due to the fact that Tanjung Perak port is currently the busiest port in Indonesia, based on the port authority, Pelindo III Ltd data on the number of container loading and unloading activities in seven Provinces of Indonesia (Pratama, 2019).

Figure 1: Surabaya West Shipping Channel (Harbormaster of Tanjung Perak Port [HTPP], 2015).

Shipping operations are tending to increase from year to year in SWSC. The number of ships going through the shipping channel in 2016 amounted to 10 780 ships originating from domestic and 1 640 vessels originating from abroad, in 2017 it increased to 19 362 ships domestically and 1 640 ships abroad, while in 2018 it increased again to 20 489 domestic ships and 1 761 foreign ships (HTPP, 2019). By paying attention to these figures, it is of course necessary to have good governance of the shipping channel so that it is possible to increase shipping security and safety in SWSC.

Suboptimal governance of the shipping lane has the potential to cause ship accidents in the form of sinking vessels, burning ships, collision ships and aground vessels, which of course affects the traffic from ships entering and exiting the shipping channel. Some examples of cases of ship accidents at SWSC involving a ship owned by the Government of Indonesia that sank because it collided with MV Iris in bouy 11, Gresik waters, in May 2000. At that time the ship owned by the Government was about to get out of the Port of Tanjung Perak in Surabaya, while MV Iris was about to enter the port. In general, indicators of suboptimal governance in the Surabaya channel are evident from existing ship accident data. The vessel accident data in 2018 are five ships, with details of one ship catching fire, three ships aground, and one ship sinking. While the number of crews who died was three. The types of ship that had an accident in the shipping channel can be explained: two motor boat, two motor sailboat, one tug boat, and one barge. The cause of the accident from the ships is due to human factors, technical factors, and natural factors (HTPP, 2019).

The smoothness of shipping in the shipping channel is often constrained by the lack of optimal governance of SWSC, which in this study is classified as the governance of shipping traffic in the channel which includes coordination among stakeholders as the users of the channel facilities; the handle of the navigation hazards along the channel in the form of unassembled shipwrecks, as well as installation of underwater installations; and the implementation of training related to shipping safety in SWSC. The current stakeholders in SWSC are ship owners, the Harbourmaster of Surabaya Port and Pelindo III Ltd, Surabaya. Therefore, the Researcher is interested in conducting research by taking the title "Governance of Surabaya West Shipping Channel in Improving the Safety of Shipping". Based on the above consideration, the research problem can be formulated in two research questions as follows: (i) What is the cause of the accident that occurred at SWSC?; and (ii) How is the governance of SWSC in improving the safety in the shipping channel?

2. Method

This study uses the qualitative method based on the philosophy of post-positivism or interpretive, used to examine the condition of natural objects, where researchers are as key instruments, so this research method is often referred to as the naturalistic method (Sugiyono, 2017). This research was carried out at the Surabaya Harbormaster Office, Director General of Sea Transportation Surabaya, and Pelindo III Ltd, Surabaya. The field research was conducted in June 2019, while the writing of the research report was conducted in July to October 2019. The primary data was obtained from six informants, who came from the Tanjung Perak Harbormaster Surabaya, the Navy Fleet II Headquarters, the Surabaya Naval Base V, and Pelindo III Ltd, Surabaya. The technique used in the selection of informants was purposive sampling, meaning that the technique for determining data sources first considers some criteria that are relevant to the research problem, not randomized (Sugiyono, 2017).

In this study, the Researcher set the object of research, namely the shipping governance of Surabaya's western shipping channel which includes coordination among stakeholders using channel facilities; handling navigation hazards along the path in the form of unassembled wrecks and underwater installation; and the implementation of training related to shipping safety at SWSC. For the data collection, the Researcher used interviews with informants, and observations in the field about the SWSC security policy process that was being carried out, how the decision making flow, and the evaluation process of security activities that had been carried out. While the data validity test included tests of credibility, transferability, dependability, and conformability, by doing triangulation techniques, and completing the data with supporting data. This study used the qualitative method, so the data analysis technique used was descriptive qualitative analysis using a non-statistical research approach (Bungin, 2011).

3. Results

3.1. Surabaya West Shipping Channel

Surabaya West Shipping Channel (SWSC) is located between 6˚50'00"S-7˚15'00"S and 112˚35'00"E-112˚45'00"E in the working area of the Tanjung Perak port of Surabaya. SWSC is the main shipping gateway to the Port of Tanjung Perak and surrounding areas before heading to the anchorage area or rede (Figure 2). SWSC has a width of 100 meters and a depth of minus 9 meters low water spring (LWS). In addition to only allowing a one-lane crossing, this condition causes the SWSC capacity that is available to only 27 thousand ship movements. Even though, the realization of the number of ships passing through SWSC in 2013 reached 43 thousand movements. This limitation also caused the channel not to be passed by ships with a draft of more than 8.5 meters.

The density of shipping traffic in SWSC is caused by two main factors, namely the existence of the Indonesia Navy Fleet Base and the Tanjung Perak port of Surabaya. The position of the fleet base as the center of sea defense operations in the Surabaya region and has the largest combat vessel operations in Indonesia. Most military vessels, both the Indonesian Navy Ships and foreign military ships that pass through the central territorial waters of Indonesia, carry out a re-provision of logistics at the fleet pier and automatically increase the density of ship traffic in SWSC.

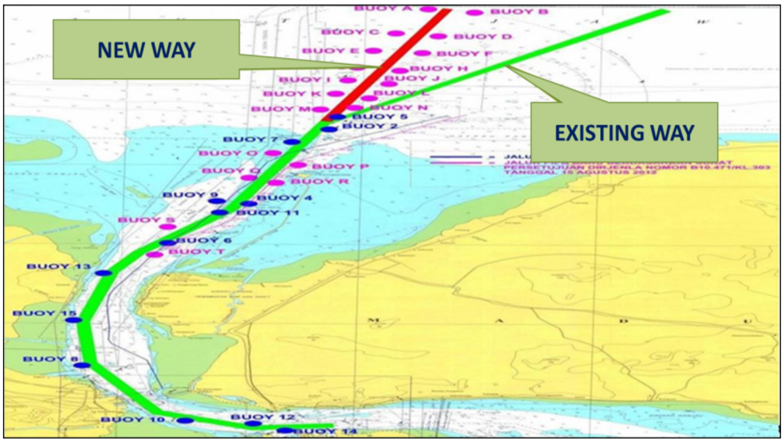

Figure 2: Layout of Surabaya West Shipping Channel (HTPP, 2015).

The density is also caused by the position of the Port of Tanjung Perak Surabaya as the busiest port in Indonesia. Based on data from Pelindo III Ltd, the number of containers entering Tanjung Perak port in the first semester of 2018 was recorded at 16 310 containers. Then in the first semester of 2019 it jumped to 35 550 containers. The number of visits to the Port of Tanjung Perak continues to increase from year to year, a significant increase in ship visits with an average increase of 9% per year and is predicted to continue to increase in line with the need for sea transportation. The peak of the increase in visits during the last 5 years (2014-2018), occurred in 2018 with the number of ships entering 20 072 units and out of 20 489 units (see Table 1) (HTPP, 2019).

Table 1: Data of Ship Operations Year 2014 – 2018 (HTPP, 2019)

No	Description	Year				
		2014	2015	2016	2017	2018
1	Letter of Sailing Approval: ▪ Domestic ▪ International	12 325 1 817	11 321 2 127	10 780 1 631	19 362 1 640	20 489 1 761
2	Incoming Ship: ▪ Domestic ▪ International	12 431 1 831	13 396 132	10 924 1 656	19 044 1 812	20 072 1 636
3	Ship Out: ▪ Domestic ▪ International	12 325 1 817	13 383 130	10 780 1 631	19 362 1 640	20 489 1 761

3.2. Sea Accidents that Ever Occurred in SWSC

Accidents at sea, which involve ships crossing SWSC, occur frequently. In the 2013-2018 period, there have been 15 ship accidents at sea. These accidents took the form of a sinking ship, a burning ship, a collision ship, and a wrecked ship (see Table 2). As for the accidents, when viewed in more depth, it could be caused by human factors, ship technical factors, or the sea channel conditions. Sea accidents that can be categorized as events caused by human factors in the 2013-2018 period were 12 times (HTPP, 2019). These accidents caused the ship collision, run aground, or burned. The factors of human error are: carelessness caused by overconfidence, because the ship crews have crossed the channel many times, the lack of knowledge and experience of the crew members on matters relating to the safety of shipping, emotional factors of the ship crews when the ships sail in the channel.

Table 2: Data of Ship Accidents in SWSC for the Period 2013 – 2018 (HTPP, 2019)

No	Types of Accident	Ship Name	Types of Ship	Gross Tonnage	Description
1	Col	KM. Jaya Manggala	MB	698	Not sink
		KMP. Selat Madura II	MB	209	Not sink
2	Col	Isa Winner	MB	7 145	Not sink
		KM. Segoro Mas	MB	2 999	Not sink
3	Col	MV. Vinales Ocean	MB	15 884	Not sink
		MV. Atro 2	MB	25 072	Not sink
4	Col	KM. Tanto Hari	MB	5 931	Sink, has been lifted up
		MT. Sirius	MT	2 090	Not sink
5	Col	KM. Journey	MB	2 772	Sink, has been lifted up
		KM. Lambelu	MB	14 649	Not sink
		Fatima II	MB	4 909	Not sink
6	Agr	KM. Elegance	MB	2 486	Aground
7	Col	MT. Navigator A.	MT	18 311	Not sink
		MV. Leo Perdana	MB	27 104	Not sink
8	Bur	KM. M. Sumbawa	MB	3 256	Not sink
9	Col	KM. M. Kampar	MB	6 626	Not sink
		MV. Princess Royal	MB	43 649	Not sink
10	Bur	KM. New Glory	MB	2 354	Not sink
11	Sin	KM. W. Sejahtera	MB	9 786	Sink, has been lifted up
12	Col	KM. Georgia S.	MB	5 532	Not sink
		KM. Intan Daya 9	MB	2 998	Not sink
13	Bur, Sin	KM. Ise Baru	MB	668	Sink, has not been lifted up
14	Agr, Sin	KM. KTC 1	MB	2 200	Sink, has been lifted up
15	Bur	KM. G. Samudra	MB	3 497	Aground

Notes: Col: Collision; Bur: Burned; Agr: Aground; Sin: Sink; MB: Motor Boat; MT: Motor Tanker.

Sea accidents that can be categorized due to of the ship technical conditions are 4 events, in the period 2013-2018. In general, the ships that experienced the accidents sank into the water in the channel. These ships are generally classified as old, so they cannot sail with adequate reliability. Accidents at sea can also be caused by factors related to the conditions of the channel. These factors include: the danger of navigation by the existence of shipwrecks, the installation of underwater installations that do not meet the standards set by the government. At present there are still 25 wrecks that have not been lifted in the waters of SWSC. Even though the removal of shipwrecks is the responsibility of the Harbormaster and the ship owners, it is often constrained by the very expensive lifting costs. At present, the conditions of several underwater installations in the form of pipes and cables at SWSC are very dangerous for shipping (HTPP, 2019). Natural conditions such as shallow and narrow channel also interfere the scouting of ships when crossing the channel. This is faced with the traffic of ships at SWSC. To overcome this shipping obstacles, various dredging efforts have been made for SWSC by the Government. The success of this dredging had a positive impact on the development of the channel from the beginning with a width of 100 meters and a depth of about -9.5 meters LWS to a width of 150 meters with depths reaching -13 meters LWS. So that it has enough depth to accommodate larger ships (HTPP, 2019).

Investigation of ship accidents is very useful as an evaluation of shipping governance policies in SWSC. The investigation was carried out jointly by several related parties, including the manager of SWSC, and the ship owners involved in the accidents. The results of the investigation are then used by the management and the ship owners in determining improvement efforts. From these reports it can be concluded that the following efforts are needed: (i) providing operational standard for the ship scouting operations; (ii) strict regulations regarding obligations for ship passing, specifically ships with GT 500 or more, are required to use the scouting services of ships provided by the ship's management or officers who have attended education and training as ship scouts; (iii) periodic seafaring safety training for ship crews is required; (iv) installation of transponders/bacon is needed in each buoy in SWSC so that they can be monitored by radar; (v) optimal utilization of AIS (Automatic Identification System) on ships is required; (vi) periodic socialization of national and international regulations on shipping safety in SWSC is required; (vii) it is necessary to increase the number of ship scouts by educating more ship scouts; (viii) joint SAR training is needed, particularly for saving of burning ships; (ix) informing of the position of shipwrecks and underwater installations in SWSC is required; (x) law enforcement is required in terms of installation of underwater installations in SWSC, such as subsea pipelines of oil, gas and water.

4. Discussion

The governance of SWSC is carried out by the Surabaya Main Harbormaster Office, which carries out the Safety and Security functions of Shipping which includes the implementation, supervision and law enforcement in the field of water transportation, ports, and maritime environmental protection at ports. This organization is led by a Harbormaster who is a government official at the port appointed by the Indonesia Transportation Minister. The tasks of the Tanjung Perak Main Harbormaster include: (i) implementation of supervision and fulfillment of ship seaworthiness, ship safety certification, prevention of pollution from ships, and determination of the legal status of ships; (ii) conducting inspection of ship safety management; (iii) implementation of shipping safety and security supervision related to the loading and unloading of dangerous goods, special goods, hazardous and toxic waste, refueling, order of embarkation and debarkation of ship passengers, construction of port facilities, dredging and reclamation, worthiness of sailing and seafaring traffic order in port waters, and shipping channel, scouting and attracting ships, as well as the issuance of Sailing Approval Certificate; and (iv) conducting vessel accident inspection, fire prevention and suppression in port waters, handling disasters at sea, implementing maritime environmental protection and law enforcement in the field of shipping safety and security (GOI, 2008).

In this section, the governance carried out by the Surabaya Harbormaster will be discussed in more detail by breaking it into four main elements of governance, namely: planning, organizing, directing, and controlling (Choliq, 2011). The planning carried out by the Tanjung Perak Main Harbormaster includes the issuance policy of the Sailing Approval and its role in shipping security and safety in SWSC. The policy to fulfill the ship's requirements before sailing in the issuance of the Sailing Approval Letter refers to the provisions contained in the 2014 printed SOLAS 1974 (IMO, 2014), which contains provisions relating to the ship condition, whether the hull, machinery, navigation equipment, or the goods loaded. In addition, before the permission to sail is given by the Harbormaster Surabaya, the ship owners or operators of the ships, for certain types and sizes, must meet the requirements of safety management and prevention of pollution from ships mentioned in Article 169 Paragraph (1) of the Law of the Republic of Indonesia Number 17 Year 2008 about Shipping. Ships that have met the requirements for safety management and prevention of pollution from ships as referred to in paragraph (1) above, are given certificates. Safety Management Certificate as referred to in Paragraph (1) above is in the form of Document of Compliance (DOC) for companies and Safety Management Certificate (SMC) for ships. Thus it can be concluded that the planning carried out by the Surabaya Harbormaster Office is in accordance with the theory of shipping safety in order to support the smooth running of the ships passing through SWSC.

Organizing carried out by the Surabaya Harbormaster is carried out by governing organizational resources systematically in carrying out the planning based on the leaders' predetermined policies. Organizing is carried out effectively by involving internal units of the organization, as well as other related organizations, especially Pelindo III Ltd, and the ship owners, especially the Naval Fleet II Headquarters. The presence of the Main Harbormaster with the mobilization of the organizational resources is in accordance with the theory and policies of Shipping Safety rules, specifically Law No. 17 of 2008 concerning Shipping, Article 116 Paragraph (1) "Shipping safety and security includes the safety and security of transportation in waters, ports, and also protection of maritime natural environment" and Paragraph (2) "The implementation of shipping safety and security as referred to in Paragraph (1) is carried out by the Government". Thus it can be concluded that the organization has fulfilled the established rules, namely by regulating existing organizational resources, developing the professional fields of each related party, increasing understanding of the responsibilities of each party on an ongoing basis, maintaining the presence of the government in the shipping area SWSC, and assist the implementation of sailing carried out by SWSC users.

The directing carried out by the Surabaya Main Harbormaster is guided by the ISM Code, specifically in the issuance of DOC and SMC certificates. For the Indonesian-flagged vessels, both DOC and SMC are issued by the Indonesian Government (IMO, 2014), while for foreign-flagged vessels, the certificates are issued by the country of origin. Both certificates are valid for 5 years. As for the shipping safety, the Harbormaster is guided by code 2 in ISM, which is the Safety and Environmental Protection Policies. In addition to carrying out controlling activities, the Harbormaster also conducts scouting training and is accompanied by the provision of Scout Certificates. The problems lie in the limitations in this kind of scout training rarely involving Navy personnel so that it affects the quality of the Navy's scout personnel in scouting their ship movement in SWSC. These limitations are caused partly because there are no creative ideas resulting from technology advancement products in the 2018 Transhub Challenge competition which was applied in the field. In the competition, there were several ideas of sea transportation modes, one of which became the second winner of the competition, namely Concecure, an informative application that helps with the administration of ship sailing approval certificates which is based on the consideration of difficulties in the process of issuing the approval certificates. Thus it can be concluded that the directing effort carried out by the Surabaya Harbormaster has not been fully satisfactory, so it has not been able to fully support the shipping operations of the SWSC users.

Controlling in the shipping governance in SWSC is a form of supervision towards the achievement of objectives of SWSC users based on defined order, where the Harbormaster does so by referring to Law Number 17 of 2008, Article 207, which explains that a harbormaster also takes part in search and rescue effort of a ship if the ship has an accident or disturbance when carrying out sailing activities. Control over shipping governance has been attempted on the directing phase that has been implemented previously. But even though it has been implemented optimally, the controlling still has limitations, which are caused by the danger of navigation in the form of shipwrecks and the installation of cables or underwater pipes. The controlling effort is still constrained because the relevant parties, especially the Naval Fleet II, do not have a tugboat and its crews in adequate quality and quantity. Another obstacle is the ship safety training that is still carried out by each stakeholder, which is still sectoral in nature and not yet combined. With reference to these things, it can be concluded that the controlling effort carried out is not yet fully in accordance with the basic functions of control, so it has not fully supported the implementation of shipping in SWSC.
The causes of ship accidents are several factors, namely: ship condition, channel condition, human condition, and natural condition. Ship condition factor includes the ship's physical condition where most of the ships are already old. The channel condition includes navigation hazards caused by the existence of shipwrecks, and underwater installation that does not meet the standards set by the government. Human condition factor includes the crews' carelessness caused by feelings of overconfidence, lack of knowledge, and emotional factors. Ship accidents at

SWSC are currently dominated by human condition factor. Natural condition factor includes the depth and size of the channel which is shallow and narrow, therefore frequently disrupt the ship scouting when crossing the channel. The shipping governance in SWSC currently has gone through four stages in accordance with management theory, namely; planning, organizing, directing, and controlling. The policies issued by the leadership element of each maritime stakeholder in the basic functions of planning, organizing, are in accordance with the theory of shipping safety in order to support the smooth running of the ships passing through SWSC, so that it is stated that shipping governance at SWSC, in terms of planning and organizing SWSC governance has been achieved. As for the basic functions of directing, and controlling, they are not yet fully in accordance with the management theory, so SWSC governance in terms of directing and controlling has not been fully achieved, there are still some weaknesses.

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Customer Retention at Republic Bank in Ghana: A Marketing Perspective

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Abstract
In today's highly competitive environment, customer retention is an essential aspect of every banking strategy. The study explores the retention factors that affect the choices of consumers to remain with the Republic Bank in Ghana. The correlation research design was used for the study within which the simple random sampling technique was used. Data were obtained through self-administered questionnaires to 480 customers of the bank. Correlation and multiple regression techniques were used to examine the relationships between customer satisfaction, service quality, customer trust, customer commitment and switching barrier factors and customer retention. The findings revealed a strong positive relationship between switching barrier, customer commitment and customer retention. The study therefore, recommended that Management should pay attention to customer commitment by investing more into customer relationship management that can increase customers' dependency and inhibit switching.

Keywords: Customer Retention, Customer Satisfaction, Service Quality, Customer Trust

Introduction

Theories such as Richard's (2006) conversion model, Sharma and Patterson's (2000) relationship model, Ranaweera and Neely's (2003) holistic approach, client retention has well emphasized the need for organizations and firms to pay much attention to customer retention. All these theories revealed that retention of customers brings advantages such as improved quality, lower prices, lower price sensitivity, positive word-of-mouth, higher market share, greater performance and greater productivity. Furthermore, Fornell and Wernefelt (2007) emphasized that marketing resources may be better spent on keeping existing customers than acquiring new ones.

Banks have adopted marketing strategies to project distinctive characteristics through their product, service and branding to ensures they gain competitive advantage over the other banks (Keller & Lehmann, 2009). A brand is a psychological construct held in the minds of all those aware of the branded product, service, person, organization or movement. It is essential that, branding is very powerful and can help keep existing customers and also attract new ones as well. Chan (2004) further posits that, a brand is the most valuable asset of company and helps consumers to differentiate one brand from another. Sharma and Patterson (2000) also believe strongly that, brands are necessary and hence aids in the decision making of consumers towards a product or a service.

Republic Bank provides a wide range of products and services such as Loans (Rent Advance Loan, Auto Loan, Mortgage, Personal Loans, Loyalty Credit & Loan, Employer Assisted Loan), Savings (Brainy Child Account, Smart Save Account, I Do Account, Premium Savers Account, Susu Plus Account), Private banking (Adeshie Current Account, Adeshie Silver Standard Loan, Adeshie Safe Custody Deposit Services), Coprate banking (55Plus Account, Home Save Plus Account, Fixed Deposit Account, Retail Finance Product, Enidaso Account) (Republic Bank Annual report, 2018).

A key question is what drives customer retention in a highly competitive service industry, characterized by low switching costs in a competitive market like Ghana? This study was carried out to examine the factors that influence consumers' decision to stay with Republic Banks in Ghana. The study specifically to;

1. Determine the factors that contribute to customer retention at Republic Bank.
2. Analyze the relationship between service quality, customer trust, switching barrier, customer satisfaction, customer commitment, and customer retention.

On the basis of the objectives formulated it was hypothesized that:

H_0: There is no statistically significant positive relationship between customer retention and other variables such as service quality, customer trust, switching barrier, customer satisfaction and customer commitment.

Conceptual Framework on Customer Retention

Customers are the greatest asset for every organisation. A careful analysis of the review of literature suggests that customer retention depends on several factors. It also showed that these factors can influence customer retention as depicted in the conceptual framework. These, as seen Figure 1, are service quality, customer trust, and switching barrier. Customer satisfaction and customer commitment served as mediating variables. Customer retention was the dependent variable. The conceptual framework shows that service quality, customer trust and switching barrier influence customer retention. However, the degree of the effect would be influenced by customer satisfaction and customer commitment. Thus, retaining customers becomes possible if customers are committed and satisfied with services provided by the bank.

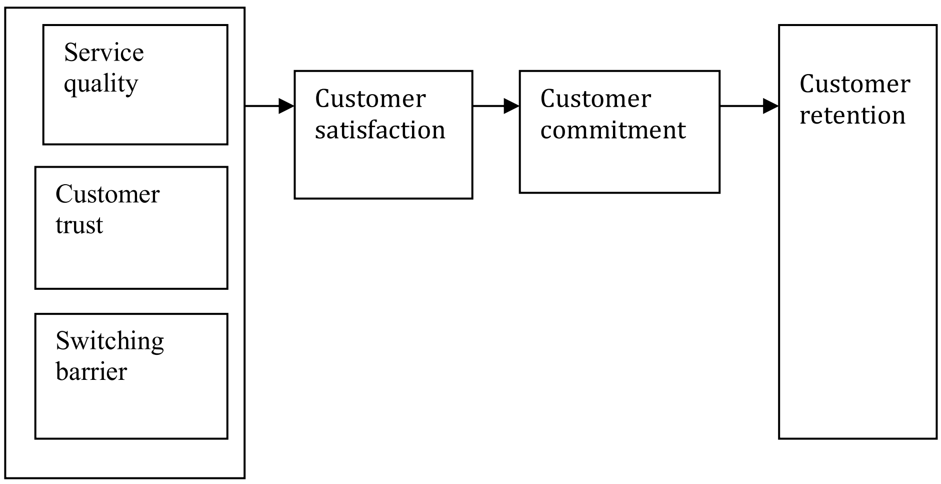

Figure 1: **Conceptual Framework on Customer Retention**
Source: Author's construct, 2020

Methodology

The correlational study design was used for the study. This design was considered appropriate since it helped in explaining the relationship and the factors that predict customer retention in the banking industry. The target population of the study comprised of 16,217 customers of Republic Bank. This was obtained from the database of Republic Bank head office (2020). To ensure that adequate number of responses were received, the sample size was determined using Krejcie and Morgan's (2002) table of random sample size, therefore a sample size of 480 customers of Republic bank was used for the study.

The main instruments used for data collection was the 5-point Likert scale questionnaire. This was used to measure service quality; customer trust; customer commitment; switching barriers and Customer retention. A pre-test of the questionnaire was conducted using 30 customers of to assess the reliability of the questions. Feedback from the customers was obtained to test the readability, comprehensibility, wording, order effects and any ambiguity of the questionnaire and its statements (Hair, et al., 2006). Following the pre-test, some minor changes were made to the survey instrument. Furthermore, the Cronbach's coefficient for the pilot study was 0.789, which indicated a satisfactory level of significance. The questionnaires and test item were administered with the help of operations manager of Republic bank and some staff of the bank.

Measurement of Variables

Service quality

Service quality was measured by using the variables suggested in the SERVQUAL model (Chan, 2004). In applying the SERVQUAL model, 21 statements were used to measure service quality across these elements, based on five- point Likert-scale type. The factors in the model were measured as follows: tangibles, reliability, responsiveness, assurance and empathy.

a. Tangibles: Appearance of physical facilities, equipment, personnel, and communication materials.
b. Reliability: Ability to perform the promised service dependably and accurately.
c. Responsiveness: Willingness to help customers and provide prompt service.
d. Assurance: Knowledge and courtesy of employees and their ability to inspire trust and confidence.
e. Empathy: Caring, individualized attention the firm provides its customers.

Customer Satisfaction

Customer satisfaction (CS) was measured using six-items, on a five-point Likert-type scale. The items were adopted and modified from the satisfaction measure developed by Chan (2004) he estimates that customer satisfaction reflects the degree to which a consumer believes that the possession or use of a service evokes positive feelings.

Customer Commitment

The customer's commitment to the bank relationship was measured using an eight-item, five-point Likert-type scale. The items were adopted and modified from the customer commitment measure developed by Sharma and Patterson (2000). These eight-items tap the multiple facets of commitment incorporated in their definition, including the customer's loyalty, willingness to make short-term sacrifices, long-term orientation, and intention to invest in the relationship. Commitment was measured using switching cost, alternative attractiveness, prices, services offered and brand attitude.

Customer Trust

The customer's trust in the bank was measured by using a six- item, five-point Likert-type scale. The items were adopted and modified from customer trust measure developed by Gounaris (2005). These items were related to honesty, benevolence, integrity, relationship marketing strategy and competence of the supplier.

Switching barriers

To measure switching barriers, a seven-item, five-point Likert-type scale in Clemes, Gan and Zhang (2010) were adopted, modified and used. Switching barrier was measured using prices, reputation, service quality, competitors' advertisement, involuntary factors, and bank's distance and switching cost.

Data Analysis Procedure

The data collected with the questionnaires were sorted out, coded and analysed based on the procedures within the statistical analysis software tool known as the Predictive Analytic Computer Software (PASW) Version 19.0. Inferential statistics such as mean and standard deviation were used to analyze data.

Results and Discussion

Table 1: Factors Contributed to Customer Retention

Variables	Mean	Std. Dev.	Median	Skewness
Service quality	3.455	.519	3.429	.059
Customer trust	3.141	.532	3.153	.038
Switching barriers	3.408	.502	3.428	-.025
Customer satisfaction	3.819	.574	3.875	-.061
Customer commitment	3.349	.565	3.365	-.013
Customer retention	3.118	.531	3.125	.064

Scale (Mean): 0 – 2.9 = low, and 3.0 and above = high. Source: Field Data, 2020

From Table 1, it is evident that customer satisfaction (M=3.819, SD=.574), service quality (M=3.455, SD=.519) switching barrier (M=3.408, SD=.502) customer commitment (M=3.349, SD=.565) and customer trust (M=3.141, SD=.532) were the factors that contributed to customer retention at Republic Bank. Thus, the findings of Kenny (2000) indicated that customer retention, customer satisfaction, service quality, customer trust, switching barrier were some of the variables influencing high customer retention in an organization as confirmed by this study. Again, Johnson (2005) observed that the level of customer retention is influenced by the level of service quality, customer satisfaction and customer trust.

The standard deviations were quite high, indicating the dispersion in a widely-spread distribution. The largeness of the standard deviations of the factors means that the views of the customers were coming from a more heterogeneous group, that is, a group with different characteristics. This means that the effects of customers view on customer retention was an approximation to a normal distribution. This also indicates that customers were in favour of customer retention. Though customers perceived all the factors positively that of customer satisfaction was perceived more strongly or positively as compared to the other factors this implies that customer satisfaction is key to the success of every business. This indicates that as customer satisfaction increases, customer retention increases and vice versa. Literature supports that high customer retention today is not a guarantee for high retention in the future and for that reason there must be continuous efforts to ensure unremitting customer retention (Manoj & Sunil, 2011).

Table 2: Correlation Coefficients between Customers' Perceptions on the Factors and Customer Retention

Factors	Mean	Std. Dev.	Customer retention	Sig. Values
Service quality	3.455	.519	.456**	.000
Customer trust	3.141	.532	.429**	.000
Switching barriers	3.408	.502	.591**	.000
Customer satisfaction	3.819	.574	.310**	.000
Customer commitment	3.349	.565	.570**	.000

**. Correlation is significant at the 0.01 level (2-tailed). Source: Field Data, 2020.

Table 2 indicated respondents view on whether or not the perception of customers of Republic Bank, on customer retention had any statistically significant relationship with service quality, customer trust, switching barrier, customer satisfaction, and customer commitment. Pearson correlation matrix was used. Here a correlation was established between the factors and customer retention. Based on the correlation interpretations suggested by Cohen (1988) where correlation coefficient (r) = .10 to .29 or r = -.10 to -.29 Very Weak. r = .30 to .49 or r = -.30 to -.49 and Weak. r = .50 to 1.0 or r = -.50 to -1.0 Strong. Level of significance (p-value) = $p \leq 0.05$. (2-tailed).

The correlation matrix in Table 2 indicates moderate and positive significant correlation was observed between service quality and customer retention (r=0.46, p-value=0.000). The relationship indicates that moderate scores of service quality are associated with moderate scores of customer satisfaction. Hence, a moderate positive significant relationship was found between service quality and customer retention. This indicates that as service quality increases, customer retention increases and vice versa. This result is in line with Ranaweera and Neely's (2003) empirical studies. They both discovered that there was a strong correlation between perceived quality of service and repurchasing or retention of customers. This result also corroborates the claim by Sharma and Patterson (2000) that the greater the perception of quality, the stronger the commitment to the relationship.

Moderate and positive significant relationships were observed between customer trust and customer retention (r=0.43, p-value=0.000). The relationship indicates that medium scores of customer trust is associated with medium scores of customer retention. This indicates that as customer trust increases, customer retention increases and the converse is true. The finding in this work however, affirms the findings of Chan (2004), who demonstrated that customer trust significantly relates to sales growth through customer acquisition and retention.

Statistically significant but weak positive relation was found between customer satisfaction and customer retention (r=0.31, p-value=0.000). The relationship indicates that low scores of customer satisfaction are associated with low scores of customer retention. Hence, a positive but fairly significant relationship was found between customer satisfaction and customer retention. This implies that as customer satisfaction increases, customer retention also increases. However, if customer satisfaction decreases, customer retention also decreases. This result is consistent with Kenny (2002) indicated that discovering customers are satisfied with the services of a company ensures that remain loyal the company. However, other factors affect customer retention, regardless of customer satisfaction. This indicate that the degree of satisfaction of customers has a poor correlation with customer retention.

There were strong and positive significant relationships between switching barriers and customer retention (r=0.59, p-value=0.000). This implies that as switching barrier increases, customer retention also increases and as switching barrier decreases, customer retention decreases. The findings further support Ranaweera and Neely (2003) assertion that those who have positive perceptions of the service and product show a certain level of indifference, are the least likely to leave as their service expectations are fulfilled, and at the same time, they see no gains from switching.

The correlation matrix in Table 2 indicates that there were strong and positive significant relationships between customer commitment and customer retention (r=0.57, p-value=0.000). The relationship indicates that higher scores of customer commitment are associated with higher scores of customer retention. This indicates that as customer commitment increases, customer retention also increases and when customer commitment decreases, customer retention also decreases. The finding also supports Patterson and Smith (2008) findings that when customers are aware of, and perceive other suppliers as offering a differentiated service in terms of price, service and/or quality of technical outcomes, they tend to be less committed leading to commitment being positively related to repurchase intention

All the variables stated in the conceptual framework of the study which according to literature had significantly positive relationship with customer retention were confirmed by the study to have had that significant positive relationship. In view of the above finding, the study rejected the null hypothesis and confirmed the alternative one which states that there is a significantly positive relationship between customer satisfaction, service quality, customer trust, customer commitment, switching barrier and customer retention at Republic Bank. This corroborates the findings of Manoj and Sunil (2011) who concluded that how customers perceived factors in an organization would greatly influence their decision to stay or not.

Conclusion

The data largely infer that customer retention at Republic Bank was due to the high customer satisfaction, high service quality, high switching barrier, high customer trust and high customer commitment.

Implications for banking

The above conclusions indicate a need for certain action to take place so that customer retention would continue to be high. It is suggested that management of Republic bank, should:

1. Pay attention to customer commitment by investing more into customer relationship management that can increase customers' dependency and inhibit switching.
2. Focus on switching barrier factors such as transaction time, open more efficient branches closer to customers to make switching to other banks unattractive.
3. Pay more attention to customer retention by increasing customer satisfaction through the provision of accurate and timely information on products and services to its customers.
4. Pay more attention to service quality through the continuous provision of fast, reliable and error-free transaction to customers.

Recommendations

i. The result shows that both switching barrier and customer commitment had strong and positive significant relationship with customer retention while a moderate and positive significant relationship was found between customer trust, service quality and customer retention it is therefore recommended that switching barrier factors such as transaction time, open more efficient branches closer to customers to make switching to other banks unattractive.

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The Influences of Interest Rate, Inflation and Market Risk on the Performance of Stock Mutual Funds Through to the Variables Moderating of Stock Index LQ45 Registered on IDX 2016-2019

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Abstract
This study aims to determine the effect of interest rates, inflation and market risk on the performance of stock mutual funds with a stock index of lq45 as the moderating variable. The independent variable in this case is the interest rate (x1), inflation (x2), market risk (x3) and the dependent variable is the performance of stock mutual funds (y) and the stock index lq45 as the intervening variable (m). The type of research used is associative research, with a quantitative approach. This study takes all time series data that converts interest rates, inflation and market risk, stock index lq45 and the performance of stock mutual fund for the period 2016 to 2019. The number of research samples using saturated sampling techniques obtained is 40 samples. Data analysis used multiple regression analysis and moderated regression analysis using spss23. The results of the F test show that the lq45 index is able to moderate the independent variable interest rate, inflation, market risk together on the performance of stock mutual funds. The t test results show that the stock index lq45 is able to moderate the relationship between the variable interest rate and market risk on the performance of stock mutual funds, while the inflation variable cannot be moderated by the stock index lq45 on the performance of stock mutual funds.

Keywords: Performance of Stock Mutual Funds, Interest Rates, Inflation, Market Risk and Stock Index LQ45

1. Introduction

Stock mutual funds are an investment alternative for the public, especially small investors and investors who do not have much time and expertise to calculate risk on investment. Stock mutual funds are designed as a means to raise funds from people who have capital, have the desire to invest, but only have limited time and knowledge.

According to Tandelilin (2010), mutual funds are a container that contains a group of securities that are managed by investment company and purchased by investor.

Inflation is an economic indicator that causes an increase in the prices of goods and services in a given period. The existence of high inflation will cause an increase in production costs. Brigham and Houston (2010) suggest that inflation is the amount of price increases over time, while the level of inflation is the percentage of the price increase.

The interest rate in the financial sector, which is commonly used as an investor's guide, is also known as the risk-free interest rate, which includes the central interest rate and the deposit interest rate. In Indonesia, the central bank interest rate is represented by the interest rate for Indonesian Bank Certificates or SBI's (Husnan, 2003).

Market risk is one of the macroeconomics that affects the performance of mutual funds. According to Bareksa (2017) Market risk in investing in mutual funds, it is not only the profits that need to be considered by investors, but also the risks. One of the risks that always arise is market risk, this market risk is the risk of fluctuation or fluctuation in Net Asset Value (NAV) caused by changes in financial market sentiment (such as stocks and bonds) which are assets in mutual fund portfolio management. This risk also called systematic risk, which means the risk that cannot be avoided.

The LQ45 index consists of 45 stocks with high levels of liquidity which are selected based on certain criteria. The shares included in the calculation of the LQ45 stock index are regularly monitored for their performance development.

The objectives of this study are as follows. (1) To determine the direct effect of interest rates on stock mutual funds performance (2) To determine the direct effect of inflation on stock mutual funds performance (3) To determine the direct effect of market risk on stock mutual funds performance (4) To determine the lq45 index is able to moderate the relationship of Interest rates to stock mutual funds performance (5) To determine the lq45 index is able to moderate the relationship of inflation to stock mutual fund performance (6) To determine the lq45 index is able to moderate market risk on the performance of stock mutual funds.

2. METHOD

Theoretically that the ratio of interest rates, inflation and market risk affects the performance of mutual funds. The sample used in this study is stock mutual funds listed on the Indonesia Stock Exchange during the period 2016 - 2019 and uses secondary data published by Bareksa.com. Based on the theoretical basis that has been described regarding the influence of interest rates, market risk, inflation and market risk on the performance of equity funds with shares index lq45 as the moderating variable.

The type of data used in this research is quantitative data. The quantitative data is data on mutual funds on the Indonesia Stock Exchange and the Financial Services Authority for the 2016-2019 period. The data source used is secondary data. Secondary data is data that is not directly obtained from the company, but the data is obtained from www.idx.co.id and www.ojk.go.id.

Assessment of the performance of mutual funds is very important to determine the ability of mutual funds to generate profits and compete with other types of mutual funds. Mutual fund returns are known as net asset value (NAV), which is a tool to assess mutual funds performance. In this study are using Treynor ratio methods. The Treynor method is a comparison between excess return and risk from mutual funds, the risk that is compared is only from systematic risk (market risk) which is reflected in the beta value. The higher the Treynor ratio value also illustrates the better performance of a mutual fund.

Population is a set of data that has the same or similar characteristics. The population used in this study are all stock mutual funds listed on the Indonesian stock exchange during the 2016-2019 period. The sample used in the study was 10 stock mutual funds with the best year to date (YTD) for five consecutive years according to Bareksa.

The sampling technique was carried out by purposive sampling with the aim of obtaining samples that match the specified criteria.

The data analysis method in this study uses Moderated Regression Analysis (MRA) because in this study there is a moderating variable which aims to determine the magnitude of the influence of the independent variable on the dependent variable with the influence of the moderating variable.

The classical assumption test is a test to determine the accuracy of the model used in this study. The following are some tests that can be done to determine whether the classical assumptions are fulfilled or not, namely the normality test, multicollinearity test, collinearity test and heteroscedasticity test.

3. RESULTS AND FINDINGS

Descriptive analysis is to find out an overview of the sample. The sample description is in the form of minimum value, maximum value, measurement value, average with standard deviation.

Based on the result, the sample data is consist to 40 data, taken from 10 equity mutual fund companies within 4 years with Treynor ratio method, the results of the statistical description output of Stock Mutual Fund Performance show that the lowest value of -0.1990 happened to the Simas Syariah Unggulan stock mutual funds in 2019 and the highest value of 0.4558 occurred in the Simas Syariah Unggulan stock mutual fund in 2018. The results of the statistical description output of the Interest Rate show that it has the lowest value of 0.0425 or 4.25% in 2017 and the highest value of 0.0600 or 6.00% occurred in 2018. The results of the statistical description output of inflation show the lowest value of 0.0361 or 3.61% in 2017 and the lowest value is 0.0272 or 2.72% in 2019. The results of the statistical description output of Market Risk (beta) show the lowest value of 0.36 occurred in 2018, while the highest value is 1.33 happened to the Sucorinvest Maxi Fund mutual funds in 2017 and The results of statistical output from the LQ45 Stock Index show that it has the lowest value of 884.62 occurred in 2016, while the highest value was 1079.39 in 2017.

Testing for normality uses the Kolmogorov Smirnov test sig values are above or greater than 0.05 (sig> 0.05) so the normality assumption is fulfilled. The complete multicollinearity assumption test results, the tolerance value for the entire model is above 0.10 (> 0.10), these results indicate that the model is free from multicoloniearity. The heteroscedasticity test that the dots spread randomly both above and below the number 0 on the Y axis. It can be concluded that there is no heteroscedasticity in the regression model. To determine whether there is autocorrelation in a model, the Durbin-Watson value from the regression model is 2.226, the value of dU = 1.6589, 4-dU = 4 - 1.6589 = 2.3411, the Durbin Watson value > 1.6589 < 2.3411, then the autocorrelation test is fulfilled.

Based on research conducted on Equity Mutual Fund companies listed on the Indonesia Stock Exchange for the period 2016-2019 it can be concluded as follows:

The results of the F test show that the lq45 index is able to moderate the independent variable interest rate, inflation, market risk together on the performance of stock mutual funds

The results of the T test-direct effect, with a Sig.t value of 0.557, 0.113 and 0.118 where the Sig. t> 0.05 indicated that the interest rate, inflation and market risk does not directly affect to the performance of mutual funds.

The results of the T test-indirect effect (stock index lq45 as a moderating variable) indicated that with a Sig.t value of 0.002 and 0.001 <0.05 that stock index only be able to moderate interest rate and market risk to the performance of equity funds while for inflation the result indicated that stock index lq45 is not be able to moderate to the performance of mutual funds as the result for Sig.t value is 0.203>0.05

4. Conclusion

There is a significant positive effect that stock index lq45 is able to moderate interest rate and market risk on mutual fund performance but not be able to moderate of inflation, this means that the fluctuation of interest rate movements which is tends to increase will affect the movement of the real sector which is reflected by the movements of stock returns. The increase in stock prices that increase the amount of investor returns in the form of capital gains is quite attractive to investor to invest in mutual fund.

Market risk / systematic risk cannot be eliminated by forming a portfolio in an investment. Therefore, for an investor this risk becomes relevant to be considered in choosing a combination of stocks in the portfolio he forms. So that in order to determine the level of profit required or expected on a share that can be associated with systematic risk. This is in accordance with the concept of Markowitz which says that every risk will affect stock returns so that companies need to carry out a stock portfolio by minimizing the level of risk and maximizing the level of profit.

Fundamental analysis theory states that an increase in inflation is a relatively negative signal for investors in the capital market because it will increase company income and costs (Tandelilin, 2010). The company's production costs have also increased and will make investors think twice about investing in stocks, thus reducing the purchasing power of investors to invest in stocks. The decline in purchasing power causes demand for stocks to decline, so that there is a tendency for share prices to decline.

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Board Governance, Business Ethics, and Firm Social Responsibility Disclosure

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Abstract
This paper wants to investigate the impact of board control on social responsibility disclosure. The duration of this study covers three years, i.e., from 2014 until 2016. The population is from public manufacturing companies in Indonesia, and the samples are taken by a simple random sampling method. To analyze the data, the regression model gets used. This research concludes that a positive influence of the supervising board size and the woman portion in this board on the firm social responsibility disclosure is available. Also, business ethics positively affect it.

Keywords: Supervising Board Size, Females Becoming Supervisory Board, Ethics, Firm Social Responsibility Disclosure

I. INTRODUCTION

According to the stakeholder theory, firms exist to achieve their fund provider interests (stockholders and creditors) and other parties, such as the society around the firms (Ghozali & Chariri, 2007). Firms with social responsibility will obtain some benefits. They are the increase in market share, the product brand image, and investor magnetism in the capital market (Kotler & Lee, 2005).

The firms realize that to get attention from the investors related to this social responsibility issue, they have to use their governance devices. One of them gets associated with the role of supervising board (Said, Zainuddin, & Haron, 2009; Fernandez-Feijoo, Romero, & Ruiz, 2012; Setó-Pamies, 2013; Zhang, Zhu, & Dong, 2013; Giannarakis, 2014; Lone, Ali, & Khan, 2016; Nassem, Riaz, Rehman, Ikram, & Malik, 2017; Issa & Fang, 2019; Qa'dan & Suwaidan, 2019). This role is reflected by the supervising board size [see Said et al. (2009), Lone et al. (2016), Nassem et al. (2017), Qa' dan & Suwaidan (2019)] and female board portion [see Fernandez-Feijoo et al. (2012), Setó-Pamies (2013), Zhang et al. (2013), Lone et al. (2016), Issa & Fang (2019)].

Fauzan (2011) states the ethical business consideration becomes a motive for the firms to be responsible for society. As declared by Singh & Prasad (2017), the codes of conduct can be that measurement. However, the research investigating the relationship between ethics measured by these codes and firm social responsibility is infrequent. This situation inspires this study to use business ethics as one of the determinants of company social responsibility besides the supervising board size and female portion becoming this board in Indonesia's public manufacturing companies as an object.

The resource dependence theory explains that a sizeable supervising board number is needed to elevate the company performance because it contains many experts to handle the problems (Pfeffer, 1972). These experts must be having variety in their schooling and understanding of how to perform a responsibility for society (Adam, Almeida, & Ferreira, 2005). Therefore, the immense size of the supervisory board has a strong relationship with the increasing social responsibility, as shown by the study of Said et al. (2009), Lone et al. (2016), Nassem et al. (2017), as well as Qa'dan & Suwaidan (2019). Based on this explanation, we form hypothesis one in this manner.

H_1: The big supervising board size stimulates the company to perform societal responsibility.

The presence of women in the supervising board can induce the tendency to disclose more activities related to social responsibility (Bear, Rahman, & Post, 2010) because of their philanthropy (Ibrahim & Angelidis, 1994), distinctive leadership type, practiced involvement, various background (Issa & Fang, 2019). Unlike man, the woman implements her ethical standard more aggressively. She does not tolerate the practice of the opportunistic of managers; therefore, she can effectively increase the monitor on what the managers do, as illuminated by Luo, Xiang, & Huang (2017). The research conducted by Fernandez-Feijoo et al. (2012), Setó-Pamies (2013), Zhang et al. (2013), Lone et al. (2016), as well as Issa & Fang (2019) affirms these explanations by displaying a positive influence of the female board on company social responsibility. Based on this explanation, we form hypothesis two in this manner.

H_2: The large portion of the woman becoming a supervising board stimulates the firm to perform societal responsibility.

Business ethics and firm social responsibility

Business ethics and communal duty are essential to make firms sustainable in the future (Ferrell, Harrison, Ferrell, & Hair, 2019). Additionally, Fauzan (2011) explains that business ethics is the basis for the firm to realize social responsibility. To act ethically, the firm needs the codes of conduct (Singh & Prasad, 2017). The survey of Andjarwati & Budiadi (2008) on the entrepreneurs acting as the manager having a small business in the food industry demonstrates that business ethics positively affects the social firm duty. Similarly, Prasetyono (2011) finds a positive association when investigating public manufacturing firms' secretary perception in Indonesia. Based on this explanation, we form hypothesis three in this manner.

H_3: Business ethics stimulates the firm to perform societal responsibility.

II. RESEARCH METHOD

2.1. The Variables in This Study

This study has five variables. One of them, the firm social responsibility, functions as an explained variable. The rest, consisting of board governance, business ethics, and company size, performs as an explaining variable.

a. To measure the firm social responsibility disclosure (CSRD), we follow the way utilized by Qa'dan & Suwaidan (2019). Their research uses 42 required items based on GRI version 4, classified into four information: environment, human resources, communal participation, the goods-and-services given to customers. Furthermore, they divide the total existing items by 42 to measure the disclosure ratio.
b. We measure the board governance by the supervising board size (SBS) by following Said et al. (2009), Giannarakis (2014), Lone et al. (2016), Nassem et al. (2017), Qa'dan & Suwaidan (2019), Issa & Fang

(2019) and the women portion in the supervising board (WBS) by referring to Fernandez-Feijoo et al. (2012), Setó-Pamies (2013), Zhang et al. (2013), Lone et al. (2016), Issa & Fang (2019), Giannarakis (2014), Nassem et al. (2017), Qa'dan & Suwaidan (2019).

c. To measure business ethics, we use total conduct codes (CC) disclosed by the firms by denoting Singh & Prasard (2017). To make the value proportional, we divide the sum of firm statements by the largest number of one firm becoming the sample (see equation 1).

$$CCE = \frac{Total\ conduct\ codes\ for\ company}{The\ largest\ number\ of\ conduct\ of\ company\ in\ the\ sample} \ldots\ldots\ldots\ldots\text{(Equation 1)}$$

d. We use the natural logarithm of total assets to measure the company size as the control variable by outlining Ho & Wong (2001), Cheng & Courtenay (2006), Said et al. (2009), Setó-Pamies (2013), Giannarakis (2014), Lone et al. (2016), Nassem et al. (2017), and Issa & Fang (2019).

2.2. Method to grab the sample

The research population is public manufacturing firms in Indonesia in 2014, 2015, and 2016. Consistently, 129 firms (N) exist in this period. We use the Slovin formula with a 10% margin error in equation 2 to get the representing number. This formula is from Suliyanto (2009).

$$n = \frac{N}{1+Ne^2} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{(Equation 2)}$$

By applying this formula, the number of the represented samples (n) is $\frac{N}{1+Ne^2} = \frac{129}{1+129(10\%)(10\%)} = \frac{129}{2.29} = 56.32 \approx$ 56 firms. Furthermore, we work with a simple random sampling method. After grabbing samples, the names of firms are in Appendix 1.

2.3. Method to analyze the data

The regression model is used to analyze the data associated with the variables by estimating its coefficient. Furthermore, the intended model exists in equation 3.

$CSRD_{it} = \beta_0 + \beta_1 SBS_{it} + \beta_2 WBS_{it} + \beta_3 CC_{it} + \beta_4 LN(TA)_{it} + \varepsilon_{it}$ ……………………… (Equation 3)

III. RESULT AND DISCUSSION

3.1. Descriptive Statistics

This research has 168 observations, i.e., 56 firms multiplied by three years. Furthermore, the descriptive statistics for all variables can be looked at in Table 1.

- CSRD has the lowest and highest value of 0.00 and 0.80, the mean and standard deviation of 0.2042.
- SBS has the lowest and highest value of 2 and 13, the mean and standard deviation of 3.9524 and 1.79757.
- WBS has the lowest and highest value of 0.00 and 0.67, the mean and standard deviation of 0.0890 and 0.16309.
- CC has the lowest and highest value of 0.00 and 0.67, the mean and standard deviation of 0.2034 and 0.19759.
- LN(TA) has the lowest and highest value of 22.76 and 31.04, the mean and standard deviation of 27.8660 and 1.49847.

Table 1. Descriptive Statistics for Research Variables

Variable	N	Minimum	Maximum	Mean	Standard Deviation
CSRD	168	0.00	0.80	0.2042	0.19937
SBS	168	2.00	13.00	3.9524	1.79757
WBS	168	0.00	0.67	0.0890	0.16309
CC	168	0.00	0.67	0.2034	0.19759
LN(TA)	168	22.76	31.04	27.8660	1.49847

Source: Ouput of IBM SPSS 20.

Table 2 displays the regression model estimation based on research variables. SBS, WBS, and COC have a positive coefficient with the probability of the t-statistic of 0.0588, 0.0757, and 0.0810, separately. Because those values are still below the significance level of 10%, all research hypotheses are not rejected. This circumstance means the big board size, the large portion of the woman becoming a supervising board, business ethics stimulate the company to perform social responsibility.

Table 2. Estimation Result of the Regression Model: The Determinants of Firm Social Responsibility Disclosure

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-0.914747	0.308622	-2.963970	0.0035
SBS	0.017776	0.009341	1.902916	0.0588
WBS	0.153928	0.086097	1.787851	0.0757
CC	0.133513	0.076031	1.756035	0.0810
LN(TA)	0.036167	0.011829	3.057486	0.0026

Source: Modified Output of E-Views 6.

From the statistical hypothesis testing, it can be inferred some evidence as follows. Firstly, the big supervising board size can stimulate the company to perform societal responsibility. The people becoming the supervisory board are so smart that they can think of the activities needed to serve the firm community obligation. To execute these activities, they need to communicate with top managers. Therefore, these events can be announced in its annual report. Thus, this study confirms the study of Said et al. (2009), Lone et al. (2016), Nassem et al. (2017), and Qa'dan & Suwaidan (2019).

Secondly, the large portion of the woman becoming a supervising board can stimulate the firm to perform societal responsibility. This situation shows that the females, with her high humanity, can elevate many good relationships with the stakeholders and concern for the community around the firms. Therefore, this study verifies the study of Fernandez-Feijoo et al. (2012), Setó-Pamies (2013), Zhang et al. (2013), Lone et al. (2016), and Issa & Fang (2019).

Thirdly, business ethics can stimulate the firm to perform societal responsibility. In this research, we use the firm codes of conduct to measure business ethics. These codes are useful as the guidance that managers and employees have to obey and proven as a good proxy because of a positive impact. Therefore, the other researchers can use it in their further investigation. By only considering the positive effect, without the measurement, this study affirms the study of Andjarwati & Budiadi (2008) and Prasetyono (2011).

By referring to the discussion, this study suggests that firms should have a giant supervising board, not above 13 (see the maximum number of SBS in Table 1), by considering the company size. Besides, the company controlling shareholders can place more females on the supervising board because they care about society. Additionally, the employees and managers must implement the codes of conduct to reflect their care to the community.

IV. Conclusion

This research goal is to investigate the influence of the supervising board size, the woman portion in this board, and business ethics on social responsibility disclosure. By utilizing the years 2014, 2015, and 2016 as time observation, 56 manufacturing companies as the sample from the capital market of Indonesia, and the regression model to analyze the data, this study summarizes some evidence.

1. The big supervising board size can stimulate the company to perform societal responsibility.
2. The large portion of the woman becoming a supervising board can stimulate the firm to perform societal responsibility.
3. Business ethics can stimulate the firm to perform societal responsibility.

This study has some boundaries, like the short duration: three years, the utilization of one industry: manufacturing, and the number of determining factors. This situation provides the chance for the next academics to improve them. Firstly, they can add the years as the time observation to be longer, for instance, five or ten years. Secondly, they can occupy firms from non-financial industries so that the conclusion can be extended. Finally, they can augment the determinants by utilizing the outside supervisory board portion, the total audit committee members and board summits, the domestic and foreign institutional possession, managerial ownership, profitability, and leverage.

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Appendix 1. The name of the samples

No.	Code	The name of the company
1.	BRAM	Indo Kordsa Tbk.
2.	GDYR	Goodyear Indonesia Tbk.
3.	INDS	Indospring Tbk.
4.	LPIN	Multi Prima Sejahtera Tbk.
5.	MLBI	Multi Bintang Indonesia Tbk.
6.	INAF	Indofarma Tbk.
7.	KAEF	Kimia Farma Tbk
8.	KLBF	Kalbe Farma Tbk.
9.	MERK	Merck Tbk.
10.	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk.
11.	MBTO	Martina Berto Tbk.
12.	TCID	Mandom Indonesia Tbk.
13.	UNVR	Unilever Indonesia Tbk.
14.	CINT	Chitose Internasional Tbk.
15.	LMPI	Langgeng Makmur Industri Tbk.
16.	INTP	Indocement Tunggal Prakarsa Tbk.
17.	SMCB	Holcim Indonesia Tbk.
18.	WTON	Wijaya Karya Beton Tbk.
19.	AMFG	Asahimas Flat Glass Tbk
20.	ARNA	Arwana Citramulia Tbk.
21.	IKAI	Intikeramik Alamasri Industri Tbk
22.	KIAS	Keramika Indonesia Assosiasi Tbk.
23.	MLIA	Mulia Industrindo Tbk.
24.	TOTO	Surya Toto Indonesia Tbk.
25.	ALKA	Alakasa Industrindo Tbk.
26.	BAJA	Saranacentral Bajatama Tbk.
27.	BTON	Betonjaya Manunggal Tbk.
28.	GDST	Gunawan Dianjaya Steel Tbk
29.	JKSW	Jakarta Kyoei Steel Works Tbk.
30.	JPRS	Jaya Pari Steel Tbk.
31.	LION	Lion Metal Works Tbk.
32.	LMSH	Lionmesh Prima Tbk.
33.	NIKL	Pelat Timah Nusantara Tbk.
34.	PICO	Pelangi Indah Canindo Tbk.
35.	BUDI	Budi Starch & Sweetener Tbk.
36.	DPNS	Duta Pertiwi Nusantara Tbk.
37.	EKAD	Ekadharma International Tbk.
38.	ETWA	Eterindo Wahanatama Tbk.
39.	INCI	Intanwijaya Internasional Tbk.
40.	SRSN	Indo Acidatama Tbk.

Appendix 1. The name of the samples

No.	Code	The name of the company
41.	TPIA	Chandra Asri Petrochemical Tbk.
42.	UNIC	Unggul Indah Cahaya Tbk.
43.	AKKU	Alam Karya Unggul Tbk.
44.	AKPI	Argha Karya Prima Industry Tbk
45.	APLI	Asiaplast Industries Tbk
46.	BRNA	Berlina Tbk.
47.	FPNI	Lotte Chemical Titan Tbk.
48.	IGAR	Champion Pacific Indonesia Tbk.
49.	IMPC	Impack Pratama Industri Tbk.
50.	IPOL	Indopoly Swakarsa Industry Tbk.
51.	SIAP	Sekawan Intipratama Tbk.
52.	SIMA	Siwani Makmur Tbk.
53.	TALF	Tunas Alfin Tbk.
54.	TRST	Trias Sentosa Tbk.
55.	YPAS	Yanaprima Hastapersada Tbk
56.	CPIN	PT Charoen Pokphand Indonesia Tbk.

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The Impact of Exports on Economic Growth in Vietnam

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Abstract
In 2010, Vietnam achieved a total import-export turnover of US $ 154 billion, but by 2019, that number increased more than tripled, reaching over $ 500 billion. In 2020, while the context of complicated developments of the outbreak COVID-19 in the world, disrupting supply chain in international trade, Vietnam's merchandise exports remained the rising trend and exerted a positive impact on economic growth. In the article, the research team will present the results of examining the current situation of Vietnam's exports and economic growth in the period 2005 - 2019 and the first 9 months of 2020. By using Eview8 software to analyze the data series compiled every quarter in the period 2005 - 2019, the research team evaluated the impact of exports on Vietnam's economic growth in this period and pointed out some problems for export activities of Vietnam. Besides, the research team also considers the opportunities and challenges for export activities in the context of the COVID-19 pandemic. Finally, the research team made some recommendations to boost Vietnam's exports in the context of the COVID 19 pandemic.

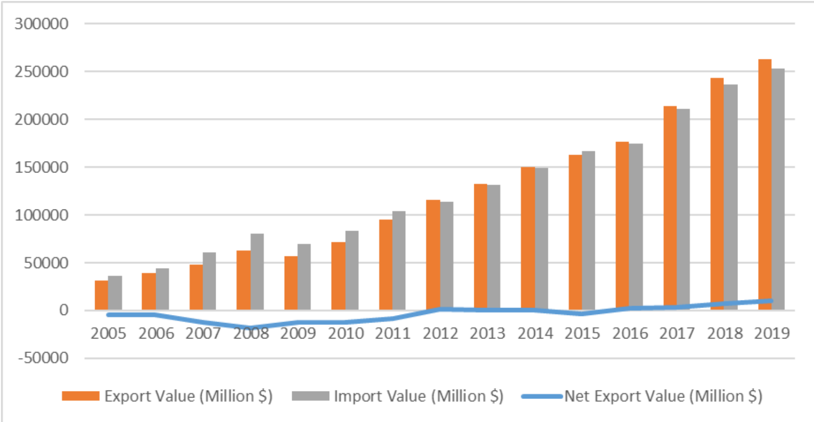
Keywords: Export, Economic Growth, Covid 19 Effects

1. Current situation of Vietnam's exports and economic growth in the period 2005-2019

1.1. Current situation of Vietnam's exports in the period 2005-2019

Summary of IMF-IFS data have shown that in the period before 2011, Vietnam is always a trade deficit country, in 3 consecutive years from 2012 to 2014, Vietnam started to have a trade surplus, but 2015 marked a coming back of the trade deficit situation with the trade balance deficit with 3.55 billion USD. Despite the trade deficit in 2015, the export turnover still increased to reach USD 162,016 billion, up 8% compared to 2014. Besides, in the first months of 2016, the trade surplus tended to return, although in the fourth quarter of 2016 the trade balance was in deficit, for the whole of 2016 the trade balance had a surplus of 2.2 billion USD. In the first months of 2017, Vietnam also faced a trade balance deficit, but the trade surplus returned in the last months of the year, and in 2017 Vietnam had a trade surplus of 2.92 billion USD. In 2018, the export value increased to 243.47 billion USD, the whole year reached the trade surplus with a surplus-value of 6.78 billion USD. In 2019, the export value continues to increase to 263,451 billion USD, and Vietnam continues to have a trade surplus with a value of 9,943 billion USD.

Figure 1: The value of export, imports, and trade balance of Vietnam in the period 2005 - 2019



Source: Summary of IMF-IFS data

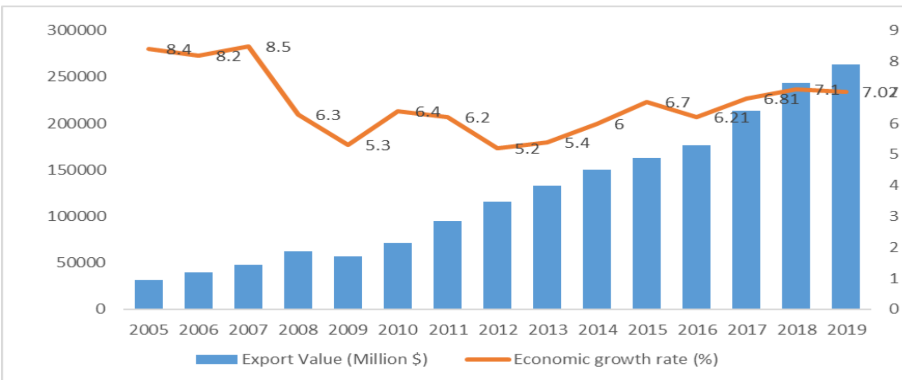
According to the General Department of Vietnam Customs in 2019, there are more than 20 groups of items that have achieved an export value over the US $ 1 billion, of which 10 groups of goods have an export turnover of $ 2 billion or more, including Items: Telephones and spare parts; Textiles; Computers, electronic products, and components; Shoes of all types; Wood and wood products; Seafood; Handbags, purses, suitcases, hats, umbrellas, umbrellas; Cameras, camcorders, and components; The coffee; fibers, textiles ... The structure of export products is changing in a positive direction, gradually reducing the content of raw export to increase the export of processed products and industrial products. The proportion of groups of agricultural products, aquatic products, fuel, and mineral products decreased; The proportion of the group of processed industrial goods has grown highly, playing an important role, leading to an increase in the country's exports. The restructuring of commodity groups is in line with the roadmap for the implementation of the strategic goals of commodity import and export in the 2011-2020 period, with a vision to 2030.

Vietnam accelerating the process of international economic integration has broadened export markets, Vietnam's goods have reached most markets in the world. A lot of products have gradually gained their foothold and competitive ability in many markets with high-quality requirements such as the EU, Japan, the US ... The incentives of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and European-Vietnam Free Trade Agreement (EVFTA) are expected not only to make export opportunities but also to be motivational effects to boost domestic production.

1.2. Vietnam's economic growth in the period 2005-2019

In the period 2005 - 2010, Vietnam's economic growth showed signs of slowing down. In the first half of the period 2005 - 2007, macroeconomic instabilities began appearance. One of the main reasons for this situation is the economic stimulus policy through loosening credit too large since 2000 to counteract the economic slowdown.

Figure 2. Export value and economic growth of Vietnam in the period 2005 - 2019



Source: Summary data from IMF-IFS and GSO

In the period 2005-2010, Vietnam's economic growth rate fluctuated from 5% to approximately 9% per year. In this period, the growth was unstable and never reached two numbers due to some reasons: The first, Vietnam's economic dependence on the fluctuations of the world economy; The second, Vietnam's production factors lack stability; The third, in this period, the world economy faced with the economic and financial crisis starting in the US in 2008 as well as the public debt crisis of Europe 2010, which exerted a great impact on the Vietnamese economy. The effects on Vietnam's economy from global crises are inevitable because of the export-driven growth orientation, while the import remained very large for domestic production and consumption.

After a long period of economic recession, in recent years, Vietnam's economic growth showed signs of recovery. In 2017 the growth rate was 6.81%, this figure increased to 7.1% in 2018 and slightly reduced to 7.02% in 2019 (Chart 2). The openness of the Vietnamese economy has increased sharply, Vietnam's exports have increased rapidly with a high growth rate of over 15% in the period 2011-2019 and 2019 the export-import turnover milestone of over 500 billion USD. According to Government Electronic Newspaper (2019), after 25 years of joining ASEAN, more than 10 years of joining the WTO, Vietnam has become the 22nd largest export economy in the world.

2. The impact of exports on economic growth in Vietnam in the period 2005-2019

Some people have suggested that enhance in increasing exports is unlikely to contribute to a higher GDP growth rate if the other conditions remain unchanged, and/or some other prerequisites are not satisfied. Some researchs have shown the faint role of the exports to the GDP increased in some nations and groups of countries. The research team has not found any study showing an inverse relationship between exports and economic growth

In the case of Vietnam in recent years, the openness of the economy has increased, exports are an important part of Vietnam's economy and one of the important pillars contributing to economic growth. In 2010, exports reached only 71 billion USD, so far, they are expected to reach 255 billion USD. To find out the relationship between Vietnam's exports and economic growth in the period 2005 - 2019, the research team collected quarterly data of GDP at 2010 prices (GDPR) and the value of export turnover (X) of Vietnam in the period 2005 - 2019 (*with 60 observations*). The price fluctuations are excluded from export value by dividing the value of the export by the CPI. The export value, after excluding the volatility of price, is denoted (X_R). The variables "GDP_R, X_R", after logarithmic are denoted "$LGDP_R$, LX_R" respectively. The econometric model is used to examine the impact of exports on economic growth, the results are shown in Table 1.

Table 1: The impact of exports on economic growth in Vietnam in the period 2005-2019

Dependent Variable: LGDP
Method: Least Squares
Date: 10/17/20 Time: 21:22
Sample: 2005Q1 2019Q4
Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LX_R	0.808704	0.057305	14.11216	0.0000
C	8.916939	0.311091	28.66345	0.0000

R-squared	0.774453	Mean dependent var	13.29846
Adjusted R-squared	0.770565	S.D. dependent var	0.315613
S.E. of regression	0.151177	Akaike info criterion	-0.907971
Sum squared resid	1.325553	Schwarz criterion	-0.838160
Log-likelihood	29.23913	Hannan-Quinn criter.	-0.880664
F-statistic	199.1531	Durbin-Watson stat	2.617676
Prob(F-statistic)	0.000000		

Source: The result from analyze by Eviews 8 software

The results of data analysis by using Eviews 8 software in Table1 have shown the impact of exports on GDP in Vietnam in the period 2005 - 2019 with the following quarterly data series:

$$\mathbf{LGDP = 8.916939 + 0.808704 \times LX_R + e}$$

The results have shown that:
The independent variable (LX_R) is statistically significant (P-value of this variable is 0.0000, less than 5%); Determination coefficient of model $R^2 = 0.774453 > 0.6$; the value Prob (F-statistic) = 0.000000 <5% demonstrated that the model is statistically significant

GDP_R is affected by export value over time, in particular, coefficient b2 = 0.808704> 0 has shown that in the case of remaining unchanged of other factors, a rising in export value will make GDP tend to increase. When the value of exports rises by 1%, the GDP will increase by 0.808704%. This result demonstrated export value and economic growth have a positive relationship, increasing export value contributes to economic growth, this is consistent with the theory, and with the case of the Vietnamese economy.

The model results have shown that the value of the export turnover explained 77.4453% of the variation of GDPR. According to the research team, this is also appropriate, because Vietnam's economy has a large openness, exports are an important factor contributing to economic growth.

Table 2. Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.038375	Prob. F(1,58)	0.8454
Obs*R-squared	0.039672	Prob. Chi-Square(1)	0.8421
Scaled explained SS	0.019947	Prob. Chi-Square(1)	0.8877

Source: The result from analyze by Eviews 8 software

The results from Table 2 showed that the model did not have defects in the variance of variation, values Prob> 0.05

Table 3. Breusch-Godfrey Serial Correlation LM Test

F-statistic	4.335157	Prob. F(2,56)	0.0178
Obs*R-squared	8.044167	Prob. Chi-Square(2)	0.0179

Source: The result from analyze by Eviews 8 software

The results from Table 3 showed that the model did not have correlation defects with significant at 1%, values Prob> 0.01.

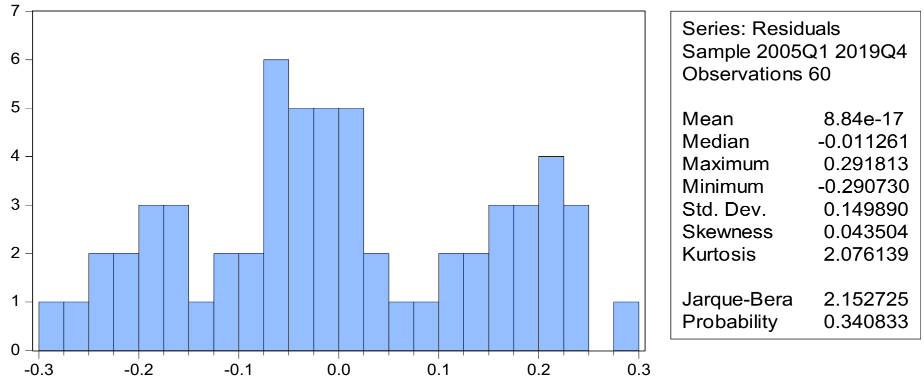
Table 4. Variance Inflation Factors
Date: 10/17/20 Time: 21:23
Sample: 2005Q1 2019Q4
Included observations: 60

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
LXR	0.003284	254.0720	1.000000
C	0.096778	254.0720	NA

Source: The result from analyze by Eviews 8 software

The results from Table 4 showed that the model did not have multicollinearity defects, VIF values <2.

Figure 3. Standard distribution remainder



Source: The result from analyze by Eviews 8 software

The results from Table 4 showed the normal distribution residue, Probability value = 0.340833> 0.05.

It can be seen that the econometric model results support the view that exports play an important role in the growth of the Vietnamese economy in the period 2005 - 2019. In the coming time, there should be solutions to promoting export activities to support economic growth in Vietnam, especially in the context of many difficulties caused by Covid-19.

3. Some problems in Vietnam's export performance in the period 2005 - 2019

Although remarkable results have been achieved, there are still several issues that need to be resolved in the export activities in the 2005 - 2019 period.

Firstly, the added value of export products is not high, the export efficiency of some products is not commensurate with the potential. Small-scale and scattered export enterprises, outdated production technology, limited management, and business capacity, and poor competitiveness compared to international competitors. The main export products of Vietnam are in basic commodity groups, such as petroleum and minerals, agricultural products, textiles, footwear, seafood, furniture, and electronics ... These products are exported mainly in the form of raw or preliminary processing, leading to low added value. Besides, these products are labor-intensive, but on the trend of no longer growing rapidly in the world, besides, they are very easily affected by the lowering of costs from competitors in the region with low labor costs.

Secondly, the structure of exports is not diversified, the localization rate of raw materials is low. Although the structure of export goods has gradually changed from exporting raw materials to the group of industrial products, it is still the processing type. Notwithstanding that the localization rate has gradually increased, businesses need to meet the strict requirements of quality, technical standards, and the localization of raw materials to ensure the conditions for enjoying preferential tax rates.

*Thirdly, Vietnam enterprises have not built a close link in the supply chain for export good*s. The linkage between raw material producers, processing enterprises, and exporters have not been established effectively to contribute to stabilizing raw material sources and to create proactive in regulating export volume. The formulation, promulgation, and application of technical standards to exported goods is limited

Fourthly, the export strategy is not linked to the exploitation of strengths in agriculture. Vietnam is a country where agriculture accounts for a large proportion with quite diverse products. However, Vietnam is facing the risk of losing its advantages of tropical monsoon agriculture in global competition. Currently, Vietnam's exports are mainly competitive in terms of quantity and price, especially agricultural products, including livestock, farming, and aquatic products. But Vietnam's agriculture does not pay attention to quality standards and food hygiene and safety for agricultural products. Therefore, Vietnam's agricultural products are difficult to penetrate large markets. The work of building brand names and improving product quality has not been given due attention, so it is easy to encounter market risks.

Fifthly, exports focus on some familiar markets, with poor product categories. The coordinating role of the industry associations is not effective, leading to unfair competition. Besides several pioneering enterprises and FDI enterprises have stable export markets, built up a reputation in export activities, most Vietnamese enterprises do not build their stable market; have not actively grasped, learned, and researched the world market, and are not confident enough in investing in export promotion and exploitation market. Due to these reasons, not only the competitiveness of enterprises and products is not high but also limit the ability to access and expand the market.

Sixthly, trade promotion, and finding out new markets are not effective. Although the current economic policies are export-oriented, the State's investment in trade promotion and market research is still inadequate; The Ministry of Industry and Trade and the industry associations have organized many trade promotion activities in key markets with the State's funding support, but a lot of enterprises are still hesitant and lack the confidence to participate and exploit opportunities to expand their market

4. Challenges and opportunities for Vietnamese export activities in the context of the COVID-19 epidemic

4.1. Challenges for Vietnamese export activities

The COVID-19 epidemic is still complicated in many areas of Europe, America, ASEAN, the Middle East ... The application of measures to limit travel, temporarily close immigration, and limit in gathering, buying with large numbers of people as well as activities in commercial centers ... that cause the demand for goods such as textiles, footwear, wooden products ... to decline sharply.

Due to the effects of the Covid 19 epidemic, many importers of Vietnam's goods have announced to postpone orders with the application of force majeure terms and temporarily not negotiated for year-end orders, which makes Vietnam facing difficulties for the output market, especially with two main export markets, the US and the EU. Cancellation and postponement of long orders and not being able to sign new orders makes exporters face difficult to pay salaries to workers, suppliers, rent space, pay interest on bank loans

Besides, Vietnam as well as many countries restrict travel, reduce international flights to and from, and recommended limiting in the face to face meeting has seriously affected transactions and work between individuals. Vietnamese enterprises with foreign partners, especially for activities that require direct work exchange. Moreover, difficult and slow clearance activities due to disease control have increased costs and time for exporters. Meanwhile, due to the decrease in demand, the prices of key export products of Vietnam also decreased at the same time, which greatly affected the performance of exporters.

The trend of reducing global trade value happens while the world economy is at the end of a growth cycle with the impact of the US-China trade war, now adding the impact of the COVID-19 epidemic. This downtrend will take place in the medium term and have a strong impact on the global economy. Vietnamese exporters may face disruptions to the global trade supply chain and greatly affect their production and business situation.

4.2. Opportunities for Vietnamese export activities

Although facing many challenges posed to Vietnam's export activities in the context of the COVID-19 epidemic, Vietnam's merchandise export also has positive expectations in the near future. Incentives under the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the European-Vietnam Free Trade Agreement (EVFTA) are expected to have a boost to domestic production.

For the EU market, thanks to the opening commitments in the EVFTA Agreement, Vietnam is expected to export to the EU market to achieve a decent growth of over 20% by 2020, this increase will continue in the following years. Seafood is a commodity with many competitive advantages in the EU market, which is expected to be the most benefiting item from EVFTA. Seafood export turnover to the EU accounts for about 15% of the total seafood export turnover of Vietnam. EU is the second-largest seafood export market of Vietnam after the United States. The EVFTA Agreement comes into effect, a lot of tariff lines will be cut, and Vietnam's seafood products will compete with those of other countries, which contribute to boosting seafood exports of Vietnam in this potential market. Export of agricultural and forestry products to the EU accounts for about 13% of the total export turnover of agricultural and forestry products of Vietnam, the effective EVFTA is an opportunity to bring Vietnamese agricultural products to this market. It is forecasted that in 2021, the export of agricultural products to the EU will increase by about 10% of the total export turnover to the EU

In addition, the EVFTA Agreement has opened new opportunities for pangasius exporters. To take advantage of, businesses need to prepare before the tax rate of pangasius will drop to 0% in the next 3 years. In the short term, the whitefish processing factories in China have not still run leading to a shortage of whitefish supply, especially in the EU market, this is also an opportunity for Vietnamese pangasius businesses in the context of epidemic COVID-19 still complicated.

Furthermore, the Forest Law Enforcement, Governance, and Trade Voluntary Partnership Agreement is approved, facilitating the export of timber and timber products to the EU. These are factors that help create growth drivers, remove difficulties for export activities in the coming time.

For the Countries in the CPTPP market. In the first quarter of 2020, despite facing the COVID-19 epidemic, exports to the nations in CPTPP had fairly good growth, especially in some markets that had not previously had FTAs such as Canada, Mexico ... Specifically:

With the Canadian market, according to the latest statistics of the Import and Export Department of the Ministry of Industry and Trade (2020), in the first 3 months of 2020, Vietnam's exports to Canada are estimated at 858 million USD, up 4.2% over the same period with many key export products such as telephones and components, textiles, footwear, seafood, tea, pepper, cashew nuts, coffee, furniture

With the Mexican market, export value to the Mexican market also reached more than 727 million USD, up 46.5% over the same period in 2019. The main exported products are computers, electronic products, and components, phones of all kinds and components, footwear, textiles ...

With the Singapore market, exports from Vietnam to the Singapore market increasing strongly due to Singapore's efforts and urgent diversification of supply sources and production materials, in the context of an interrupted supply from the Chinese market. Singapore considers Vietnam to be one of the key markets to help it offset the shortage of goods, especially agricultural products, seafood, construction

For the US market. At the end of 2019, the US Department of Agriculture (USDA) officially confirmed Vietnam's pangasius management and monitoring system equivalent to that of the US. This affirmed that Vietnam's capacity to control quality and food safety in pangasius production and export chains has met one of the most stringent requirements, it provides opportunities for Vietnamese pangasius products to approach and expands export markets easier not only in the US but also in other fastidious markets. In particular, the anti-dumping tax rate on the US market decreased, the results of the equivalent recognition of the food safety management and control system on pangasius announced by the US Department of Agriculture are a favorable basis that helps Vietnam's seafood products improve their competitiveness

For the Chinese and Japanese markets. Export activities to China and Japan have shown signs of recovery since March because the disease situation in these countries is gradually being controlled. The gradual easing of export activities will be an opportunity for Vietnam to export agricultural and aquatic products to these markets in the coming time.

The COVID-19 epidemic puts great challenges to the trend of globalization and international integration. However, Vietnam needs to make the most of the benefits from the new generation of free trade agreements, turning challenges into opportunities, and we fully believe in achieving double victories in 2020: Medium the COVID-19 epidemic has been successfully prevented and prevented, both develop socio-economic and maintain the reasonable growth rate.

5. Some recommendations to boost Vietnam's exports, support economic growth in the context of the Covid-19 pandemic

Base on research on the impact of exports on growth, studying the actual situation of exports in the period 2005-2019, studying opportunities and challenges for Vietnam's export activities in the context of Vietnam participates in the new generation of free trade agreements and the impact of the COVID-19 pandemic, the research team has proposed several ways to promote Vietnam's exports in the coming time:

The Ministry of Industry and Trade needs to promptly provide information to enterprises and commodity lines to proactively formulate a plan to overcome the difficult period and recover after the epidemic has been controlled. It is necessary to continue to synthesize, study, and evaluate the effects of COVID-19 epidemic prevention measures, which are responsible for difficulties in the trade, and limit entering in major export markets, thereby making forecasts impact on commodity groups, products and propose measures to support enterprises

To review and select alternative markets capable of supplementing the decline in export turnover to the Chinese market, to plan trade promotion accordingly. Support businesses to find new, potential markets, such as India, Sweden ... Take advantage of opportunities from the EVFTA Agreement to promote production, especially seafood products; linking production with processing and consumption; support enterprises to take advantage of opportunities, set up plans to expand the seafood market, especially when the tax rate of pangasius will be reduced to 0% in the next 3 years. Besides, encourage investment in fruit trees, perennial industrial crops; plant and take care according to technical processes to get high economic efficiency, ensure traceability for agricultural products imported to European countries.

Restructuring production and commodity export markets, focusing on producing products that meet high standards, building the origin of goods and geographical indications. It is important to continue to take advantage of the CPTPP Agreement in the context of the COVID-19 epidemic. Negative impacts from the COVID – 19 pandemics, although affecting Vietnam's exports, this time is also a "waiting period" for Vietnam to continue to review the legal system and amend the legal documents on CPTPP implementation, capacity building for the enterprises.

Restructuring export markets in the direction of market diversification, to avoid dependence on one market and one partner; to take advantage of exports to potential markets. To attach importance to developing new export products and environmentally friendly export products. Disseminate, consult and train production and export enterprises on the application of goods quality standards of foreign markets.

Building scenarios and forecasting the impact of trade in general and international trade in particular on the development and growth of Vietnam's economy to promptly make decisions and operating mechanisms; promptly provide information to businesses and industries to actively build a plan for a balanced using their resources to overcome the difficult period and recover after the epidemic has been controlled.

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Organizational Citizenship Behavior, Organizational Climate, and Employee Performance

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Abstract
This study investigates the impact of organizational citizenship behavior (OCB) and climate (OC) on employee performance. The population used contains employees working in one of the pharmaceutical companies in Cimahi, West Java, where their sum is 1,533 people. By the Slovin formula with a margin of error of 10%, the sum of samples needed is 94. Furthermore, they are picked up by the simple random sampling method. The structural equation model based on partial least square is utilized to analyze the data because of the sample size. After testing hypotheses and discussing the facts, this research infers that OCB has no effect on employee performance, but OC does with a positive sign.

Keywords: Pharmaceutical Company, Employee Achievement, Working Atmosphere

INTRODUCTION

To persist in the rivalry, a company needs to utilize its unique resources to achieve a competitive advantage (Madhani, 2009), such as technology and people (Ardana, Mujiati, & Utama, 2012). Furthermore, Ardana et al. (2012) explain that people are the resource that can follow the change in era; therefore, they need to get training and development as an asset. All of these things carried out by the company are to improve their working performance (Lestari & Ghaby, 2018).

Some antecedents of working performance exist. At least two determinants can be available. The first is organizational citizenship behavior (OCB) (Chiang & Hsieh, 2012; Wu, You, Fu, & Tian, 2014; Basu, Pradhan, & Tewari, 2016; Abrar & Isyanto, 2019; Barsulai, Makopondo, & Fwaya, 2019; Lestari & Ghaby, 2018). The second is the organizational climate (OC) (Agyemang, 2013; Bhat, 2014; Bhat & Bashir, 2016; Raja, Madhavi, & Sankar, 2019; Obeng, Quansah, Cobbinah, & Danso, 2020). However, it is still found research showing that OCB does not influence employee performance (Agustiningsih, Thoyib, Hadiwidjojo, & Noermijati, 2016) and neither does OC (Pasaribu & Indrawati, 2016).

This research intends to examine the OCB and OC effect on employee performance based on these opposing facts utilizing one of the pharmaceutical companies in Cimahi, West Java. This company produces drugs so that it must pay attention to the quality of work of the employees. This quality is the reflection of employee performance.

Theoretically, OCB refers to the employee's willingness to work beyond their job depiction (Schermerhorn Jr., Hunt, Osborn, & Uhl-Bien, 2010). Employees with high OCB will do everything without the expectation of obtaining financial rewards. They are ready to work voluntarily to meet their company goals (Organ, 1988). Therefore, they will outperform in the workplace (Robbins & Judge, 2018). In their research, Chiang & Hsieh (2012) and Wu et al. (2014) prove a positive impact of OCB on employee performance. Correspondingly, Basu et al. (2016), Abrar & Isyanto (2019), Barsulai et al. (2019), and Lestari & Ghaby (2018) confirm the same result.

Academically, the working atmosphere reflects a combination of employee perception about the desired working and social environment. The leaders can renew this climate to create employee satisfaction by surveying their opinion (Higgins, 1982). Hence, employees working in a comfortable environment tend to perform a good result. In their study, Agyemang (2013), Bhat (2014), Bhat & Bashir (2016), Raja et al. (2019), and Obeng et al. (2020) affirm this statement by revealing the positive effect of climate in the workplace on employee performance.

By considering these supporting facts about the effect of OCB and organizational climate on employee performance, two hypotheses can be stated in this manner.
H_1. The positive influence of OCB on employee performance happens.
H_2. The positive influence of organizational climate on employee performance happens.

II. RESEARCH METHOD

2.1. Variable Definition

The variables utilized consist of two kinds. Firstly, the dependent variable: employee performance. Adopting Thompson (2005), this study uses four items. Moreover, these items are displayed in Table 1 and measured by an interval scale, ranging from 1 for strongly disagree until 5 for strongly agree.

Table 1. The items of employee performance

Items	Scale
I can set the working-based targets (EP1)	Interval
I can reach the targets well (EP2)	Interval
I can allocate the time well in the workplace (EP3)	Interval
I can accomplish works beyond the target (EP4)	Interval

Source: Thompson (2005)

Secondly, the independent variables consist of organizational citizenship behavior (OCB) and organizational climate (OC). According to Hoofman, Blair, Meriac, & Woehr (2007), OCB has five dimensions. They are altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. In this study, the OCB dimension items are based on Lin, Lyau, Tsai, Chen, & Chiu (2010), as seen in Table 2. Furthermore, these items are measured by an interval scale, ranging from 1 for strongly disagree until 5 for strongly agree.

Table 2. The items of OCB dimensions

Dimension	Items	Scale
Altruism	I assist my unattended co-workers (ALT1). I assist my co-workers having weighty loads (ALT2). I assist new co-workers even though my help is not needed (ALT3). I assist my co-workers with work issues (ALT4).	Interval
Conscientiousness	I reduce the personal chat with my co-workers during work (CONS1). I reduce the involvement of unrelated chat with works (CONS2). I can come to the workplace early if the situation requires me to do it (CONS3). I can follow the instructions without supervision (CONS4).	Interval
Sportsmanship	I do not complain about unimportant substances (SPORT1). I give attention to the right things (SPORT2). I tend to calm (SPORT3). I do not search for the organization's mistakes (SPORT4).	Interval
Courtesy	I attempt to create working harmony at work (COURT1). I consider the consequence of my actions on co-workers (COURT2). I voluntarily attend the meeting in the workplace (COURT3). I like to organize a meeting in the workplace (COURT4).	Interval

Table 2. The items of OCB dimensions

Dimension	Items	Scale
Civic virtue	I am present in the unimportant meetings that can increase a corporate image (CV1). I keep following the variation in the organization (CV2). I read and follow notes and publications at the workplace (CV3). I give a chance to assess the best for the organization (CV4).	Interval

Source: Lin et al. (2010)

b. Indicating Mutonyi, Slåtten & Lien (2020), this study utilizes eight items to measure organizational climate. Likewise, these items are measured by an interval scale, ranging from 1 for strongly disagree until 5 for strongly agree, and present in Table 3.

Table 3. The items of organizational climate

Items	Scale
My supervisor allocates the responsibility to me (OC1).	Interval
My supervisor induces me to perform initiative (OC2).	Interval
My supervisor is ready to listen to me (OC3).	Interval
Employees have a chance to solve similar issues through various methods (OC4).	Interval
Tolerance to do faults is given in my workplace (OC5).	Interval
I can study something new in the workplace (OC6).	Interval
I can obtain to learn a new method to finish my work (OC7).	Interval
I can get knowledge when demanding it (OC8).	Interval

Source: Thompson (2005)

2.2. The method to take samples and get the data

The total population (N) of the employees working at the company in this study is 1,533. Moreover, this study applies the Slovin formula in the first equation to count the sample size (n).

$$n = \frac{N}{N(e)^2+1} \text{ .... (Equation 1)}$$

By exhausting a margin of error (e) of 10%, the sample size $(n) = \frac{1.533}{1.533(10\%)^2+1} = \frac{1.533}{16,33} = 93.87 \approx 94$ employees. After getting this number, this study utilizes simple random sampling to take samples from the population. Once 94 employee names are known, the next step is surveying online to obtain the data. This process happens from 16 until 30 September 2019. In this process, Hartono (2012) explains the questionnaire distribution is essential to capture the responses.

The responses of employees have to meet validity and reliability testing (Ghozali, 2016). Hence, the confirmatory factor analysis and composite reliability analysis are employed to attain that condition (Ghozali 2008).

- For the validity test, if the item loading factor exceeds 0.5, the item is declared valid, and vice versa.
- For the reliability test, if the composite reliability coefficient is above 0.7, the accurate items are reliable, and vice versa.

2.3. Data Analysis Method

This study utilizes the structural model based on partial least square to analyze the data. It happens because of the latent variables and the small sample size, 94, which is still in the required range between 30 and 100 (Ghozali 2008). Furthermore, this structural model can be got in the second equation.

$$EP = \gamma_1.OCB + \gamma_2.OC + \zeta \text{ .... (Equation 2)}$$

III. RESULTS & DISCUSSION

3.1. The demographic features of employees

Table 4 presents the demographic features of 94 employees joining this survey. These features contain gender, age, last formal schooling, and tenure.

a. Based on gender, the number of men and women participating is 34 (36.17%) and 60 (63.83%).
b. Based on age, the total employees having the age of ≤ 20 years is 11 (11.7%), 21-30 years is 12 (12.77%), 31-40 years is 33 (35.11%), 41-50 years is 21 (22.34%), >50 year is 17 (18.09%).
c. Based on the last formal schooling, the number of employees passing senior high school is 56 (59.57%), undergraduate and vocational school is 11(11.70%), undergraduate academic school is 23 (24.47%), graduate school is 4 (4.26%).
d. Based on tenure, the sum of employees with assignment below one year is 16 (17.02%), from one until two years is 9 (9.57%), three until five years is 19 (20.21%), five until seven years is 11 (11.70%), seven until ten years is 15 (15.96%), and above ten years is 24 (25.53%).

Table 4. Demographic features of the employees

Feature	Description	Number	The portion (%)
Gender	Man	34	36.17
	Woman	60	63.83
	Total	94	100
Age	≤ 20 years	11	11.70
	21-30 years	12	12.77
	31-40 years	33	35.11
	41-50 years	21	22.34
	> 50 year	17	18.09
	Total	94	100.00
Last formal schooling	Senior high school	56	59.57
	Undergraduate and vocational school	11	11.70
	Undergraduate academic school	23	24.47
	Graduate school	4	4.26
	Total	94	100.00
Tenure	<1 year	16	17.02
	1-3 years	9	9.57
	3-5 years	19	20.21
	5-7 years	11	11.70
	7-10 years	15	15.96
	>10 years	24	25.53
	Total	94	100.00

Source: Processed primary data

3.2. The validity and reliability test result

Table 5 consists of two panels, i.e., A and B. Panel A demonstrates the final result of the validity and reliability test for items of the dimension of organizational citizenship behavior.

- The valid altruism items are ALT1, ALT2, and ALT3 because of the loading factor of 0.762, 0.630, and 0.770, higher than 0.5. They are reliable because the composite reliability coefficient (CRC) is 0.766, higher than 0.7.
- The accurate conscientiousness items are CONS1 and CONS3 because of the loading factor of 0.814. They are reliable because CRC is 0.798, higher than 0.7.
- The usable sportsmanship items are SPORT1, SPORT2, and SPORT3 because of the loading factor of 0.743, 0.552, and 0.698. They are reliable because CRC is 0.798, higher than 0.7.
- The valid courtesy items are COURT1 and COURT3 because of the loading factor of 0.778. They are reliable because CRC is 0.754, higher than 0.7.
- The accurate civic virtue items are CV1, CV2, and CV3 because of the loading factor of 0.851, 0710, and 0.646. They are reliable because CRC is 0.782, higher than 0.7.

Panel B demonstrates the final result of the validity and reliability test for the organizational citizenship behavior dimensions. In this panel, the loading factor of altruism, conscientiousness, sportsmanship, courtesy, civic virtue is 0.911, 0.824, 0.916, 0.708, and 0.587. Because these values are above 0.5, all the dimensions are valid. Also, the CRC for five dimensions is 0.896. Therefore, these dimensions are reliable.

Table 5. The final result of the loading factor and composite reliability coefficient related to organizational citizenship behavior

Panel A. The loading factor of items of organizational citizenship behavior dimensions			
Dimension	Item	Loading factor	CRC
Altruism	ALT1	0.762	0.766
	ALT2	0.630	
	ALT3	0.770	
Conscientiousness	CONS1	0.814	0.798
	CONS3	0.814	
Sportsmanship	SPORT1	0.743	0.706
	SPORT2	0.552	
	SPORT3	0.698	
Courtesy	COURT2	0.778	0.754
	CORTT3	0.778	
Civic Virtue	CV1	0.851	0.782
	CV2	0.710	
	CV3	0.646	
Panel B. The loading factor of the organizational citizenship behavior dimensions			
Variables	Dimension	Loading factor	CRC
Organizational Citizenship Behavior	Altruism	0.911	0.896
	Conscientiousness	0.824	
	Sportsmanship	0.916	
	Courtesy	0.708	
	Civic virtue	0.587	

Source: Modified output of Warp PLS 7.0

Table 6 presents the final test result of validity and reliability for organizational climate (OC) and employee performance (EP). The accurate OC items are OC1, OC2, OC3, OC5, OC6, and OC7. Meanwhile, all EP items are valid. These two situations happen because the loading factor of each item is higher than 0.5. Furthermore, the OC and EP items also pass the consistency test because the CRC shows 0.884 and 0.896, higher than 0.7 as the mandatory level.

Table 6. The final result of the loading factor and composite reliability coefficient of organizational climate and employee performance

Variable	Item	Loading factor	CRC
Organizational climate	OC1	0.889	0.884
	OC2	0.582	
	OC3	0.795	
	OC5	0.760	
	OC6	0.664	
	OC7	0.772	
Employee performance	EP1	0.759	0.896
	EP2	0.867	
	EP3	0.837	
	EP4	0.840	

Source: Modified output of Warp PLS 7.0

3.3. The model estimation result

Table 7 illustrates the estimation result of the structural equation model based on partial least square.

- OCB has a negative coefficient with the probability of the t-statistic of 0.216, exceeding the significance level (α) of 5%. This condition means that the negative effect is not meaningful. Therefore, the first hypothesis is rejected. In other words, OCB does not influence EP.

- OC has a positive coefficient with the probability of the t-statistic below 0.001. Because this value is lower than α of 5%, the positive effect is meaningful. Therefore, the second hypothesis declaring that the OC affects EP positively is acceptable.

Table 7. The model estimation result: The impact of Organizational Citizenship Behavior and Climate on Employee Performance

Explanatory variable	Path Coefficient	Standard error	t-statistic	Probability
OCB	-0.080	0.083	-0.964	0.216
OC	0.757	0.101	7.495	<0.001

Source: Modified output of Warp PLS 7.

3.4. Discussion

In this study, employee performance is not influenced by OCB. This situation occurs because of tenure [see Mahnaz, Mehdi, Jafar, & Abbolghasem (2013)]. In this research context, the absence of OCB on EP is caused by the employees participating in this survey have a relatively similar proportion based on their short and long working duration. It can be seen from Table 4 that the number of employees with a short working period (under one year until five years) is 44 (46.81%), and a long working period (five until above ten years) is 50 (52.19%). This condition Thus, the absent OCB effect on employee performance confirms the study of Agustiningsih et al. (2016).

Fortunately, the organizational climate has a positive effect on employee performance. According to this study, to make the work atmosphere conducive, the supervisors have to distribute the job responsibility equitably to employees, stimulate the ideas from employees, hear and the suggestions, and tolerate some employees' mistakes, encourage employees' creativity to finish the job. Hence, this positive influence supports the study of Agyemang (2013), Bhat (2014), Bhat & Bashir (2016), Raja et al. (2019), and Obeng et al. (2020).

IV. CONCLUSION

This study aims to test and analyze the impact of organizational citizenship behavior (OCB) and climate (OC) on employee performance. Furthermore, this study surveys the perception of 94 employees working in one of the pharmaceutical companies in Cimahi, West Java, Indonesia. After following the statistical analysis and discussion, this research summarizes that OCB does not influence employee performance. However, OC does with a positive sign.

There are two limitations in this study for the next interested researchers to be overwhelmed. They are the sample size and the sum of determinants of employee performance.

- Associated with the first issue, when the next researchers have the big population size, they can change the margin of error to be small, 5%, or 1%, to get more respondents to be the samples. The less a margin of error, the more representative the sample size will be.
- Associated with the second issue, the next researchers can add the other determinants of employee performance into their study model, for instance, remuneration, social adjustment, organizational support, psychological empowerment, organizational commitment, and work-life quality.

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Social Media Influencer in Advertising: The Role of Attractiveness, Expertise and Trustworthiness

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Abstract
The cosmetic industry has shown rapid growth worldwide and is seen as a profitable business yet highly competitive. A popular grab-attention strategy being adopted worldwide by the brand manufacturers is celebrity endorsement to improve the effectiveness of the advertisement. Despite its popularity, companies increasingly abandoning it in favor of social media influencers due to the popularity of social media and online stores. However, the effectiveness of this new way of communication using an influencer is not well understood. To address this gap, this research investigated the influence of social media influencer credibility (attractiveness, trustworthiness, and expertise) on advertising effectiveness (attitude toward the product, attitude toward the advertisement, and purchase intention to ensure if it is suitable to hire a social media influencer to advertise cosmetic products in Malaysia over a celebrity. The finding can serve as a reference to help cosmetic products marketers to develop effective ads using source credibility to communicate with their customers and stand out from the surrounding media clutter.

Keywords: Cosmetics, Social Media Influencer, Attractiveness, Trustworthiness, Expertise, Ad Effectiveness, Purchase Intention

1. Introduction

Globalizations of the market, online stores, and e-commerce platforms made foreign and local cosmetic products available widely in any market worldwide and hence increase the intensity of competition and new product introduction. With the increasing rivalry, most marketers opt for celebrity advertising which is popular yet a challenging form of communication to promote their brand. Celebrity endorsement has been found to exert a quadruple effect such as enhance communication effectiveness by eliminating noise (Muda, Musa & Putit, 2012), brand switching (Deighton. J, 1994), better recall of the brand name (Petty, Cacioppo & Schumann, 1983) as well as favorably enhance advertising effectiveness in a way towards the ad itself, product and ultimately purchase intention (Chekima & Chekima, 2019, Schouten et al., 2020; Bergkvist and Zhou 2016; Atkin and Block 1983).

However, in the age of social media and online purchasing, utilizing "traditional or conventional" celebrities comprises of actors, athletes, singers, and supermodels seem to be fading because companies increasingly abandoning it in favor of social media influencers (Schouten et al., 2020; Marwick 2015). Through different social media platforms such as Youtube, Instagram, Tik Tok, Facebook, social media influencers are aptly employed to engage, publicize product information as well as communicate the latest promotions and latest information regularly with their online followers through live video, vblog, text, or poster posts, product review, etc.. (Markethub 2016; Liu et al. 2012). Social media influencer gains much of the visibility, popularity, and large follower base by enthusiastically sharing self-generated content of a different product or topics including beauty, health, fashion, investment and food (Khamis, Ang, and Welling, 2017), thus turning them to be perceived or branded by followers as an expert on social media platforms (Lin, Bruning, and Swarna 2018).

Despite the increasing deployment of social media influencers for product and service endorsement, there is a lack or limited knowledge on their marketing value in terms of understanding its credibility effectiveness towards the ad, product, and purchase intention of cosmetic products in Malaysia. Most preceding studies have focused on celebrity endorsement with inconsistent results depending on the context and product and thus make it pertinent to revisit the effectiveness of credibility sources from the perspective of social media influencer where online and social media purchasing is dominating the market and have evolved the behavior of the consumer. Another lack is in the context where previous studies have focused more on the western setting. Therefore this study aims to investigate the impact of social media influencer credibility on advertising effectiveness (attitudes toward the advertisement and product, and purchase intention) in Malaysia concerning cosmetic products. Influencer credibility was operationalized as consisting of three constructs which are attractiveness, expertise, and trustworthiness. The cosmetic industry is considered a highly profitable business in Malaysia which was valued at $764.9 million in 2020 and is expected to increase by 8.1% annually to $1,288.7 million by 2027 (Market Research, 2020). Presently, this industry is heavily dependent on social media communication and thus makes it feasible to validate this model.

2. Underpinning Theory

The Source Credibility Theory posits that the value of a message could be influenced by the endorser's acknowledgment level of appeal, trustworthiness, and expertise (Hovland and Weiss, 1951; McGuire, 1985; Ohanian, 1991). The degree that the source is known as having noteworthy experience or adequate information to not present a one-sided choice is alluded to as validity (Carroll, 2008; O'Mahony and Meenaghan, 1997). Prior discoveries demonstrated that source validity is essential for the accomplishment of endorser support because the degree of influence of a message generally lays on the believability of the source (Wei and Li, 2013). As indicated by Ohanian (1990), the credibility of the source is normally used to stand out to the positive attributes of communicators which would impact the beneficiary's affirmation of the correspondence.

Additionally, because of globalization and a bounty of item decisions, customers presently can undoubtedly switch among brands and items when contrasted with the past and along these lines expanded degrees of rivalry and variety in the makeup business. To demote this from occurring, scholars of product differentiation (Schouten et al, 2020; Hannan et al., 1990) prompted that organizations may confront less rivalry by separating themselves from others through big name or influencer underwriting. Besides, it is powerful to utilize endorsers from the dependable source towards buyers which have a bothersome understanding of the item (Schouten et al, 2019; Singh and Banarjee, 2018; Thomas and Johnson, 2017; Daneshvary and Schwer, 2000). Consequently, the tenable source can neutralize these sentiments and have a positive result which is a greater message acceptance (Byrne et al., 2003).

3. Conceptual framework and research hypotheses

3.1 Attractiveness

McCroskey and McCain (1974) put out that attractiveness is linked with how sources are perceived and related social values. In the context of effective advertising, source attractiveness largely depends on the source's similarity, familiarity, and likeability to the receivers (Ohanian, 1991; McGuire, 1985). The concept of similarity is the supposed resemblance between the receiver (social media followers) and source, while familiarity is measured knowledge of the source based on their exposure; and likeability is liking for the source as a result of the source's physical facial beauty and behavior (McGuire, 1985).

The physical engaging quality of online media influencers is seen to have a high inclination in driving the acknowledgment pace of publicizing and saw more alluring when they have a lot of similarities (Lim et al. 2017). In view of Bardia et al. (2011), source physical appeal is interrelated to an individual's soonest judgment given to the following person, which is driven by the attributes and characteristics of the endorser for instance facial beauty, height, and weight.

Ranjabarian et al., (2010) expressed that to expand the affirmation or awareness towards an ad or product, source endorsement could be utilized as a significant variable. Furthermore, it is established that endorsers "which are considered attractive will be more likely to lead the consumer purchase intention" (Van Der Waldt et al., 2009). Therefore, the physical appeal of the source could be exploited to heighten the advertisements' effectiveness (Schouten et al, 2020; Singh and Banarjee, 2018; Thomas and Johnson, 2017; Chan et al., 2013). Given the pervasiveness of source credibility on consumer evaluation towards the ad and behavior, this study posits that:

H1: social media influencer attractiveness has a positive influence on attitude toward the ad
H2: social media influencer attractiveness has a positive influence on attitude toward the ad brand.
H3: social media influencer attractiveness has a positive influence on purchase intention of cosmetic product.

3.2 Expertise

Expertise has been portrayed by McCracken (1989) as "the apparent capacity of the source to make legitimate affirmations". As such, the endorser is viewed as capable enough to convey legitimate and exact information or conscious of a specific subject (Hovland et al., 1953). An endorser that is more powerful is found to have a more elevated level of skill (Bardia et al., 2011; Aaker and Myers, 1987) and would influence a greater purchase intention (Chan et al., 2013; Erdogan, 1999; Ohanian 1991).

Earlier studies have highlighted that the beneficiary's buying choice and perceived trustworthiness could be affected by source skill in the product (Smith et al., 2006). Similarly, Dean and Biswas (2001) express that source influence in promoting practical and expensive brands, endorser's skill rises as a pertinent factor. Along these lines, it is less powerful to utilize ordinary messages and advertorials moved by the association than to utilize a source with applicable aptitude as an endorser (Charbonneau and Garland, 2005). Also, as indicated by the aftereffects of the examination by Chaovalit (2014), between credibility, there is a significant connection regarding expertise and buying behavior.

Likewise, influencers' expertise or relevance to the product is acknowledged by online buyers as important to endorsement success as well (Djafarova and Rushworth 2017). Schouten et al. (2019) further affirmed that the effect of the product-endorser match on credibility is more noticeable for influencers compared to regular celebrity endorsers because they have identified themselves successfully as representative of a known domain of interest, such as 'gaming vlogger', 'fitness vlogger', 'makeup vlogger' or 'fashion blogger', and share product information on a routine basis with their online followers (Balog et al. 2008). The study in hand evaluates the impact of influencers' ability in bringing and endorsing cosmetics in which they usually are users themselves of such product/brand and understand it well before sharing information with their followers. In comparison to celebrities, in most cases, they are just endorsing the product without prior adoption of the product and more depending on their popularity in a certain field which doesn't reflect product-fit with the product. Thus they convey the information based on input from the marketers only and might be perceived as not knowledgeable of the product. Therefore, a good fit between the influencer and the product could be of higher importance than for celebrities, which results in the following hypothesis:

H4: Social media influencer expertise has a positive influence on attitude toward the ad
H5: Social media influencer expertise has a positive influence on attitude toward the ad brand.
H6: Social media influencer expertise has a positive influence on purchase intention of cosmetic product

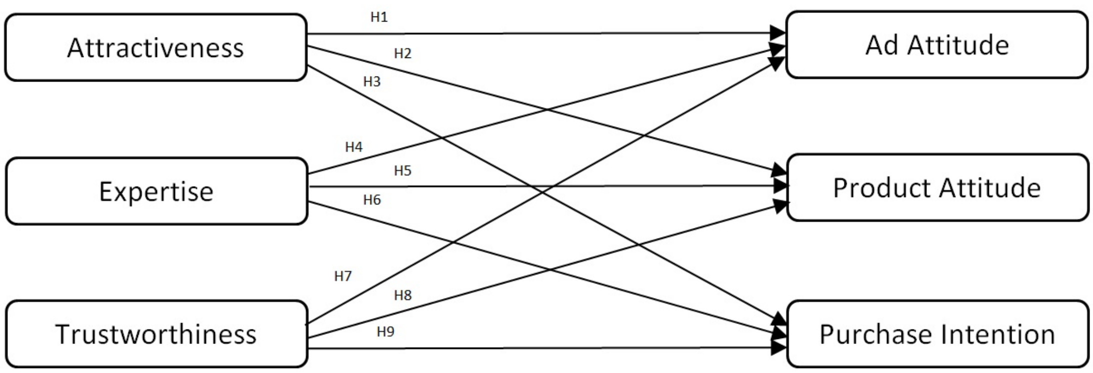
3.3 Trustworthiness

Trustworthiness is characterized as the apparent eagerness of the source of influencer to make lawful statements in the perspective on the consumer or followers and gives truthful and honest information about a product (Ohanian, 1990; McCracken, 1989). As O'Mahony and Meenaghan (1997) point out, trust is the credibility of the source to make the essential highlights of the impacts of changes in customer disposition. Without trust, different properties possessed by the endorser can't be compelling in changing customer perspectives (Miller and Basehart, 1969). Parts of trust are significant in the idea of credibility likewise has been ended up being powerful in encouraging consumers (Moore, Hausknecht, and Thamodaran 1988) and the motivation of disposition (McGinnies and Ward, 1980). This is in accordance with Atkin and Block (1983), which propose that referred sources or endorsers are acknowledged as more reliable than regular ones.

According to Chao et al. (2015) and Wei and Li (2013), source trustworthiness influences consumers' purchase intention and backing the constructive outcome on endorsement viability. Additionally, a decent conviction towards the source can goodly affect the impression of clients' worth and further influence their buying decision (Erdem and Swait, 2004). Evidently, a positive relationship happens among the trustworthiness, fascination, and product-related with the quality of the contention; for example, when solid item related contentions mark the promoting duplicate, the impact of trustworthiness is less observable than it is for feeble item related contentions (Chan et al., 2013; Priester and Petty, 2003). Thusly, influencers who will be chosen must be a person whom purchasers can identify with and are perceived as genuine, fair-minded, and legitimate (Temperley and Tangen, 2006). This is commonly reflected with regards to this examination, whereby, web-based media influencers' adherents see them as an individual like them with whom they share comparable qualities and interests just as increment the transparency of the product depending on the shared content on social media. Based on these, the following hypothesis is deduced:

H7: Social media influencer trustworthiness has a positive influence on attitude toward the ad
H8: Social media influencer trustworthiness has a positive influence on attitude toward the ad brand.
H9: Social media influencer trustworthiness has a positive influence on purchase intention of cosmetic product

Figure1. Conceptual framework



4. Research Methodology

4.1 Measurement items

The first part of the questionnaire was constituted by respondents demographics followed by items of advertising effectiveness including an adopted from Bruner & Hensel (1992), attitude toward the brand adopted from MacKenzie & Lutz (1989), and purchase intention adopted from Yi (1990) while attractiveness, expertise, and trustworthiness were adopted from McCracken (1989). All items were anchored on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

4.2 Data Collection

A convenience sampling was used to elicit responses from consumers who have been exposed to social media influencers' ads. The sample size was decided based on G*Power software to calculate the minimum sample size required based on statistical power (Faul et al. 2009). With 6 latent variables, an effect size of 0.15, and power at 0.80, a minimum of 98 is required. A total of 150 questionnaires were distributed and 126 questionnaires (84%) were returned in which exceeded the minimum required number of questionnaires. This also fulfills the recommendation in structural equation modeling (SEM) to use the "10 times" rule of thumb (Hair et al. 2017). This rule suggests that PLS-SEM only requires a sample size of 10 times the largest number of paths or relationships in the structural model, which would call for a minimum sample size of 90 for this model (that is, 10 x 9 structural paths = 90 individuals). Respondents were sampled from several states in Malaysia and the participation of respondents in the study was voluntarily.

4.3 Common Method Variance

Common method bias was analyzed since the information about the indicator and measured factors were gathered from a sole source (Podsakoff et al. 2003). A few remedies have been recommended to recognize this issue including Harman's one-factor test. A factorial examination without rotation utilizing SPSS completed and the outcome shown that the principal factor represented just 29.74% of the variance, much lower than the majority signifying common bias isn't an issue in this research.

5. Analysis

5.1 Profile of Respondents

Based on the data collected, the majority of the respondents are female which represents 64% while male respondents were 36%. The age of respondents ranges from 18 to 57 years.

5.2 Measurement Model

Structural Equaling Modelling (SEM) software PLS 3.2.8 was employed for the data analysis purpose. PLS-SEM technique was chosen instead of CB-SEM, is because of the predictive oriented objective of this research. (Hair et al. 2017). The measurement model assessment involves the estimate of reliability and validity. The convergent validity is assessed by observing indicators' loading, Average Variance Extracted (AVE), and Composite Reliability (CR) (Hair et al. 2017). The summarized result in Table 1 confirms that all the loadings values were higher than 0.4, the CR's above 0.7, and AVE scores were larger than 0.5 as recommended by Hair et al. (2017). Hence, the convergent validity of the model's deemed acceptable. Discriminant validity was assessed using the Fornell and Larcker (1981) approach and results indicated that the constructs established discriminant validity.

Table 1: Measurement model

Construct	Indicator	Loadings	AVE	Composite Reliabilities
Attractiveness	AT1	.745		
	AT2	.812		
	AT3	.669	.574	.870
	AT4	.787		
	AT5	.771		
Expertise	EP1	.902		
	EP2	.603		
	EP3	.891	.644	.902
	EP4	.857		
	EP5	.747		
Trustworthiness	TR1	.869		
	TR2	.803		
	TR4	.861	.730	.931
	TR5	.898		
	TR6	.840		
Ad Attitude	AA1	.845		
	AA2	.798	.674	.861
	AA3	.820		
Brand Attitude	BA1	.846		
	BA2	.850		
	BA4	.916	.750	.938
	BA6	.856		
	BA7	.862		
Purchase	PI1	.813		
Intention	PI2	.863	.704	.877
	PI3	.840		

5.3 Structural Model

The path-coefficient assessment s (hypothesis testing) is summarized in Table 2. The result indicate that influencers' attractiveness ($\beta = 0.357$, $p < 0.01$), expertise ($\beta = 0.176$, $p < 0.01$) and trustworthiness ($\beta = 0.308$, $p < 0.01$) were positively significant towards Ad attitude. Thus, H1, H4 and H7 were supported. Altogether, these factors explained 51.4% of the variance in explaining cosmetic product Ad attitude. Subsequently, influencers' attractiveness ($\beta = 0.195$, $p < 0.01$), expertise ($\beta = 0.401$, $p < 0.01$) and trustworthiness ($\beta = 0.229$, $p < 0.01$) showed a positive correlation with attitude toward the brand, hence H2, H5 and H7 were supported. These factors accounted 55.8% of the variance in explaining consumer attitude toward brand. Finally the result illustrated that influencers' attractiveness ($\beta = 0.257$, $p < 0.01$), expertise ($\beta = 0.272$, $p < 0.01$) and trustworthiness ($\beta = 0.364$, $p < 0.01$) exhibited a positive relationship toward purchase intention of cosmetic product and explain 67.1% in its variance. Therefore, H3, H6, and H9 were supported and congruent with the hypothesized direction.

Moreover, a blindfolding technique was executed to examine the model's predictive relevance (Q2). According to Hair et al. (2014), values of 0.02, 0.15, and 0.35 signify small, medium, and large predictive relevance of an exogenous toward endogenous construct. The Q2 for ad attitude, brand attitude, and purchase intention was .342, .357, and .412 respectively indicating a large prediction relevance of the model.

Table 2: Path-coefficient Assessment

Hypothesis	Relationship	Std. Beta	t-value	Result
H1	AT → AA	.357	3.507	Supported

H2	AT → AB	.195	2.904	Supported
H3	AT → PI	.257	3.021	Supported
H4	EP → AA	.176	2.635	Supported
H5	EP → AB	.401	3.703	Supported
H6	EP → PI	.272	3.793	Supported
H7	TR → AA	.308	3.115	Supported
H8	TR → AB	.229	3.590	Supported
H9	TR → PI	.364	4.150	Supported

6. Conclusion

This study revealed the effects of source credibility such as source attractiveness, expertise, and trustworthiness influence positively consumer attitudes towards ad and brand subsequently purchase intention of cosmetic products. This finding corroborates with previous studies by Chekima & Chekima (2019), Schouten et al., (2020), Singh and Banarjee (2018), Thomas and Johnson (2017), and Muda et al., (2014). These results validated the source credibility from the perspective of social media influencer and its ability to exert a favorable outcome of consumers toward the ad. This research demonstrated that respondents were more likely to trust the social media influencer as well as feel delighted with their product-fit and attractiveness with whom they perceived as a resemblance to themselves.

The finding of this study could help cosmetic marketers to consider selecting social media influencer who possesses tailored credibility sources to gain a competitive advantage in the midst of high rivalry market. These social media influencers must be able to grab the attention of the target audience with effective communication. Doing so can assist with maximizing the influence of advertising endeavors to create positive social behavior and subsequently increment their sales

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Comparison Between Risk and Return of Financial Conglomerates in Indonesia: Vertical, Horizontal and Mixed (TOPSIS Analysis)

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Abstract
Financial conglomeration in Indonesia is a unique form because Indonesia has three financial conglomeration types that existed. There are vertical, horizontal, and mixed types. In fact, many countries are implementing vertical financial conglomerates because the supervision is easier to carry out than other types. This study tried to compare the performance of vertical, horizontal, and mixed financial conglomerates. Is it true that a vertical financial conglomerate is the best financial conglomerate compared to a horizontal and mixed one with the TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) analysis? This study used return indicators and risk indicators to measure financial conglomerates' performance in the banking industry. The results showed that vertical financial conglomerates were the most superior compared to horizontal and mixed financial conglomerates. It might be attributed that vertical financial conglomerates usually have the same activities and have an explicit direct relationship between the parent company and subsidiary company so as it is more easily to supervising.

Keywords: Financial Conglomerations, Vertical, Horizontal, Mixed

1. Introduction

Financial Conglomerations in Indonesia are still discussing how to regulate and supervise their presence in Indonesia. Basically, financial conglomeration can not only be useful but also have an impact on the occurrence of risks. The benefits of financial conglomeration according to Claessens (2002), namely the achievement of economies of scale and efficiency, increased diversification and risk minimization, and reduced information costs and monitoring. Furthermore, the problems that arise with the existence of financial conglomerates include the possibility of double leveraging calculations (Bressan, 2017), opportunities for regulatory arbitrage (Avraham, Selvaggi and Vickery, 2012), and an increase in intragroup transactions. In addition, there are differences in regulations in the financial sector, such as differences in the principles of prudence that allow systemic risk from one financial services institution to the entire financial conglomerate group (De Nicolo and Kwast, 2002). Therefore, the supervision of financial conglomerates is important especially to avoid systemic risk and arbitration in the regulatory and supervisory by financial services institution and to take appropriate supervisory.

The development of financial conglomerates rapidly in Indonesia has occurred since the supervision of the banking industry was only carried out by the central bank. At that time, Bank Indonesia only supervised the banking industry. As a result, financial institutions can independently set up subsidiaries in other financial services sectors. Since 2014, there have been 50 financial conglomerates in Indonesia that have controlled 70.5% of the total assets of the financial services industry. In addition, financial conglomerates in Indonesia have 3 variations, namely vertical, horizontal, and mixed financial conglomerations. In fact, in its development, many countries have implemented vertical financial conglomerations because the supervision is easier to carry out compared to horizontal and mixed types of financial conglomerations.

Since 2011, the Financial Services Authority (FSA) has been conducted micro banking supervisions and had begun to regulate the existence of financial conglomerates in Indonesia. But recently, the existence of financial conglomerates is still leaving many problems, including the lack of regulations regarding financial conglomerates that have overseas parents, difficulty in monitoring due to the complex financial structure of each conglomerate, and the existence of risk integration that can lead to systemic risk. Because of this, the FSA in 2017 issued a draft FSA regulation concerning the establishment of a financial conglomerate holding company that requires financial conglomerates to have a parent company for holding company. The FSA complements the three previous FSA Regulations concerning Integrated Risk Management, Integrated Governance, and Integrated Minimum Capital Requirements.

Research on financial conglomerates has been conducted. There were researches on the benefits and risks of the existence of financial conglomerates like research on the regulation and supervision of financial conglomerates (Freixas, Lóránth, and Morrison, 2007); (Peleckienė, 2011); (Mälkönen, 2009), controversy about the economic value of financial conglomerates (Schmid and Walter, 2009); (Lelyveld and Knot, 2009); (Gatzert and Schmeiser, 2011); (Elyasiani, Staikouras, and Dontis-charitos, 2014); (Guerry and Wallmeier, 2017); and the interconnection between banks, insurance and financial conglomerates (Hautona and Jean-CyprienHéam, 2016). Based on the research above, it could be concluded the economic benefits of financial conglomerates still being research to test consistency about the benefits or risks of financial conglomerates. Therefore, these studies compare the risk and return of financial conglomerations in Indonesia between three different types (vertical, horizontal, and mixed). Is there a difference in risk and return between the three types of financial conglomeration? If it is different, which type of financial conglomerate is the best.

2. The Definition and Types of Financial Conglomerates in Indonesia

2.1 Definition of Financial Conglomeration

Financial conglomerates are groups of financial institutions and companies that offer a wide range of financial services. The definition of financial conglomerates is also listed in FSA regulation. It's explained that financial conglomeration is the financial services institution group which carries out significant financial services business activities and at least in two sectors like banking, capital market, insurance, financing institutions, and other financial service institutions.

2.2 Types of Financial Conglomerates in Indonesia

The following are the types of financial conglomerates in Indonesia (Subari, 2015),

a. A vertical group occurs when there is a direct relationship between the parent company and subsidiary companies. Both of them are Financial Services Institutions (FSI). In this group, controlling shareholders own companies in the banking and insurance sector, financing, or securities.

b. A horizontal group occurs if there is no direct relationship between FSI and financial conglomerate, but the FSI is owned or controlled by the same party. This means that controlling shareholders have shares in companies in the financial sector.
c. A mixed group occurs when one financial conglomerate has a business group structure as vertical and horizontal groups. Thus, controlling shareholders own financial sector company and owns shares in other financial sectors.

3. Study of Literature

Research on financial conglomerates has been studied. Nicolo, et al. (2004) examined the relationship between consolidated banks and financial conglomerates and their effect on risk. The study found financial conglomerates in developing countries caused an increase in the risk of funding, especially for unstable bank funding sources. Moreover, bigger financial conglomerates have a higher operational risk than smaller financial conglomerates due to managerial factors. Research on bank-insurance special conglomerates was also conducted (Lelyveld and Knot, 2009). The results showed that financial conglomeration affects the decline in firm value due to the diversification strategy (diversification discount) with significant levels that differ between size, conglomerate business model, and risk profile. The results of this study are supported by Schmid and Walter (2009). The researched used sample in America. The study showed that financial conglomeration caused a diversification discount for all of the combinations of financial services except for investment banks. The impact of this diversification discount is consistent for all combinations of financial activities in financial conglomerates except for financial conglomerates that have a combination of business activities with insurance also and or investment or banks.

In contrast to the results of studies conducted by Claessens (2003), the research about the cost and benefits of integrated (vertical) financial conglomerates. The results showed that vertical financial conglomerates provide better service quality than other types. Vertical financial conglomerates also reduce intermediation costs and reduce risks. Gatzert and Schmeiser (2011) stated in their study that there was competition in internal financial conglomerates. The diversification of business units provides benefits to financial conglomerates. Casu et al. (2016) stated that banks with a combination of investment activities have a higher risk than banks with combination insurance activities.

Based on the explanation above, this study aims to compare the financial performance of three types of financial conglomerates in Indonesia using the TOPSIS method. The study begins by collecting data on return and risk indicators from individual financial conglomerates. Next, classify financial conglomerates into three groups types. Finally, data were processed with the TOPSIS method to get the score and do a comparative analysis.

4. Methods

Following the research objectives, this study uses financial conglomerations in the banking industry because most of the financial conglomerates come from the banking industry. The sample in this study was 37 financial conglomerates that have published integrated governance reports. However, due to incomplete data in the Mizuho group, JP Morgan group, and Deutsche Bank Group, these three financial conglomerates were excluded from the research sample. Therefore, there were 34 financial conglomerates used as a sample. The sample was then classified into three groups based on controlling shareholders that consists of 14 vertical financial conglomerates, 13 horizontal financial conglomerates, and 7 mixed financial conglomerates. The period in this study is started from 2009-2018.

4.1 Operational Variables

This study used four return indicators (ROA, ROE, NIM, and MS) and four risk indicators (LDR, NPL, CAR, and OCOI).

4.1.1 Return Indicator

a. ROA (Return on Assets)

This ratio is used to measure the ability to obtain profits from the total assets. The greater ROA, the greater level of profit achieved. This ratio is formulated as follows,

$$\text{ROA} = (\text{Net Income})/(\text{Total Assets}) \quad (1)$$

b. ROE (Return on Equity)

This ratio is used to measure the performance in managing the availability of capital to generate profit after tax. The greater ROE, the greater the level of profit achieved by the bank. This ratio is formulated as follows,

$$\text{ROE} = (\text{Net Income})/\text{Equity} \quad (2)$$

c. NIM (Net Interest Margin)

Net Interest Margin is a ratio that measures the difference between the interest income generated and the amount of interest paid towards the average of total productive assets. NIM can be calculated using a formula

$$\text{NIM} = (\text{Interest Income} - \text{Interest Expense})/(\text{Average Earning Assets}) \quad (3)$$

d. MS (Market Share)

Market Share is a percentage of the total assets from individual financial conglomerates compared with the total assets of the national financial conglomerates. Thus, the market share of financial conglomerates individually can be calculated using the following formula,

$$\text{MS} = (\text{Total Assets })/(\text{Total Assets of Market}) \quad (4)$$

4.1.2 Risk Indicator

a. LDR (Loan to Deposit Ratio)

This ratio is to assess the liquidity of the bank. The higher LDR, the lower liquidity. This ratio is formulated as follows,

$$\text{LDR} = (\text{Total Loans})/(\text{Total Deposits}) \quad (5)$$

b. NPL (Non-Performing Loan)

This ratio shows the ability of bank management to manage non-performing loans. The higher this ratio, the worse quality of the bank's credit. This ratio is formulated as follows,

$$\text{NPL} = (\text{Total Performing Loan})/(\text{Total Loans}) \quad (6)$$

c. CAR (Capital Adequacy Ratio)

CAR is a measure of a bank's performance in supporting assets that contain risk, which is a comparison between capital and risk-weighted assets. The greater the CAR value, the better the bank's capital ability to finance bank assets that contain risks. This ratio is formulated as follows,

$$\text{CAR} = (\text{Tier 1 Capital} + \text{Tier 2 Capital})/(\text{Risk Weighted Assets}) \quad (7)$$

d. OCOI (Operating Costs to Operating Income)

This ratio is also called the efficiency ratio. It measures the ability of bank management to control operating costs against operating income. The higher the ratio, the less efficient. This ratio is formulated as follows,

$$\text{CAR} = (\text{Operating Cost})/(\text{Operating Income}) \quad (8)$$

Furthermore, before being processed using the TOPSIS method, each indicator is given a weighting according to the level of importance. The following is the weighting for each return and risk indicator (Hidayat, 2016),

Table 1. Weighting of Return and Risk Indicators

Indicator	**Variable**	**Code**	**Weight**	**Sign**
Return	Return on Assets (ROA)	X11	12.5%	+
	Return on Equity (ROE)	X12	12.5%	+
	Net Interest Margin (NIM)	X13	12.5%	+
	Market Share (MS)	X14	12.5%	+
Risk	Loan to Deposit Ratio (LDR)	X21	12.5%	-
	Non Performing Loan (NPL)	X22	12.5%	-
	Capital Adequacy Ratio (CAR)	X23	12.5%	+
	Operating Cost to Operating Income (OCOI)	X24	12.5%	-

Based on table 1 above, the total number of return and risk indicators is eight variables, and they assume the importance of the eight variables is the same so that the weighting for each variable is 12.5%.

The positive and the negative signs for each variable are related to the 4th step in the TOPSIS analysis when determining the best ideal value and the worst ideal value. The best ideal value is the highest value of the variables, while the worst ideal is the lowest value of variables. Based on table 1, all signs on return variables are positive. That is, the ideal best for the return variable is the highest value of the return variables. Otherwise, the ideal worst is the lowest value of the return variables.

In contrast to the best ideal of the risk variables are the lowest value of each variable and the worst ideal of the risk variables is the highest value of the LDR, NPL, and OCOI variables. Different from the CAR variable. CAR is a risk variable related to the bank's performance in supporting assets that contain risk. The higher the CAR, the more banks are able to bear the risk of each productive assets. Thus, the ideal best of the CAR variable is the highest value and the ideal worst of the CAR variable is the lowest value.

4.1.3 Technique for Order Preference by Similarity to Ideal Solution (TOPSIS)

TOPSIS is a multicriteria decision-making method. It was first introduced by Hwang and Masud (1979). TOPSIS has used the principle that the selected alternative must have the closest distance from the positive ideal solution and the furthest distance from the negative ideal solution as the optimal solutions.

The positive ideal solution is defined as the sum of all the best scores that can be achieved for each attribute. Whether the negative ideal solution is defined as the sum of all the worst scores could be achieved for each attribute. Some of the advantages of TOPSIS are it is easy to be processed computerized, used rational logic, allows the best alternatives to be described in simple mathematics as a concept, and used the weight of importance.

The following is steps of the TOPSIS method based on Wangchen Bhutia (2012),

1. Make a decision matrix A by evaluating the value of each alternative against each criterion.

$$A = \begin{bmatrix} a_{11} & a_{12} & \mathrm{L} & a_{1n} \\ a_{21} & a_{22} & \mathrm{L} & a_{2n} \\ \mathrm{M} & \mathrm{M} & \mathrm{M} & \mathrm{M} \\ a_{i1} & a_{i2} & a_{ij} & a_{in} \\ \mathrm{M} & \mathrm{M} & \mathrm{M} & \mathrm{M} \\ a_{m1} & a_{m2} & \mathrm{L} & a_{mn} \end{bmatrix}$$

2. Normalization of decision matrix A becomes matrix r with the following equation,

$$r_{ij} = \frac{X_{ij}}{\sqrt{\sum_{i=1}^{m} X_{ij}^2}}$$

   with
   i = 1, 2, … , m
   j = 1, 2, … , n
   r_ij = normalized decision matrix
   X_ij = weights criteria j to alternative value i
   i = alternative value i
   j = criteria to j

3. Create a weighted normalization decision matrix. The weighted matrix value is symbolized by Y_{ij} and calculated by the equation as follows,

$$Y_{ij} = w_j r_{ij}$$

   with i = 1, 2, …, n j = 1, 2, …, n and wj is the weight of j criterion

4. Determine both the positive ideal solution matrix and the negative ideal solution matrix based on the normalized weight rating. A positive ideal solution (A+) and a negative ideal solution (A-) calculated in the following equation,

$$A^+ = y_1^+, y_2^+, \dots, y_n^+$$
$$A^- = y_1^-, y_2^-, \dots, y_n^-$$

with
$y_j^+ = \max_i y_{ij}$
$y_j^- = \min_i y_{ij}$
y_j^+ is the largest value of the y matrix for each j criterion.
y_j^- is the smallest value of the y matrix for each j criterion.

5. Determine the distance between the value of each alternative with a matrix of positive ideal solutions and negative ideal solutions. The distance between the alternative value to i with the ideal positive solution and the ideal solution negative can be formulated by the equation as follows,

$$D_i^+ = \sqrt{\sum_{j=1}^{n} \left(y_j^+ - y_{ij}\right)^2}$$
$$D_i^- = \sqrt{\sum_{j=1}^{n} \left(y_j^- - y_{ij}\right)^2}$$

D_i^+ is the distance between alternative value i with the positive ideal solution
D_i^- is the distance between alternative value i with the negative ideal solution

6. Determine the preference value for each alternative. The highest preference value (Vi) indicates that alternative i is feasible to be chosen as the best solution. Vi value is calculated by the equation as follows,

$$V_i = \frac{D_i^-}{D_i^- + D_i^+}$$

5. Result

5.1 Return and Risk Indicators

The following are an explanation of return and risk indicators in the vertical, horizontal, and mixed financial conglomerates.

5.1.1 Return

The return indicators in this study used ROA, ROE, NIM, and MS described in the following:

a. ROA (Return on Assets)

The following is a summary of the average ROA for the three categories of financial conglomerates,

Table 2. Average Return Indicator: ROA

Year	Types of Financial Conglomerates		
	Vertical	**Horizontal**	**Mixed**
2010	3.70%	1.52%	2.44%
2011	2.79%	1.39%	2.04%
2012	2.78%	1.62%	1.82%
2013	2.62%	1.54%	1.98%
2014	2.54%	1.12%	1.55%
2015	1.64%	0.69%	1.30%
2016	1.70%	0.29%	1.60%
2017	2.02%	0.12%	1.43%
2018	1.91%	0.24%	1.50%

Based on table 2 above, vertical financial conglomerates have the highest average ROA value, the range between 1.64% and 3.70%, followed by mixed-type financial conglomerates and horizontal financial conglomerates. The average ROA from the vertical financial conglomerate had the best ROA go on consistently from 2009-2018. This showed that the vertical type of financial conglomeration is the best type of financial conglomeration. Because the vertical group of financial conglomeration is usually operating in the same activities, it is easier to supervise the activities than the others.

b. ROE (Return on Equity)

his ratio is used to measure the performance in managing the available capital to generate profit. The table below is a summary of the average ROE for the three categories of financial conglomerates,

Table 3. Average Return Indicator: ROE

Year	**Types of Financial Conglomerates**		
	Vertical	**Horizontal**	**Mixed**
2010	20.48%	10.94%	16.13%
2011	19.93%	8.53%	14.19%
2012	18.97%	12.37%	15.49%
2013	18.33%	8.61%	16.31%
2014	14.77%	5.98%	10.40%
2015	10.21%	3.70%	9.52%
2016	9.20%	-0.49%	10.18%
2017	10.30%	-1.96%	7.34%
2018	9.95%	-0.97%	6.93%

Based on table 3, it showed the vertical group of financial conglomerates also had the highest average ROE, followed by mixed and horizontal types. Similar to ROA, it could be concluded that vertical group financial conglomerates are easier to supervise the company's operational activities since it usually operating in the same activities.

c. NIM (Net Interest Margin)

The following is a summary of the average NIM for the three categories of financial conglomerates.

Table 4. Average Return Indicator: NIM

Year	**Types of Financial Conglomerates**		
	Vertical	**Horizontal**	**Mixed**
2010	5.44%	5.04%	6.05%
2011	5.77%	4.85%	5.39%
2012	5.14%	4.99%	4.93%
2013	4.83%	4.92%	5.02%
2014	4.85%	4.46%	4.72%
2015	5.03%	4.49%	4.94%
2016	5.19%	4.74%	5.68%
2017	4.81%	4.51%	5.26%
2018	4.62%	4.68%	5.01%

Based on table 4, it can be seen that the vertical and mixed group financial conglomerates have the highest average NIM value in certain research periods. For example, the highest NIM was achieved by the vertical financial conglomeration group in 2011, 2012, 2014, and 2015. Meanwhile, for the years 2010, 2013, 2016, 2017, and 2018 the highest NIM value was achieved by the mixed ones. The horizontal group financial conglomeration had the lowest NIM consistently. This showed that the vertical and mixed types of financial conglomeration have relatively good NIM. This might be attributed to the mixed group of the financial conglomerate has vertical characteristics that could have better performance than the vertical group in managing NIM.

d. MS (Market Share*)*

The following is a summary table of average MS for the three categories of financial conglomerates,

Table 5. Average Return Indicator: MS

Year	**Types of Financial Conglomerates**		
	Vertical	**Horizontal**	**Mixed**
2010	5.51%	0.68%	1.99%
2011	5.45%	0.73%	2.03%
2012	5.32%	0.72%	2.07%
2013	5.37%	0.79%	2.09%
2014	5.44%	0.79%	1.95%
2015	5.43%	0.78%	1.98%
2016	5.52%	0.69%	1.96%
2017	5.52%	0.63%	2.07%
2018	5.58%	0.61%	2.00%

According to table 5, the vertical financial conglomeration had the highest value of MS averages. One of the vertical financial conglomerations had a 20.05% market share in 2018. The highest average MS of vertical financial conglomerates is consistent annually. The vertical financial conglomerates had more control assets of the national financial conglomerates than the horizontal and mixed groups.

5.1.2 Risk

The risk indicators in this study used LDR, NPL, CAR, and OCOI described in the following:

a. LDR (Loan to Deposit Ratio)

The table below is a summary of the average LDR for the three categories of financial conglomerates.

Table 6. Average Risk Indicator: LDR

Year	**Types of Financial Conglomerates**		
	Vertical	**Horizontal**	**Mixed**
2010	85.75%	88.16%	78.41%
2011	93.54%	96.11%	80.77%
2012	92.70%	100.51%	82.36%
2013	96.24%	104.66%	89.93%
2014	100.50%	107.17%	90.77%
2015	107.70%	102.34%	92.44%
2016	100.83%	96.86%	92.78%
2017	97.35%	96.32%	93.56%
2018	102.69%	100.64%	99.07%

Based on table 6, the mixed financial conglomeration had the smallest average value of LDR consistently. While the average value of LDR for the vertical and the horizontal groups even reached above 100%. Thus, mixed financial conglomerates had the best liquidity compared to the vertical and horizontal groups. Actually, liquidity problems could be minimized by inhibited credit growth or by increased interest on deposits.

b. NPL (Non-Performing Loan)

This ratio shows the ability to manage non-performing loans. The following is a summary of the average gross NPL for the three categories of financial conglomerates,

Table 7. Average Risk Indicator: NPL

Year	**Types of Financial Conglomerates**		
	Vertical	**Horizontal**	**Mixed**
2010	2.83%	1.91%	2.22%
2011	2.26%	1.60%	1.63%
2012	1.62%	1.71%	1.47%
2013	1.49%	1.46%	1.74%
2014	2.14%	2.13%	2.85%
2015	2.85%	2.28%	3.07%
2016	2.99%	3.29%	3.33%
2017	2.98%	3.97%	2.85%
2018	2.57%	3.77%	2.58%

According to table 7, all NPL values are adequate and higher than the applicable provisions below 5%. Vertical, horizontal, and mixed group financial conglomerates had the lowest NPLs in a certain year. For example, the vertical financial conglomerate had the lowest average NPL in 2013. Furthermore, the horizontal group of financial conglomerates had the lowest NPL in 2013. Finally, the mixed group financial conglomerate had the lowest NPL in 2012. The lowest average value of Gross NPL was achieved by the horizontal financial conglomerates in 2013. There is a tendency for the lowest average NPL value to be achieved by the horizontal financial conglomerates. Although horizontal financial conglomerates have varied activities, however, these financial conglomerates able to manage credit.

c. CAR (Capital Adequacy Ratio)

CAR is a ratio that shows how much risk-bearing bank assets are financed from their own capital in addition to obtaining funds from sources outside the bank. The following is a summary of the average CAR for the three categories of financial conglomerates.

Table 8. Average Risk Indicator: CAR

Year	**Types of Financial Conglomerates**		
	Vertical	**Horizontal**	**Mixed**
2010	22.47%	21.52%	18.44%
2011	19.40%	19.29%	16.15%
2012	20.52%	19.55%	15.90%
2013	19.08%	21.37%	15.69%
2014	18.53%	22.16%	16.88%
2015	19.38%	23.88%	17.93%
2016	20.57%	26.23%	19.57%
2017	19.96%	27.65%	19.31%
2018	19.46%	25.15%	20.06%

Based on table 8, all of the CAR values are adequate and higher than the applicable provisions, which were above 13%. Vertical and horizontal financial conglomerates have the highest average CAR value in a certain year, followed by mixed financial conglomerates that consistently have the lowest average CAR. The vertical group of financial conglomerates had the highest CAR in 2010, 2011, and 2012. Furthermore, the horizontal group of financial conglomerates had the highest CAR in 2013-2018. Thus, the horizontal group of financial conglomerates had a greater ability to face the possible risk of loss than the vertical and mixed financial conglomerates.

d. OCOI (Operating Costs to Operating Income)

OCOI measures the ability of bank management to control operating costs against operating income. The following is a summary of the average OCOI for the three categories of financial conglomeration,

Table 9. Average Return Indicator: OCOI

Year	Types of Financial Conglomerates		
	Vertical	**Horizontal**	**Mixed**
2010	77.34%	87.63%	78.21%
2011	75.59%	89.44%	81.57%
2012	73.60%	84.36%	80.57%
2013	76.08%	86.14%	81.39%
2014	77.38%	88.92%	86.36%
2015	83.88%	94.37%	87.99%
2016	84.77%	98,.01%	86.15%
2017	80.79%	101.35%	84.92%
2018	84.10%	98.94%	84.89%

In table 9, the vertical financial conglomeration had the lowest average value of OCOI followed by the mixed and horizontal financial conglomeration. The results of this study support research (Claessens, 2003) regarding the cost and benefits of integrated (vertical) financial conglomerations. It showed that vertical financial conglomeration was able to reduce intermediation costs.

5.2 Average TOPSIS Score

Furthermore, to determine which group of financial conglomerates had the best performance among vertical, horizontal, and mixed groups, the average TOPSIS score for each financial conglomerate group will be calculated every year as follows:

Table 10. Average TOPSIS Score

Year	Types of Financial Conglomerates		
	Vertical	**Horizontal**	**Mixed**
2010	33.93%	26.52%	28.80%
2011	53.44%	43.45%	47.38%
2012	48.10%	39.28%	41.79%
2013	48.55%	40.86%	43.18%
2014	46.38%	37.64%	39.03%
2015	48.42%	41.41%	44.75%
2016	56.63%	47.65%	54.56%
2017	62.92%	52.33%	59.43%
2018	59.53%	47.48%	55.37%

Based on table 10, the highest average TOPSIS score was the vertical financial conglomeration consistent from 2010-2018. Furthermore, the mixed group financial conglomerates consistently have lower average TOPSIS scores than the vertical group financial conglomerates but higher than the horizontal group financial conglomerates. This means that the horizontal group of financial conglomerates has the lowest average TOPSIS score than the vertical and mixed groups.

Thus, the vertical group of financial conglomerates has the most superior performance than the horizontal and mixed groups. The top 10 best performers nearly were achieved by the vertical group financial conglomerates. This is probably since the vertical financial conglomerates are usually operates in the same activities. This means that the parent company could exercise better supervision and control. Therefore it is easy for vertical financial conglomeration to coordinate regarding the implementation of policies for better performance.

6. Discussion

This study compared the performance of vertical, horizontal, and mixed financial conglomerates. Is it true that the vertical financial conglomeration is the best financial conglomerate that it is applied by financial conglomerates in many countries? This study uses return and risk indicators to describe the performance of financial conglomerates. The return indicator was measured by ROA, ROE, NIM, and MS, then the risk indicator was measured by LDR, Gross NPL, CAR, and OCOI.

Based on the return indicator, vertical financial conglomerates have superior ROA, ROE, and MS compared to horizontal and mixed financial conglomerates. Superior ROA, ROE, and MS indicate the achievement of high profitability and a dominant market share which had an impact on superior financial performance. Although NIM from vertical financial conglomerates has reached the highest NIM in certain four years only, low NIM actually shows the level of efficiency because NIM is the spread between interest income and interest expense. In fact, the government wants the NIM to be achieved by the banking industry not to be high because a high NIM means that credit interest is also high which has an unfavorable impact on business actors.

Furthermore, from the risk indicator, vertical financial conglomerates tend to be high in LDR, which indicates that vertical financial conglomerates in the banking industry are mostly lending. The LDR can be reduced by inhibiting credit growth or by increasing the interest on deposits to raise savings funds. Unlike the LDR, the Gross NPL of a vertical financial conglomerate was not the lowest but still within a very safe limit. From the CAR value, the vertical group financial conglomerates only had the highest CAR only 3 years, but the overall CAR was still higher than the applicable regulations. Thus, the vertical group financial conglomerates have a better ability to face the possible risk of loss. Finally, concerning the OCOI value, the vertical group financial conglomerates have the lowest OCOI consistently during the study period. Thus the vertical group financial conglomerates were the most cost-efficient compared to the horizontal and mixed group financial conglomerates.

Based on both indicators, the vertical financial conglomerates are superior to the horizontal and mixed financial conglomerates. The superior performance of the financial conglomerates in the vertical group is also supported by almost 10 of the best performance achieved by the vertical financial conglomerates group. Furthermore, based on the TOPSIS average score, the vertical financial conglomerate had the highest average score during the study period.

Overall, this study supports Claessens (2003) stated that vertical financial conglomerates provide better service quality, reduce intermediation costs, and reduce the risks faced. This study also support Gatzert and Schmeiser (2011) stated that there is competition in internal financial conglomerates, diversification of similar business units provides benefits to financial conglomerates.

From the point of view of supervision and control, vertical group financial conglomerates usually engaged in the same activities will find it easier to supervise the activities of the company. Moreover, there is a clear direct relationship between the parent company and subsidiary companies. Both of them are Financial Services

Institutions. In other words, Controlling Shareholders own companies in the banking or insurance sector, financing, and securities.

7. Conclusion

The purpose of this study compares the performance of vertical, horizontal, and mixed financial conglomerates from the banking industry. Based on indicators of return and risk, the vertical financial conglomerates were superior to others. The superior performance from the vertical financial conglomerates was supported that nearly the 10th best performance achieved by the vertical group of financial conglomerates and the average TOPSIS score consistently had the highest than others. This study also supports Claessens (2003) that stated that vertical financial conglomerations provide better service quality, reduce intermediation costs, and reduce the risks. This research also supports Gatzert and Schmeiser (2011) were a state that there is competition in the internal financial conglomeration, diversification of similar business units provides benefits to financial conglomerates.

The suggestion from this research is to support the government's efforts in the draft FSA regulation about financial conglomerates required to set up Holding Companies. This is a form of clearer supervision by required financial conglomeration to report Integrated Governance Implementation Annual Report between the parent financial conglomerate and its subsidiaries. FSA is expected to provide more attention and supervision to horizontal and mixed financial conglomerates because there is no direct relationship between Financial Services Institutions in the same Financial Conglomerates. Because the activities carried out are various cause it is more difficult to carry out supervision.

Future research can compare the financial conglomerates' performance in different combinations of business activities because there are differences in the diversification discount (Schmid and Walter, 2009).

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Remuneration Policy to Improve Lecturer Performances

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Abstract
This study aims to determine the effect of Remuneration on Motivation and Job Satisfaction, and Lecturer Performances of the Universitas Pembangunan Nasional Veteran Jawa Timur. This type of research is an explanatory study with a quantitative approach. The variables in this study include Remuneration, Motivation, Job Satisfaction, and Performance. The sample in this study were 114 respondents with simple random sampling technique and data collection through questionnaires. Analysis of the data in this study using SEM-PLS (Structural Equation Modeling - Partial Least Square) using the SmartPLS Version 3 software. The results of the analysis show 1) a positive significant effect between remuneration variables on work motivation and job satisfaction 2) Positive significant influence between job satisfaction on motivation, and performance, 3) The positive significant influence between motivation on performance, 4) While the effect of remuneration on performance is not significant. To improve lecturer performance, management of the institution requires effective remuneration and optimization of workloads while increasing motivation and job satisfaction in order to achieve good performance.

Keywords: Remuneration, Motivation, Job Satisfaction, Lecturer Performance

1. INTRODUCTION

Remuneration is a reward or remuneration given to workers or employees as a result of the achievements they have given in order to achieve organizational goals. The policy of providing remuneration as an award to employees for professional performance in realizing clean and authoritative governance (Suparlan et al, 2016). Remuneration for employees is based on their position or grading and the resulting performance. The remuneration policy is expected to be one of the tools in measuring professional, fair and proportional performance in higher education. This is based on Perpres number 32 of 2016 concerning employee performance allowances within the Ministry of Research, Technology and Higher Education. This remuneration policy is carried out in an effort to optimize performance. Remuneration policy is stated by Ivancevich (2008) that performance will not be achieved optimally if the remuneration given is not proportional, fair and proper. The use of remuneration as a reward for teaching staff in the university environment is not only a form of independence but also as the responsibility of the leadership in increasing job satisfaction and work motivation of educators. Because basically with this reward, it can meet the expectations of the teaching staff at work.

Rivai, et al (2014) explained that someone can act (in an effort to achieve goals and fulfill responsibilities) tends to be because of the expectation of the results that will be obtained. The explanation of the statement explains that the basic nature of employees working (doing something) is none other than because they have the hope of getting a reward, in this case in the form of remuneration. So that when the needs and expectations of employees are met, job satisfaction is achieved which will also affect work motivation. Motivation is a series of attitudes and values that can encourage individuals to achieve specific things in accordance with individual goals.

The encouragement of someone to do business so that an increase in employee performance is achieved should not only come from external factors, but can also come from internal employees. Internal employee encouragement is a relationship related to the individual attitudes and behavior of the employee concerned. Internal motivation is one of the theories of motivation (Herzberg Theory) which states that people will be motivated from within themselves because of the factors of achievement, recognition, work itself, responsibility, progress and growth. Meanwhile, salary, promotion, co-worker relations, supervision, physical condition of work are Hiegien (nurturer) factors that cause people to be satisfied or dissatisfied but not a motivating factor (Robbins and Judge, 2015). According to the cognitive evolution theory that extrinsic rewards will reduce intrinsic attraction to the task. The existence of a Remuneration Policy is expected to increase intrinsic motivation because in the remuneration system the rewards obtained are the results of employee work, the more work they get, the more remuneration they get.

Research of Pratama and Arik's (2017) states that the remuneration system will increase job satisfaction and lecturer motivation when the remuneration system is implemented according to expectations, it will increase job satisfaction. In addition to the motivational factors that affect lecturer performance, job satisfaction, especially regarding the relationship between the academic community, is a factor that can improve lecturer performance (Slamet, 2019). Yeni Widyastuti (2010), Nur'aeni (2011) in their research which states that high achievement motivation will tend to be high performance.

UPN "Veteran" East Java has only applied remuneration for past year, namely in the year 2019/2020, from the data obtained by researchers, it is found that many educators (lecturers) had excess performance, so that with the remuneration system at UPN Veteran East Java, it is hoped that a sense of fairness, transparency and proportionality for employees in achieving their performance in accordance with the value of remuneration they receive. Because the application of the remuneration system at UPN Veteran East Java is relatively new, of course there are still obstacles that arise, for example from calculating points and indexes per activity, and mismatches in the amount of remuneration received with expectations. which has an impact on their job satisfaction and performance. In this study, it does not examine the remuneration system but rather the remuneration policy which has an impact on the intrinsic motivation of lecturers and job satisfaction and its impact on lecturer performance.

2. RESEARCH METHODOLOGY

This research is an explanatory study with a quantitative approach. In this study, there are four research variables, where each variable has an operational definition as follows:

Remuneration is defined as remuneration for work received by lecturers with the following indicators: a. Remuneration given is appropriate, b. Remuneration received is reasonable, c. Remuneration given is fair, c. Remuneration given is in balance with work results d. The remuneration given is sufficient.

Work motivation is defined as motivation that arises from within a person (intrinsic factor) with Indicator achievements, acknowledgment, the work itself, responsibility, progress, and growth.

Job Satisfaction is defined as a positive attitude towards a job with indicators :

a. Obtain concentration at work (psychological factors)
b. Establish good working relationships with superiors and colleagues (social factors)
c. Can set time (physical factor)

d. Financial factors

Performance (Y) is defined as the results of work in accordance with the responsibilities with indicators

a. Able to increase work targets and finish on time
b. Able to minimize work errors
c. Able to create innovation in completing work
d. Able to create creativity in completing work

Measurement of research indicator items uses a Likert scale with a score of 1 to 5.

Population and Sampling

The population in this study were all lecturers of UPN "Veteran Jatim" both as officials and ordinary lecturers. The sample used was 114 respondents randomly.

Data collection and analysis methods

Data collection by distributing questionnaires online. Meanwhile, the data analysis method uses Structural Equation Modeling (SEM) with the Partial Least Square (PLS) approach.

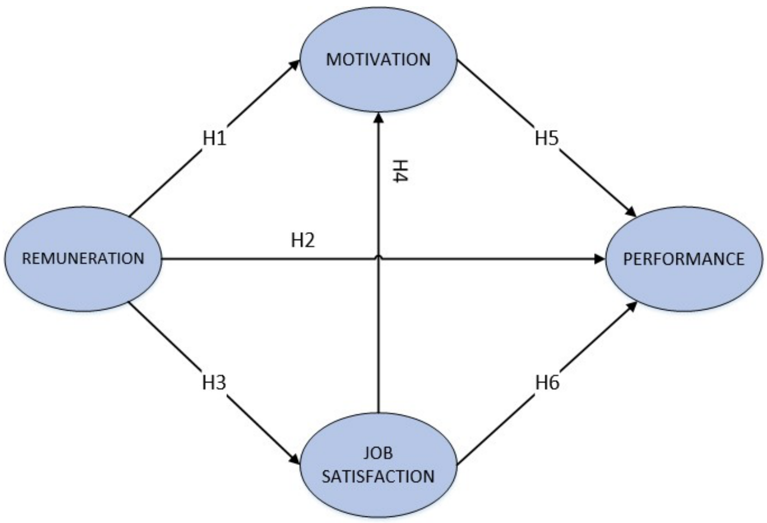

Figure. 1. Conceptual Framework

3. RESULTS AND DISCUSSION

Respondent Characteristics

The characteristics of the respondents in the study were spread across all faculties at UPN Veteran East Java and the descriptions of the respondents are presented in table 1 below:

Table 1: Respondent Characteristics

No	Sample Size (N=114 Respondent)	Description	Total	Percentage
1	Faculty	Faculty of Architecture and Design	11	9.6
		Fakulty of Ekonomic dan Business	32	28.1
		Faculty of Law	15	13.2
		Faculty of Computer Science	2	1.8
		Faculty of Social and Political Sciences	11	9.6
		Faculty of Agriculture	12	10.5
		Faculty of Technical	31	27.2
2	Level	III/a	2	1.8
		III/b	29	25.4
		III/c	20	17.5
		III/d	3	2.6
		IV/a	42	36.8
		IV/b	16	14.0
		IV/c	2	1.8
3	Rank	Asisten Ahli	24	21.1
		Lektor	54	47.4
		Lektor Kepala	27	23.7
		Professor	1	.9
		Lecturers do not have rank	8	7.0
4	Gender	Male	46	40.4
		Woman	68	59.6
5	Education	S2	78	68.4
		S3	36	31.6
6	Lecturer Status	Ordinary lecturer	74	64.9
		Lecturer with Job Assignments	30	26.3
		Lecturer with Study Permit	7	6.1
		Lecturer with Study Assignments	3	2.6
7	Marital Status	Married	95	83.3
		Not Married	19	16.7

Source: Primary data processed

Testing Data

Goodness-of-fit, both the outer model and inner model, must go through a goodness-of- fit test before the authors ensure that the goodness-of-fit research model is fulfilled. This test was carried out using SmartPLS 3.2.8 and the results are summarized and presented in Table 2 below:

Table 2: Summary of Goodness of Fit Test Results

Goodness of Fit		Parameter	Terms	Interpretation
Outer Model	Convergent Validity	Factor Loading	Factor loading for all indicators must be greater than 0.7	Fulfilled Convergent Validity
		AVE	AVE for all variable must be greater than 0,5	
		Cronbach Alpha	Cronbach Alpha all variables must be greater than 0.7	
	Discriminant Validity	Cross Loading	The factor loading of all indicators in one latent variable must be greater than the other latent variable.	Fulfilled Discriminant Validity
	Reliability	Composite Reliability	The composite reliability of all variables must greater than 0.7	All variables are considered reliable
Inner Model	Evaluation R^2	R^2 Value	$R^2 > 0.25$	The model is considered Fit

Source: Analysis using SmartPLS V.3.2.8 (Summarized)

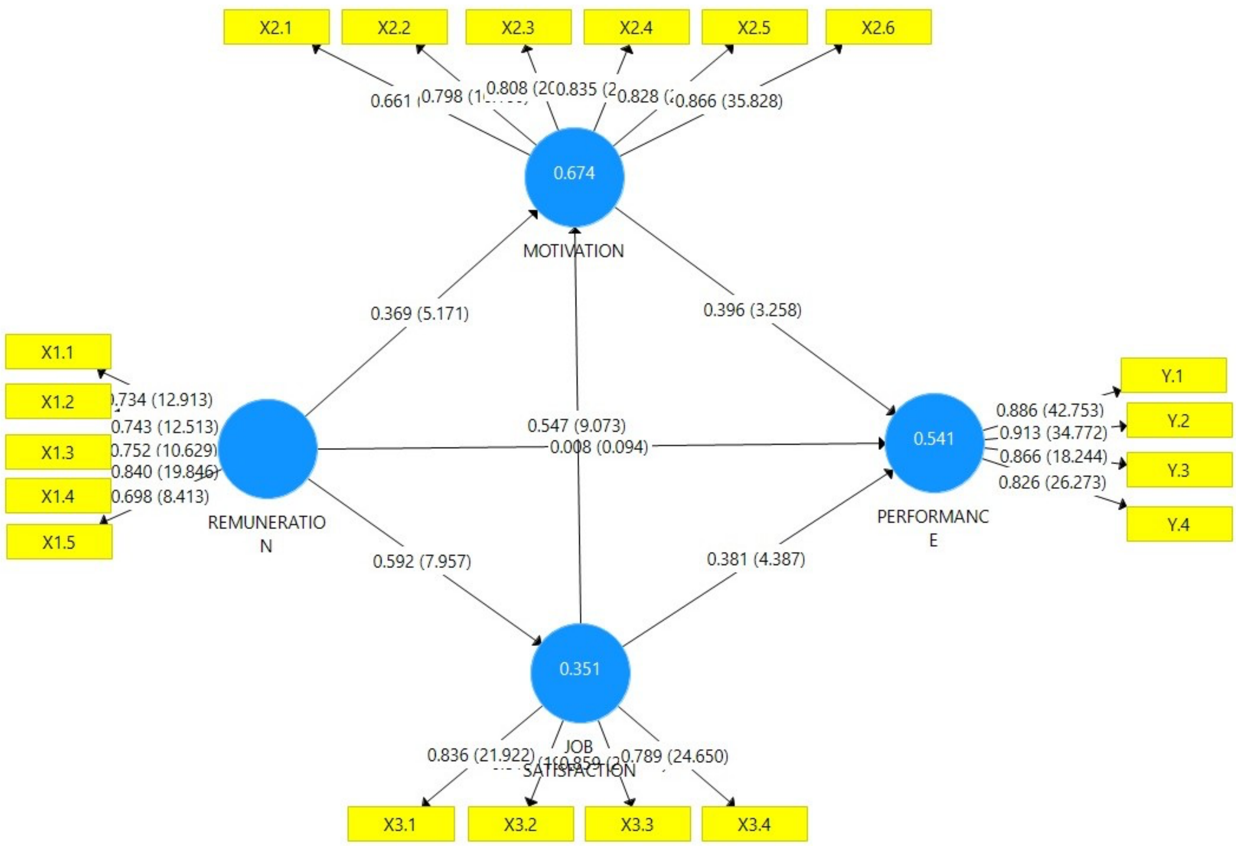

Figure 2: Summary of Calculation of Hypothesis Models

Source: Summary of analysis using SmartPLS at the 0.05 significance level

Table 2 shows that all the goodness-of-fit criteria have been met, both for the outer model and for the inner model. Based on the results of testing in this study, the authors consider the research model to be fit and can be perceived for hypothesis testing (Figure 3), while the results of hypothesis testing can be seen in the following table:

Table 3: Hypothesis Testing (Path Coefficients, T-Statistics, T-Values)

Hypothesis	Path Coefficients	T Statistics	P Values	Decision
H1 Remuneration -> Motivation	0,369	5,300	0,000	Accepted
H2 Remunerarion -> Performance	0,008	0,096	0,926	Rejected
H3 Remuneration -> Job Satisfaction	0,592	8,316	0,000	Accepted
H4 Job Satisfaction -> Motivation	0,547	9,138	0,000	Accepted
H5 Motivation -> Performance	0,396	3,294	0,001	Accepted
H6 Job Satisfaction -> Performance	0,381	4,589	0,000	Accepted

Source: Analysis using SmartPLS with a significance level of 0.05 (processed)

From table 3 above it can be concluded that the hypothesis which states:

- H-1. Remuneration has a positive effect on motivation, it can be accepted with the path coefficients of 0.369, and the P-Values value of 0.000 <0.05, it is significant (positive).
- H-2 Remuneration has a positive effect on unacceptable performance with path coefficients of 0.008, and the P-Values value of 0.926> 0.05, then it is non-significant (positive).
- H-3 Remuneration has a positive effect on job satisfaction. It can be accepted with the path coefficients of 0.592, and the P-Values value of 0.000 <0.05, it is significant (positive).
- H-4 Job satisfaction has a positive effect on motivation can be accepted with the path coefficients of 0.547, and the P-Values value of 0.000 <0.05, it is significant (positive).
- H-5 Motivation has a positive effect on lecturer performance can be accepted with the path coefficients of 0.396, and the P-Values value of 0.001 <0.05, it is significant (positive).
- H-6 Job satisfaction has a positive effect on lecturer performance can be accepted with the path coefficients of 0.381, and the P-Values value of 0.000 <0.05, it is significant (positive).

Discussions

Effect of Remuneration toward Intrinsic Motivation

Based on the results of data analysis, it shows that remuneration has a positive and significant effect on institutional motivation, this is indicated by the path coefficient value of 0.369 with a p value (significance) of 0.000 <0.05, meaning that the test contribution of the two variables found a value of 36.9%. . Referring to the results of these tests, one of the factors for the lecturers' intrinsic motivation can be increased by providing remuneration in line with the responsibility of the institution in providing predetermined rewards. This study is in line with the research of Hameed et al. (2014) and Rizal et al (2014), Nugroho et al (2016) which state that remuneration has a significant effect on motivation.

Effect of Remuneration toward Performance

The results of the path analysis showed that the remuneration had no significant effect on performance, it was indicated by the path coefficient value of 0.008 with a p-value of 0.926> 0.05, meaning that the results showed the actual conditions that occurred. In practice, the remuneration system occupies a position as a reward which is expected to trigger performance as remuneration can affect the intrinsic motivation of lecturers. However, the test results show not significant. This explains that although the remuneration given is balanced, appropriate, reasonable, fair, and relative to the lecturers' perceptions but does not affect the lecturer's performance, it can be explained based on field conditions when the lecturer is able to create creativity, it is more motivated to have a desire to grow, namely develop himself, not because of remuneration. And based on open questionnaires, especially for lecturers who do not hold positions, the majority of them do not understand the amount of rupiah for each point they produce. The research is in line with research by Nugroho et al (2016), which states that remuneration has a significant effect on motivation but has no effect on employee performance. Research by Calvin (2017) states that remuneration has no significant relationship with performance.

The Effect of Remuneration toward Lecturer Job Satisfaction

The results of the path analysis show that remuneration has a significant effect on job satisfaction, it is shown by the path coefficient value of 0.592 with a value of 0.00 <0.05. If it is related to the overall remuneration question items, it shows that the test of these two variables has a value of 59.2%, meaning that the higher the remuneration given, the lecturer satisfaction will increase. Based on the biggest loading factor, it shows that when the remuneration obtained is balanced with the work results, the job satisfaction will increase. The results of this study are in accordance with research by Pratama et al (2017) which states that job satisfaction is obtained when expectations are met, namely the rewards they receive in accordance with expectations.

The Effect of Job Satisfaction toward Work Motivation

The result of the path analysis shows that lecturer job satisfaction has a significant positive effect on motivation, it is indicated by a path coefficient value of 0.547 with p-value of 0.000, meaning that the test of the two variables has a contribution value of 54.7%, the higher the level of lecturer job satisfaction, the higher the motivation. based on the biggest loading factor is that the lecturer can set the time to encourage lecturers to grow, it can be explained that when the job satisfaction of the lecturer increases, namely in the case that the lecturer can manage the time, the lecturer will be motivated to develop himself, for example following training, seminars and others, which in the end with self-developer will support its performance. Therefore, the importance of giving assignments to teach lecturers is limited in the number of credits they can provide so that all activities related to the Tri Dharma of Higher Education can be carried out proportionally so that other activities for self-development can also be carried out optimally.

This is in accordance with research. Job satisfaction has a positive effect on performance in line with research by Theresia Linda Eert al (2018) which states that job satisfaction by lecturers can increase motivation and performance, especially the comfort of the work environment, and appreciation for employees.

Effect of Motivation to Performance

The results of the analysis state that motivation has a significant effect on lecturer performance. This is indicated by the path coefficient value of 0.39. When it is related to the overall items in the motivation variable (achievement, recognition, work itself, responsibility, progress, growth) it affects performance by 39%, while the question item which has the largest loading factor, namely growth, can be explained. When the lecturer has a strong desire to develop himself, he will try his best to achieve his goals. This shows that motivation that comes from oneself (intrinsic factor) is high so it can affect the achievement of performance. Conversely, if lecturers have low intrinsic motivation, they tend to be lazy and the performance obtained is only to fulfill the obligations of the Tri Dharma Perguruan Tinggi (fulfilling the BKD). It is important for the leadership of the institution to further motivate the lecturers, for example by being given the opportunity to take part in activities for the self-development of the lecturers themselves, because without financial support and facilities from the institution it can reduce their motivation. Remuneration is a form of encouragement for lecturers to grow with remuneration that is considered equal to their work, so that lecturers will be more motivated to collect points as the basis for providing remuneration. This research is in line with the research of Slamet (2019), Nur'aini (2011) which states that lecturers' work motivation will affect their performance. Rimadias, et al (2016) stated that when lecturers at the Indonesian Banking School performance will increase when the intrinsic factor that can be felt is achieved.

Effect of Job Satisfaction to Performance

The effect of job satisfaction on lecturer performance is 38.1%, this explains that job satisfaction is related to lecturer performance. Job satisfaction can occur in the lecturers of UPN East Java, which is related to psychology, social, physical and financial. Of the several question items the greatest influence of job satisfaction on performance is physical items, namely when they can manage the time they will have time to develop themselves both in terms of innovation and creativity. This research is in line with research conducted by Muhammad Arifin (2017) with lecturer respondents at FKIP UMSU and research by Titik Rosnani (2012) with lecturers at Tanjung Pura University. It is not something new that the Job Satisfaction variable is one of the important variables in the achievement of lecturer performance, this is evident from several similar research results, it is proven that lecturer performance is influenced by their job satisfaction at work.

4. CONCLUSIONS AND RECOMMENDATIONS

The remuneration policy that has been implemented by UPN "Veteran" is able to intrinsically increase the work motivation of lecturers, but the remuneration policy provided has no impact on lecturer performance. But the increased intrinsic motivation of lecturers can improve lecturer performance. The increase in intrinsic motivation of lecturers is influenced by the existence of job satisfaction, and in the end, the increase in job satisfaction also has an impact on lecturer performance.

From the research, several suggestions can be made, for the remuneration policy to be more socialized, especially by socializing the points associated with the tariff per point. In this case, the study program should not burden the lecturers too much in teaching with excessive credits so that their time is only filled with dense teaching hours so that it is difficult for lecturers to manage their time to grow, namely develop themselves, namely there is time and opportunity for training, seminars / workshops and so on. -other. Institutions at both the study program, faculty and university levels have provided opportunities for lecturers to develop, so this must be improved to develop lecturer competence related to training and encourage involvement with activities outside the institution in order to develop lecturer networks and knowledge

Research with exogenous variables of remuneration at UPN Veteran East Java has limitations where the respondents used are heterogeneous, namely all lecturers as ordinary lecturers and lecturers with additional assignments, so for further research it is expected to use research objects that are more focused on ordinary lecturers. Even though the conceptual model as a whole the variables used have a fairly good modeling contribution of 89.76%, there are still opportunities to continue research using other variables such as organizational commitment and lecturer loyalty for the development and advancement of higher education institutions.

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Analysis of Changes in the Unemployment Rate as a Result of the Human Development Index in Indonesia (Case Study 2010-2019)

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Abstract
Unemployment occurs because of an imbalance in the labor market. The labor demand curve shows the number of workers employed by firms and has a negative slope at a certain wage level, while the labor supply curve shows the amount of labor that households will supply and has a positive slope to wages. The research objective was to determine the effect of the Human Development Index (HDI) on the unemployment rate in Indonesia in 2010-2019. The method used in this research is time-series data analysis method with quantitative methods. In this study, the results show that the relationship between the Human Development Index (HDI) and the unemployment rate is 0.960, which means that it has a very strong relationship. The influence of the contribution of the Human Development Index (HDI) variable in the unemployment rate is 82.1%. The Human Development Index (HDI) has a significant and negative effect at the 5% level on the unemployment rate. This is evidenced by a significance value.

Keywords: Human Development Index (HDI), Unemployment Rate

A. PRELIMINARY

A country will never be free from various problems, which are certainly related to its citizens, including countries that have a high population such as Indonesia. The economic problem that is often faced in Indonesia is unemployment. The unemployment problem is indicated by the open unemployment rate from year to year. Economic development is a structural change effort that aims to increase productivity and create job opportunities as well as a multidimensional process that involves a variety of fundamental changes to social structures, attitudes of society and national institutions (Todaro, 2003).

Unemployment is a serious problem faced by developing countries such as Indonesia. Unemployment occurs as a result of the high rate of change in the workforce that is not matched by employment and absorption, which tends to be a small percentage. This is due to the low growth rate of job creation to accommodate workers who are ready to work.

One indicator that can be used to measure unemployment is the Open Unemployment Rate (TPT). The value of TPT is the size of the working-age population who is included in unemployment. According to the Indonesian Central Statistics, Agency (BPS) (2020), open unemployment consists of those who do not have a job, are looking for work, are preparing a business and those who are not looking for work. The amount of unemployment in Indonesia in 2010-2019 can be seen in Table 1 below:

Table 1: Unemployment Rate in Indonesia, 2010 – 2019

Year	Unemployment Rate
2010	7.14
2011	7.48
2012	6.13
2013	6.17
2014	5.94
2015	6.18
2016	5.61
2017	5.50
2018	5.34
2019	5.28

Sources : Central Bureau of Statistics

Based on table 1 shows that the unemployment rate in Indonesia fluctuates every year. The highest unemployment rate in Indonesia during 2010-2019 occurred in 2011 at 7.48%, then decreased to 6.13% in 2012, but in 2015 it increased to 6.18%. After that, it has decreased until 2019.

Factors that can affect the unemployment rate include the human development index (HDI), inflation, economic growth rate, investment, district / city minimum wages. However, in this study, researchers only examined the human development index (HDI) variable. The quality of human resources can be measured by the amount of the Human Development Index (HDI). The Human Development Index (HDI) can be interpreted as a number that measures the achievement of human development based on a number of basic components of quality of life that can affect a person's level of productivity (Saputra, 2011). According to the Indonesian Central Statistics Agency (2020), explaining that the human development index is built through a three-dimensional approach. These dimensions include long life and healthy life, knowledge, and a decent standard of living.

According to the Indonesian Central Statistics Agency (2020), measuring the health dimension uses life expectancy, while measuring the dimension of knowledge uses the indicator of the old-school expectancy rate. As for measuring the dimension of decent living, an indicator of the purchasing power of the community for a number of basic needs is used as seen from the average amount of per-capita expenditure as an income approach that represents development achievements to be able to live properly.

According to Napitupulu (2007), the human development index contains three important dimensions in development, namely those related to the aspects of fulfilling the needs of a long and healthy life, obtaining knowledge and being able to meet decent living standards. The better the health level of the workforce, the higher the knowledge and the obtaining of a decent life, the better and quality the work results will be, on the other hand, the worse the condition of the workforce, the results of the work will be worse or of no quality. This shows that three important dimensions in human development are indicators to assess the quality of human resources who are ready to work so as to reduce the high level of unemployment in an area. The development of the Human Development Index (HDI) in Indonesia in 2010-2019 can be seen in Table 2 below.

Table 2: Human Development Index (HDI) in Indonesia 2010-2019

YEAR	HDI
2010	66.53
2011	67.09
2012	67.70
2013	68.31
2014	68.90
2015	69.55
2016	70.18
2017	70.81
2018	71.39
2019	71.92

Sources: Central Bureau of Statistics

Based on table 2, it shows that the Human Development Index (HDI) in Indonesia in 2010-2019 continues to increase. This shows that the quality of human development in Indonesia is quite good.

According to the results of research conducted by Burhanudin (2015) regarding the relationship between the human development index and the unemployment rate, it is concluded that the human development index has a significant and negative effect on the unemployment rate. This explains that the higher the human development index number in a region, it will cause the unemployment rate to decrease and vice versa, if the human development index is low, it will have an impact on the high level of unemployment in that region.

According to Todaro (2003), HDI is a development goal in itself which can shape a country's ability to absorb modern technology to open job opportunities, reduce unemployment and create sustainable growth and development. This shows that human development as measured by the value of the HDI will have an impact on the low unemployment rate in a region.

The hypothesis built from this study is that it is suspected that there is an effect of the development index of the unemployment rate in Indonesia in 2010 - 2019. The purpose of this study is to determine the effect of the effect of the human development index of the unemployment rate in Indonesia in 2010 - 2019.

B. LITERATURE REVIEW

1. Unemployment Rate

Unemployment is a problem that occurs a lot in a region, especially in developing countries. According to Sukirno (2008) unemployment is a condition in which someone belonging to the labor force wants to get a job but has not yet obtained it. According to Simanjuntak (2003), unemployment, is a person aged in the labor force who does not work at all or works less than two days during the week before the census and tries to get a job. Meanwhile, according to the Indonesian Central Statistics, Agency (2020) unemployment consists of those who do not have a job, are looking for work, are preparing a business and those who are not looking for work because they feel it is impossible to get a job and those who already have a job but have not started working.

Unemployment occurs because of an imbalance in the labor market. The labor demand curve shows the number of workers employed by firms and has a negative slope at a certain wage level, while the labor supply curve shows the amount of labor that households will supply and has a positive slope to wages.

Market equilibrium will be achieved if a situation occurs where the amount of labor demanded is the same as the number of workers offered at a certain wage level. This shows that if the number of workers offered exceeds the number of workers asked, it will result in unemployment. Figure 1 below illustrates the balance that occurs in the labor market.

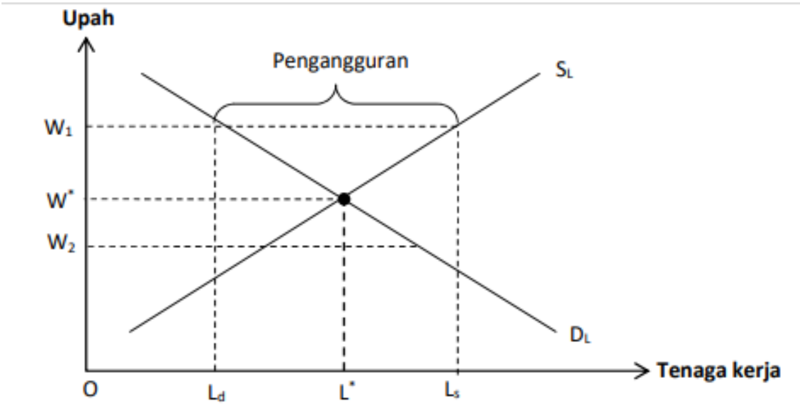

Figure 1 Equilibrium Curve in the Labor Market
Sources : Borjas, George J, 2008

Figure 1 shows that the labor market equilibrium is at point W * L. If the wage is above the equilibrium level (W1), the quantity of labor supply will exceed the amount demanded. If the wage is below the equilibrium level (W2), the demand for labor is greater than the supply of labor. This imbalance is called unemployment.

The new growth theory can enhance human capital development and development to increase human productivity. It is hoped that investment in education will be able to improve the quality of human resources, which is shown by an increase in a person's knowledge and skills so that it will boost work productivity. A decrease per unit of goods will reduce the price per unit of goods. If the price of goods decreases, the demand for goods will increase, which will encourage entrepreneurs to increase the demand for labor, so that the absorption of more workers can reduce the unemployment rate (Todaro, 2003).

According to Nanang (2004), labor, productivity can determine labor demand conditions. With low productivity, it will make companies terminate employment (PHK) with workers so that it will increase the unemployment rate in an area. According to Abbas (2010), the competencies needed in the world of work provided by education are basically related to five things, namely: motive or driving, speed of reaction, personal self-image, someone's information obtained in certain fields and the ability to carry out tasks physically and mentally. A qualified and more capable workforce will be more appreciated when compared to those who are less able. The level of education, which is one of the indicators of HDI, affects the unemployment rate because if the workforce has low education, it will be difficult to get a job so that it will have an impact on increasing the unemployment rate.

According to Keynes's Theory, it explains that the emergence of unemployment is caused by low aggregate demand. This demand is all demand for goods and services that occur in an economy. When the supply of labor has increased, the wages will decrease and the decrease in wages will result in losses not profitable because the decrease in wages illustrates the purchasing power of society for an item. Public purchasing power, which is one of the indicators in the low HDI, will result in companies reducing their production and unable to absorb excess labor so that the demand and supply of labor are almost never balanced and unemployment often occurs (Sukirno, 2008).

According to Keynes, the relationship between aggregate demand and labor absorption can be explained in Figure 2 below :

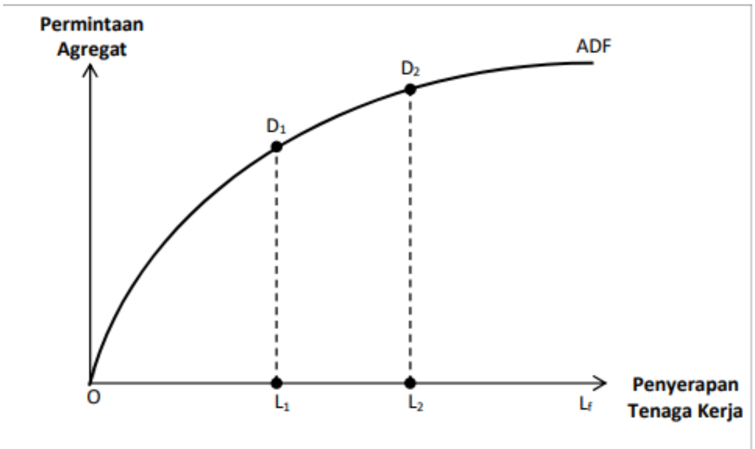

Figure 2 Aggregate Demand Function and Labor Absorption
Sources : Keynes, John Maynard 1924

Based on Figure 2, it can be seen that the total aggregate demand is at D1L1 and the absorption of labor is OL1, then the demand increases to D2 L2 by absorbing labor into OL2. OLf is a full level job. Initially, ADF increased along with the absorption of labor caused by public demand and finally producer sales revenue increased. This increase triggers producers to increase output so that additional labor is needed, which results in a decrease in the unemployment rate.

2. Human Development Index (HDI)

The concept of human development focuses on human resources in line with economic growth. The development of human resources physically and mentally implies increasing the basic capacity of the population which will then provide opportunities to participate in the sustainable development process. The Human Development Index (HDI) is an indicator to assess the success of human development in an area (BPS Indonesia, 2020).

The Human Development Index (HDI) is a comparative measure of life expectancy, education and living standards for all countries around the world. IPM explains how residents can access development outcomes in terms of income, health, education, and so on. HDI is used to classify whether a country is a developed country, a developing country or an underdeveloped country and to provide the results of the influence of economic policy on the quality of life. An area is expected to have a good HDI value and have a quality of life for the people-people, or it can also be said that if the HDI value is high, then supposed poverty is low. The quality of human resources (HR) can be a factor in the occurrence of poor people. The quality of human resources can be seen from the quality of life index / human development index (Napitupulu, 2007). With HDI data, the government can make better and more targeted development decisions and policies.

The theory of the formation of the Human Development Index (HDI) can be measured in three dimensions, including: Long and healthy age is indicated by life expectancy at birth, which is formulated as Life Expectancy Rate. Then in the dimension of science which is measured from the level of literacy, and the average length of schooling can be formulated into the Education Index. Finally, the dimensions of a decent standard of living are shown by real expenditures per capita (Hasan, 2016).

According to the United Nation Development Program (UNDP Indonesia), the indicators chosen to measure the dimensions of the Human Development Index (HDI) are:

a. Longevity,Incomplete sentence measured by variable life expectancy at birth or life expectancy of birth and infant mortality rate per thousand populations.
b. Educational Achievement is measured using two indicators, namely the literacy of the population aged 15 years and over (adult literacy rate) and the average years of schooling for residents of 25 and over (the mean years of schooling).

c. Access to resource, can be measured at the macro level through real GDP per capita with purchasing power parity terminology in US dollars and can be complemented by labor force level.

According to the Indonesian Central Statistics Agency (BPS Indonesia, 2020), the methodological calculation of the Human Development Index (HDI) value since 2011 has changed. There are several indicators that have changed, namely :

a. The literacy rate in the old method was replaced with the expected rate for the old school
b. Gross Domestic Product (GDP) per capita was replaced by Gross National Product (GNI) per capita.

Some of the reasons for changing the methodology for calculating the Human Development Index (HDI) include :

a. Several indicators are not appropriate to be used in calculating the HDI, namely the literacy rate indicator is not relevant in measuring education as a whole because it cannot describe the quality of education. In addition, because the literacy rate in most regions is high, it is impossible to differentiate the level of education between regions properly and the GDP per capita indicator cannot describe the income of the people in an area.
b. The use of the arithmetic average formula in calculating the HDI illustrates that low performance in one dimension can be masked by high performance from another dimension.

Several advantages of calculating the value of the Human Development Index (HDI) using the new method, namely:

a. Using indicators that are more precise and can differentiate well (discriminatory), namely :
   1. Including the average length of schooling and the expected number of years of schooling, a more relevant picture of education and the changes that have occurred can be obtained.
   2. PNB replaces GDP because it describes the income of the people in a region.
b. Using geometric averages in compiling the HDI can mean that the achievements of one dimension cannot be covered by the achievements in other dimensions. This means that in order to realize good human development, these three dimensions must receive equal attention because they are equally important.

According to the Indonesian Central Statistics Agency (2020), the human development index is built through a three-dimensional approach. These dimensions include a long and healthy life, knowledge and a decent standard of living. In measuring the health dimension life expectancy is used, then for the knowledge dimension. The indicator of the old-school expectancy rate is used.

The general formula used to calculate the Human Development Index (Saputra, 2011) is as follows :

$$\mathbf{IPM} = \frac{1}{3}(\boldsymbol{Indeks\ X_1 + Indeks\ X_2 + Indeks\ X_3})$$

Information :
X_1 = Health Index
X_2 = Education index
X_3 = Public purchasing power index

According to the United Nations (PBB) in Saputra (2011), assigning human development performance ratings on a scale of 0.0-100 with the following categories :

1. HDI more than 80,0 : High
2. HDI between 66,0-79,9 : Upper intermediate
3. HDI between 50,0-65,9 : Lower intermediate
4. HDI less than 50,0 : Low

3. Relationship between Human Development Index and Unemployment Rate

The new growth theory explains that increasing human development through human capital, which is reflected in the level of education and health, can increase productivity so that the demand for labor will increase and decrease in the unemployment rate. According to the Keynesian Theory that through an increase in people's purchasing power, which indicates an increase in aggregate demand can affect employment opportunities. If the aggregate demand is low, the company will reduce the amount of productions and cannot absorb excess labor so that the demand and supply of labor are almost never balanced and unemployment often occurs. According to Okun's Law, it states that productivity is caused by an increased human development index and will certainly encourage economic growth. The increase in economic growth is expected to increase employment opportunities and increase demand for labor so that many people can be absorbed in the labor market which in turn can reduce the unemployment rate.

Based on several previous unemployment theories, it is concluded that the Human Development Index and unemployment have a negative relationship through three indicators, namely education, health and people's purchasing power for goods and services that cause a shift in labor demand. If the HDI value in a region is high, it will result in a decrease in the unemployment rate and vice versa when the HDI value is low it can increase the unemployment rate in that region. This situation can be seen in Figure 3 below :

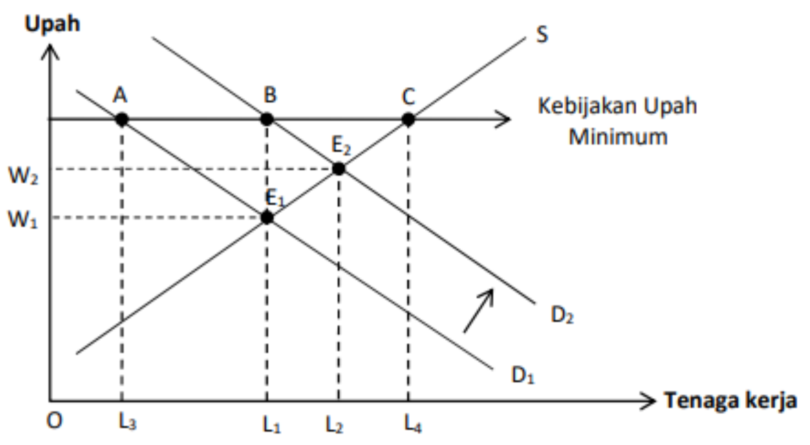

Figure 3 Shifting the Labor Demand Curve
Sources : Borjas, George J, 2008

Figure 3 shows that the labor demand curve is D1, and the labor supply curve is S1 with the point E1 as the equilibrium point with a wage of W1 and the number of workers of L1. After an increase in labor demand as a result of the increase in HDI, the labor demand curve shifts to the right from D1 to D2 with the equilibrium point to E2.

C. Hypothesis

Hypotheses are temporary answers to research formulations, therefore the formulation of research problems is usually arranged in the form of question sentences. The hypothesis is a proportion that will be tested for its validity or is a temporary answer to the researcher's statement. t is said temporarily, because the answers given are only based on relevant theories, not based on empirical facts obtained through data collection. So, the hypothesis can also be stated as a theoretical answer to the formulation of the research problem, not an empirical answer. The hypothesis of this study can be formulated as follows :

H_1 : The human development index has a significant effect on the unemployment rate

D. RESEARCH PURPOSES

The purpose of this study is to determine the effect of the effect of the human development index of the unemployment rate in Indonesia in 2010 - 2019.

E. RESEARCH METHODS

This type of research used in this research is explanatory research. This method is an analytical tool to explain the causal relationship between variables by testing the hypothesis. The format of explanation is to describe a generalization of the relationship between one variable and another, therefore this study uses hypothesis testing with inferential statistics. This is in accordance with the opinion of Bungin (2013, p. 51).

The variables used in this study are the unemployment rate (dependent variable) and the human development index as the independent variable. This study uses secondary data, namely data obtained indirectly, which is the object of research. Secondary data is obtained in the form of annual reports that are registered and published in the Central Bureau of Statistics.

This research takes a study of the country of Indonesia, whose reports have been registered with the Central Bureau of Statistics for the last ten years, starting from 2010-2019. Secondary data were obtained from the official website publication of the Central Statistics Agency (BPS), namely bps.go.id.

Data collection techniques used are documentation techniques, this documentation technique where researchers collect quantitative data obtained through non-participant observation or obtained indirectly, namely by collecting, recording and reviewing secondary data in the form of reports that are registered and published in the Agency. Statistics Center (BPS) for the period 2010-2019.

Data collection begins with the previous research stage by conducting literature studies by studying books and journals related to the subject of this research. At this stage what is needed is the availability of data, how to obtain data, and an overview of obtaining data. The next stage, the researcher collected all the data needed to answer the problems in the study, and expanded the literature to support the quantitative data obtained.

The data analysis method used in this study used regression analysis. To process the secondary data obtained, the researcher used the Statistical Package for Social Science (SPSS) for Windows version 18.0 application assistance program.

The data analysis technique used in this research is inferential statistics and regression analysis. The research method according to the level of exploration in this study is associative research. Associative research is research that aims to determine the relationship between two or more variables. According to the type of data and analysis using quantitative data types (Sugiyono, 2010, p. 4-13).

1. Statistical Analysis Model

a. Inferential Statistical Analysis
   This research is a quantitative analysis study using inferential statistics, as tools and techniques used to analyze data for explanatory purposes. This means that the statistical model is only used for generalization purposes. In other words, this study aims to test the research hypothesis (Bungin, 2013, p. 208).
b. Multiple Linear Regression Analysis
   According to Riduwan and Engkos A. Kuncoro (2007, p. 4), regression is a process of systematically estimating what is most likely to happen in the future based on past and present information so that errors can be minimized. Regression is also defined as an attempt to predict changes in the future. So, regression suggests curiosity about what will happen in the future to contribute to determining the best decision.

2. Hypothesis Testing

Hypothesis testing is intended to determine whether there is a significant influence between the independent variables and the dependent variable. In testing this hypothesis, the researcher uses a significant test, by establishing the null hypothesis (Ho) and the alternative hypothesis (Ha). The null hypothesis (Ho) is a hypothesis which states that there is no significant influence between the independent variable and the dependent variable, while the alternative hypothesis (Ha) is a hypothesis which states that there is a significant influence between the independent variable and the dependent variable. This test is performed using the t test.

a. Significance test for Individual Parameters (t test)

The t statistical test is also called the individual significance test. This test shows how far the influence of the independent variable on the dependent variable. In the end, a conclusion will be drawn that Ho is rejected or Ha is accepted from the hypothesis that has been formulated.

If Ho is accepted, then this means that the effect of the independent variable partially on the dependent variable is considered insignificant and vice versa, if Ho is rejected, this means that the independent variable has a significant effect on the dependent variable.

3. Analysis of the coefficient of determination (R^2)

The coefficient of determination (R^2) used to measure the ability of the model to explain variations in the independent variable.The coefficient of determination ranges from zero to one. This means that if $R^2 = 0$ indicates there is no influence of the independent variable (independent variable) on the dependent variable (dependent variable) and vice versa if R^2 it is close to zero, the smaller the effect of the independent variable (independent variable) on the dependent variable (dependent variable).

F. RESULTS AND DISCUSSION

1. Data Description

This study discusses the effect of the Human Development Index on the unemployment rate in Indonesia in 2010-2019. The HDI data and the unemployment rate are as follows :

Table 3: HDI data and unemployment rates for 2010-2019

Year	HDI	Unemployment Rates
2010	66.53	7.14
2011	67.09	7.48
2012	67.70	6.13
2013	68.31	6.17
2014	68.90	5.94
2015	69.55	6.18
2016	70.18	5.61
2017	70.81	5.50
2018	71.39	5.34
2019	71.92	5.28

2. Research Results

The calculation of this study uses the help of the Statistical Package for the Social Science (SPSS) program for Windows version 18.0. The results of this study can be seen as follows:

a. Correlation

Correlation Coefficient Analysis is used to determine the relationship between two variables whose other variables are considered influential as controlled or as a control variable, the correlation value (r) ranges from 1 to -1, the value getting closer to 1 or -1 means the relationship between the two variables is getting stronger, vice versa. approaching 0 means that the relationship between the two variables is getting weaker. Positive values indicate a unidirectional relationship (variable X increases, variable Y increases) and negative values indicate an inverse relationship (variable X increases, variable Y decreases).

The relationship between the human development index variable and the unemployment rate will be shown by the model summary table as below :

Table 4: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.906[a]	.821	.798	.33027

a. Predictors: (Constant), IPM

Sumber : SPSS Output Results

Based on the table 4 above, it can be concluded that the value of the correlation coefficient (r) of the human development index with an unemployment rate of 0.906. The value of r = 0.906 is in the range 0.80 to 1.00 means that the correlation between the human development index and the unemployment rate is very strong.

b. Coefficient of Determination

The strength of the influence of the independent variable (human development index) on the dependent variable (unemployment rate) can be seen from the value of the determinant coefficient (R^2), which is in the formula between zero and one.

Table 4 shows the coefficient of determination (R^2) = 0.821 or 82.1% which means that 82.1% is the contribution of the independent variable (human development index) to the dependent variable (unemployment rate). While the rest or 100% - 82.1% = 7.9% is the influence of other variables that were not studied.

c. Linear Regression

The Human Development Index (HDI) has a significant and negative effect at the 5% level on the unemployment rate. This is evidenced by a significance value.

Table 5: *Coefficients*

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	31.111	4.137		7.520	.000
	IPM	-.362	.060	-.906	-6.053	.000

a. Dependent Variable: Unemployment Rate

The regression equation Y = 31,111 - 0.362 X can be interpreted that the value of the human development index coefficient (HDI) for variable X is -0.362 and is negative. This indicates that HDI has a relationship in the opposite direction to the unemployment rate. This implies that for each increase in the human development index (HDI) one unit, the variable Beta (Y) unemployment rate will decrease by 0.362 assuming that the other independent variables of the regression model are fixed.

This is in accordance to the theory described by (Todaro, 2003) that increasing human productivity can be through the development of human capital (human capital). Through investment in education, it is hoped that it will be able to improve the quality of Human Resources (HR) which is shown by increasing a person's knowledge and skills so that it will boost work productivity. Increased productivity can affect job opportunities, namely by productivity, there will be a decrease in the cost per unit of goods. A decrease in the cost of production per unit of goods will reduce the price per unit of goods. If the price of goods falls, the demand for goods will increase, which will encourage entrepreneurs to increase the demand for labor. If the price of goods falls, the demand for goods will increase, which will encourage entrepreneurs to increase the demand for labor so that the absorption of more workers can reduce the high level of unemployment.

d. Interpretation and Discussion of Hypothesis Testing

The hypothesis put forward states that the human development index has a negative and significant effect on the unemployment rate, namely from the research results obtained a significance value which can be seen in table 5 of 0.000 which indicates that the value is less than 0.05. For a regression coefficient of -0.362 with a negative value, it means that each human development index of 1% will reduce the unemployment rate by 0.362%. Thus the hypothesis which states that the human development index has a significant effect on the unemployment rate is accepted.

Conclusion

This study attempts to examine how the human development index (HDI) affects the unemployment rate in 2010-2019. Based on the results of the research and analysis discussed, it can be concluded that the Human Development Index (HDI) variable has a negative and significant effect on the unemployment rate in Indonesia. This shows that the greater the value of the Human Development Index (HDI), the smaller the unemployment rate.

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Does Risk-Taking Behaviour Matter for Bank Efficiency?

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Abstract
In pursuit of financial intermediation between borrowers and savers banks are exposed to various risks which affect efficiency. Using annual panel data for the period 2010 to 2019, this paper investigates the influence of risk-taking behaviour on bank efficiency in a developing economy. Data envelopment analysis technique was used to obtain the profit efficiency scores of each bank and Tobit regression to estimate the impact of various components of bank risks on profit efficiency. Estimation results established that credit and liquidity risks, significantly influence bank efficiency. Therefore, banks should maintain quality assets and a stable liquidity position as they significantly impact on efficiency.

Keywords: Bank Efficiency, Credit Risk, Liquidity Risk, Capital Risk, DEA

JEL: C23, D57, G21

1. Introduction

Banks are considered important drivers of economic growth due to their financial intermediation role between savers and borrowers. Efficient banks are resilient to shocks hence easing financial constraints to firms and promotes growth during a financial crisis (Diallo, 2018). Banks tend to engage in more risk-taking in their pursuit higher profitability. But the level of risk that bank managers are willing to tolerate, depends on regulation, competition and corporate governance (Agoraki et al., 2011; Anginer et al., 2013). That notwithstanding excessive risk-taking such as that witnessed during the global financial crisis of 2007-09 leads to the fragility of the financial system (Rajan, 2006). Central banks may respond by imposing higher liquidity and capital requirements and countercyclical provisions for loan losses (BIS, 2011). Failure to account for risk-taking behaviour in efficiency studies may lead to biased estimations (Malikov et al., 2014; Hughes and Mester, 2013). Surprisingly, empirical studies that have investigated inter-temporal relationships between bank risk and efficiency are scant.

A vast literature has incorporated risk measures into frontier efficiency approach using stochastic frontier analysis. However, these studies consider only nonperforming loans and omit other important risks faced by banks such as liquidity, capital or credit risk. Odunga, et.al (2013) examined factors that influence banks operating efficiency in Kenya but nevertheless omitted capital and liquidity risk. Pessarossi and Weill (2015) for instance finds capital risk to impact negatively on the cost efficiency of Chinese banks while Radic, et al. (2012) finds liquidity and capital risk to influence profit efficiency of investment banks. Banks that exhibit higher proportions of non-performing loans are not cost-efficient (Tabak et al., 2011; Podpiera and Weill, 2008). There is evidence that stringency of capital regulation is associated with higher bank efficiency, (Berger and Bouwman, 2013; Barth et al., 2013) where highly capitalized banks are more cost-efficient (Fiordelisi et al., 2011; Lepetit et al., 2008). Thus, understanding how risk-taking behaviour influences bank efficiency is an important concern.

This study seeks to investigate the impact of risk on bank efficiency in Kenya. Understanding the role of different aspects of risk on banks efficiency is particularly important for the Kenyan banking sector given the rapid expansion of cross-border banking in recent years within East and Central Africa. This exposes the entire region to possible systemic risk/contagion effect in the event of a bank collapse (Mwega, 2014). The benefits of cross border banking have been demonstrated by Beck et al., (2014). Several reforms have also taken place in the banking sector in Kenya with banks such as I&M merging with Giro bank and changing its status to a large peer group. Bank of Africa experienced a decrease in its net assets thus shifting to the small peer group. In 2018, Bank AI Habib of Pakistan was allowed to set up its representative office in Kenya by the Central Bank of Kenya (CBK). Recently, NIC and Commercial Bank of Africa amalgamated to form NCBA Bank thereby boosting the level of shared capital and widened their market share. The period 2013-2019 has been characterized by a persistent increase in non-performing loans (NPLs). Asset quality has been deteriorating, thus amplifying the need for more provisioning on the losses (CBK, 2019).

On the regulatory front, the banking industry has experienced numerous changes in its capital adequacy requirements. For instance, in 2013, the ratio of total capital to total risk-weighted assets stood at 12%. This ratio rose to 14.5% in 2016 (CBK, 2013 & 2016). These developments have increased banks heterogeneity in terms of size and capital structure which may affect banks' risk-taking behaviour and efficiency. Highly capitalized banks may encounter lower moral hazard problems and are therefore more efficient. To maximize profits, highly capitalized banks may increase their level of risk exposure to compensate for the costly capital.

We contribute to the banking literature by estimating a simple model with efficiency coefficients obtained from data envelopment analysis (DEA) approach which allows us to identify the influence of unobserved bank-specific heterogeneity characteristics related to risk-taking behaviour on bank efficiency. This enables us to estimate in a single step the effects of risk-exposure on bank efficiency. Specifically, we account for the influence of capital, liquidity, and credit risks. The rest of this paper is organized as follows: Section 2 presents a brief literature review. Section 3 explains the methodology and data employed. Section 4 reports the estimated results and interprets the findings, while the final section concludes.

2. Related literature

Several studies have been undertaken on bank efficiency using different approaches and models. However, these studies have arrived at contrasting findings. Adopting Seeming Unrelated regression Altunbas et al (2007), evaluated the factors influencing the efficiency of European banks using annual data for the period 1992 to 2000. They established that inefficient banks exhibit high capital levels and had few high-risk debts while efficient banks were found to assume a higher level of risks. While using the Granger causality model to study the relationships between credit, efficiency, and capitalization for the period 1990-1998, William (2004) found that inefficient banks are associated with poor quality of loans.

Altunbas et al (2000) adopted the stochastic frontier methodology in estimating efficiencies while using data for the period between 1993 and 1996. They found that risks do not affect bank efficiency. But in sharp contrast, Ngan (2014) concluded that risks significantly influenced efficiency for Vietnamese banks. Existing literature also reveals that banks cost efficiencies are higher than profit efficiencies. In an evaluation of the efficiency of South African banks using panel data for the period 2000 to 2005 and Stochastic Frontier Analysis, Ncube (2009) found that banks were 85% cost-efficient and 55% profit efficient.

In a study of determinants of the efficiency of Sharia banks in Indonesia for the years 2010 to 2014 and adopting Stochastic Frontier Model, Wahyuni and Pujiharto (2016) found that bank size significantly impacts profit efficiency, whereas, a rise in credit and capital risks resulted in an insignificant improvement of efficiency. These conclusions contradict the results of Casu and Molyneux (2003).

In Kenya, Kamau (2011) used DEA to evaluate the X-efficiency of banks for the period 1997 to 2009 and established a technical efficiency of 47% under constant returns. Using a fixed-effect estimation and panel data for the period 2005 to 2011, Odunga, et.al, (2013) concluded that credit risk significantly correlates with operating efficiency. However, capital had no impact on operating efficiency. The reviewed studies suggest that risk may negatively influence bank efficiency though the findings do not converge. This study improves on previous studies by evaluating the effect of various risks on bank profit efficiency.

3. Methodology and data

Econometric approach

The empirical approach adopted by this study is a two-step analysis. We model the inter-temporal relationships between risk and efficiency for a large sample of banks operating in Kenya. Bank efficiency is proxied by profit efficiency which is more suitable than cost efficiency (De Young and Hassan, 1998). We used the DEA approach developed by Farrel (1957) and later improved by Charnes, et al., (1978) to assess the profit efficiency of banks. The DEA employs linear programming methods to get efficiencies of each bank by using several inputs and outputs (Cooper et al, 1978). Banks with an efficiency score of 1 are considered efficient while those below 1 are considered inefficient.

In the conventional CCR ratio model (1978) of data envelopment analysis, CCR assumes a constant return to scale where an adjustment in leads to an equal change in outputs and hence used in industries which operate optimally (Casu & Molyneux, 2003). But the banking sector does not operate optimally since it is highly regulated and competitive. For this study, we, therefore, adopt the BCC model (1984) which distinguishes between technical and scale inefficiencies. The bank revenue is specified as follows;

$qy = \sum_{n=1}^{N} q_n\, y_n$ …. (1)

And the cost of each bank is

$wx = \sum_{j=1}^{J} w_j\, x_j$ … (2)

To obtain the profit we get the difference between revenue and the cost

$\pi = qy - wx\ldots$ (3)

The profit-maximizing function of the bank is;

$Max\pi^0 = q'y^0 - w'x^0\ldots\ldots$ (4)

Subject to $(x^0, y^0) \in T$

T is the production possibility set of banks.

The optimal profits for the banks are;

$\pi^* = q'y^* - w'x^* \geq \pi^0 = q'y^0 - w'x^0\ldots.$ (5)

Thus, profit efficiency becomes;

$\delta = \frac{\pi^0}{\pi^*} \leq 1\ldots$ (6)

Where q'= q_1, q_2 ... q_n are the prices of the output of vectors while w' = w_1, $w_2\ldots w_r$ are the input prices and y^0 represent the outputs while x^0 represents the inputs.

To obtain the estimates of maximum profit the linear programming problem is solved as follows;

π^k=$Max \sum_{n=1}^{N} q_n\, y_n$ - $\sum_{j=1}^{J} w_j\, x_j\ldots\ldots\ldots$(7)

Subject to

$\sum_{k=1}^{K} \lambda_K \, x_{jk} \leq \; x_j$ (j = 1, 2, … , J)

$\sum_{k=1}^{K} \lambda_K \, y_{nk} \geq \; y_n$ (n = 1, 2, … , N)

$$\sum_{k=1}^{N} \lambda_K = 1$$

$\lambda_k \geq 0; (k = 1,2, \dots, K)$

The outputs (y_n) and (x_m) inputs are selected to obtain maximum profits and the non-negative scalar $\lambda_k = 1$ allows for the possibility of both negative and positive profits. Two techniques are applied in the identification of inputs and outputs. The first is the intermediation technique which is most appropriate when investigating firm-level efficiency. The second is the production approach which is most appropriate when analyzing bank branch-level efficiency (Kaparakis et al, 1994). By adopting the intermediation method of analysis, banks are assumed to play an intermediary role of combining labour, physical capital and funds to generate loans and securities (Berger & Humphrey, 1997). The input variables are x_1: funds, x_2: labour and x_3: fixed assets. Correspondingly, W_1 is funds price, W_2 is labour price and W_3 is fixed assets price. The outputs are Y_1 total loans and Y_2 total income with q_1 as the price of loans and q_2 being the price of income. In the second step, we investigate the relationship between bank risk and efficiency scores of each bank following Battese & Coelli (1995).

The empirical model is specified as follows;

$\pi_{it} = \alpha_0 + \alpha_1 \mathrm{CR}_{it} + \alpha_2 LR_{it} + \alpha_3 CAR_{it} + \alpha_4 \ln SIZE_{it} + \alpha_5 INF_t + \alpha_6 GDP_t + \varepsilon_{it}$…... (8)

Where;

π_{it} is profit efficiency of bank i at period t with $i = 1, \dots, N$

CR_{it} is the credit risk of bank i at time t

LR_{it} is the liquidity risk of bank i at time t

CAR_{it} is the capital risk of bank i at time t

$Size_{it}$ is the size of bank i at time t

$\ln SIZE_{it}$ is the natural logarithm of the total assets of bank i at time t

INF is the inflation rate

GDP is per capita GDP growth.

Studies that have controlled for inflation and economic growth include Hauner (2005), Maudos et.al (2002) and Pasiouras et.al (2007)

$\varepsilon_{it} = v_i + \mu_{it}$ Where υ_i is the unobserved complete set of individual bank-specific effect which controls for all cross-sectional (or 'between banks'), and μ_{it} is the idiosyncratic error. Tables 1 and 2 presents the definition and measurement of variables

Table 1: Description of DEA variables

Variable	**Notation**	**Measurement**
Inputs		
Funds Price	w_1	The proportion of Total interest expense to Total deposits
Labour Price	w_2	The proportion of Staff costs to Total assets
Price of fixed assets	w_3	The proportion of depreciation to Fixed assets
Funds	x_1	Total deposits
Labour	x_2	Employee costs
Fixed assets	x_3	Costs of fixed assets
Outputs		
Total Loans	y_1	Total loans advanced to customers
Total Securities	y_2	Total of income from investment in government securities
Total loans Price	q_1	Ratio of interest income to total loans
Total income Price	q_2	Ratio of income from investments in securities to total securities

Table 2: Description of estimation variables

Variable	Notation	Measurement	Predicted Effect
Profit Efficiency	E_{π}	Efficiency scores of each bank	-
Capital risk	CAR	The proportion of Equity to Total Assets	Positive
Credit risk	CR	The proportion of NPLs to Total Assets	Negative
Liquidity risk	LR	Ratio of Total loans to Total Deposits	Negative
Inflation rate	INF	Percentage change in the average consumer price measured annually	Negative/Positive
Bank Size	$\ln Size$	The logarithm of the total assets of each bank	Positive
GDP per capita growth	GDP	Growth of GDP per capita	Positive

The DEA BCC model was used to generate profit efficiencies of each commercial bank. After obtaining the efficiency scores a Tobit model was estimated. The Tobit model is suitable when the dependent variable is restricted by a certain limit, the limit being the DEA efficiency scores that range from 0 and 1. OLS estimation would have resulted in biased outcomes of the parameters since it assumes a normal distribution. Panel data for the period 2010 to 2019 was obtained from the annual audited financial statement of commercial banks available at the CBK. Annual macroeconomic data was obtained from the Kenya National Bureau of statistics.

4. Empirical findings

Table 3 presents summary statistics for the inputs and outputs used to obtain the DEA efficiency scores.

Table 3: Efficiency scores

Commercial Bank	Efficiency scores	Ranks
Bank of India	1.00	1
Citibank N.A Kenya	1.00	1
NCBA	1.00	1
KWFT	0.98	2
Bank of Baroda	0.98	2
Equity Bank Kenya	0.97	3
KCB Bank Kenya	0.96	4
First Community Bank	0.94	5
ABSA Bank	0.92	6
HFC Ltd	0.92	6
Diamond Trust Bank	0.91	7
Commercial Bank of Africa	0.88	8
Standard Chartered Bank	0.88	8
African Banking Corporation	0.86	9
National Bank of Kenya	0.86	9
Victoria Commercial Bank	0.86	9
I&M Bank	0.85	10
NIC Bank PLC	0.85	10
Gulf African Bank	0.83	11
Middle East Bank (K) ltd	0.82	12
Prime Bank ltd	0.81	13
Paramount Bank	0.80	14
Co-operative Bank	0.79	15
Guaranty Trust Bank	0.79	15
Habib Bank AG Zurich	0.79	15
Sidian Bank	0.79	15
Stanbic Bank Kenya	0.79	15
Family Bank	0.77	16
Habib Bank ltd	0.76	17

Development Bank of Kenya	0.76	17
Credit Bank ltd	0.73	18
Bank of Africa	0.72	19
Consolidated Bank of Kenya	0.72	19
Jamii Bora Bank	0.71	20
Guardian Bank ltd	0.69	21
UBA Kenya Bank	0.68	22
Ecobank Kenya	0.67	23
Giro Bank	0.66	24
SBM Bank Kenya	0.65	25
Spire Bank	0.65	25
M-Oriental Commercial Bank	0.60	26
Transnational Bank	0.60	26
Mayfair Bank	0.57	27
DIB Bank Kenya	0.52	28
Average Efficiency score	**0.80**	

The average profit efficiency is 80% implying that the banks missed an opportunity to make 20% more profits from similar inputs. The profit efficiency scores are nevertheless high which is expected of a developing economy like Kenya where capital markets are weak and banks are the main source of funding. The efficiency scores range between 0 and 1, a commercial bank with a score of 1 is said to be efficient. There were only four banks that were efficient namely NCBA, KWFT, Citibank and Bank of India. Large banks namely KCB, Equity, ABSA, Standard Chartered, Diamond Trust, Stanbic, Commercial Bank of Africa and I &M also exhibited high-profit efficiencies compared to the medium and small banks. This is because large banks enjoy economies of scale and therefore can generate more revenue. Due to their market power, large banks incur fewer costs of inputs compared to the small banks (Hauner, 2005). Table 4 presents the summary statistics.

Table 4: Summary Statistics

Variable	Observation	Mean	Min	Max	Std. Dev
Efficiency	399	0.8046	0	1	0.2136
Capital risk	399	0.1708	-0.1117	1.5655	0.1067
Credit risk	399	0.0581	0	0.8104	0.6993
Liquidity risk	399	0.7003	0	5.2808	0.3736
Bank Size	399	7.5384	6.2371	8.8289	0.5758
Inflation rate	399	0.0706	0.0396	0.1402	0.0274
GDP per capita	399	0.0321	0.0182	0.0549	0.0093

Standard deviation lies between 0.1067 and 0.6993 which implies that the scores are not spread out implying that they are normally distributed. The maximum value for the data is 5.2808 and -0.1117, the range between the values is close. The minimum value on capital is negative, perhaps due to some banks accumulating losses in their balances resulting in negative values for the shareholders' funds. Credit risk as proxied by NPL reveals a 6% nonperforming ratio. This is a good performance given the challenges faced by the banking industry in Kenya.
Table 5 shows the correlation matrix. The bivariate correlations are low. Credit and liquidity risks have a negative correlation with profit efficiency perhaps because interest revenue declines when non-performing loans increase. Capital risk, bank size and inflation are positively associated with bank efficiency. Credit, liquidity risks and GDP per capita are negatively correlated with profit efficiency.

Table 5: Correlation matrix

	Efficiency	Capital risk	Credit risk	Liquidity risk	Bank size	Inflation	GDP
Efficiency	1						
Capital risk	0.0089	1					
Credit risk	-0.1441*	0.0851	1				

Liquidity risk	-0.1512*	0.0147	0.1084*	1			
Bank size	0.2512*	-0.1190*	-0.1395*	-0.0232	1		
Inflation	0.1505*	0.0274	-0.1323*	0.0419	-0.086	1	
GDP per capita	-0.2068*	-0.0310	0.3014*	-0.0132	0.2174*	-0.3713*	1

* Significant at 5 percent level

Having obtained the efficiency scores, we then evaluated the relationship between risk and efficiency. We estimated a Tobit model, and the findings are presented in Table 6.

Table 6: Estimation results

Variable	Coefficient	t-value	p-value
Capital risk	0.1183	0.89	0.373
Credit risk	-0.3249*	-1.55	0.007
Liquidity risk	-0.1039*	-2.79	0.006
Bank size	0.1324*	5.23	0.000
Inflation	2.3705	3.92	0.142
GDP	-4.3885*	-2.52	0.012

* significant at 5 per cent level

Estimation results reveal that credit risk negatively influences the efficiency of banks. A rise in NPLs leads to an increase in loan provisioning which eventually reduces banks profit which is consistent with Casu & Girardone (2004). Liquidity risk impacts negatively on bank efficiency. This implies that banks management of cash and cash equivalent is weak resulting in banks inability to meet its current obligations thus loss of interest income which reduces banks profitability. These findings corroborate Reddy and Nirmala (2013) and Altunbas (2000). Capital risk has no significant impact on efficiency.

Turning to the control variables, this study established that GDP per capita has a significant negative impact on profit efficiency. With a booming economy, operating expenses or cost per borrower may also rise which may lead to a decline in profit efficiency. It may also be the case that barriers of entry into the banking industry are lifted with economic expansion increasing competition and reducing bank revenue (Tan and Floros, 2012). Contrasting findings have been documented by Maudos et.al (2002) on the efficiency of European banks.

Bank size significantly and positively impacts on efficiency. Perhaps large banks have an opportunity to widen their outputs as they are privileged with economies of scale thus cutting on costs and increasing output (Stever, 2007). This finding supports Al-Sharkas et al. (2008) and Kamarudin et. al (2019) but contradicts Ariff and Can (2008). Contrary to theoretical predictions the impact of inflation rate on efficiency is positive but insignificant.

5. Conclusion

At the onset, this study investigated the impact of banks risks on profit efficiency. The efficiency scores were obtained using the DEA approach. Estimation results established that credit and liquidity risks, significantly influence profit efficiency. Banks revenue declines because of non-performing loans. Banks, therefore, incur extra cost to generate income to meet current obligations when faced with liquidity challenges. All these lead to a loss of income which reduces profit efficiency. This study, therefore, concludes that risk matters for bank efficiency. Specifically, credit and liquidity risks. Banks should aim at choosing the optimum ratio of outputs and inputs so that they can maximize profits and cut on cost. Banks need to maintain a stable liquidity position such that at any point in time they can meet their obligations as they arise. Liquid banks do not incur an extra cost of borrowing from other institutions to meet their current obligations.

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Exorcising the "Ghosts" from the Government Payroll in Developing Countries in the Wake of the Covid-19 Pandemic: Ghana's Empirical Example

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Abstract
The salary payment of government workers constitute a significant percentage of total government expenditure in developing economies, simply because the government remains the largest or biggest employer. The Government Payroll system, therefore, requires a robust control mechanism to detect and prevent the occurrence of "payroll fraud", as the irregularity denies the state of huge sums of monies going down the drain and into private pockets, and which could have otherwise been channelled into some critical sectors of the economy; and to minimise the excessive borrowing by government to fill the gap. The several efforts and reforms by the Controller and Accountant-General's Department (CAGD) and the Ghana Audit Service (GAS) in particular; and the Ministry of Finance (MoF) in general, to clean the Government Payroll of these "payroll frauds" consistently over the years have not yielded the desired results. The various studies conducted on "payroll fraud" in Ghana did not address themselves to the introduction of the "Electronic-Salary Payment Voucher (E-SPV) system since 2014, which was hailed by many as the final panacea to the "annual ritual of ghost workers on the government payroll". To fill the gap, we conducted this empirical cross-sectional research on "payroll fraud" based on the "fraud triangle theory" and the "graft estimation model". We employed non probability purposive, but convenient, sampling methodology by means of structured questionnaires and face-to-face interviews to arrive at our conclusion. Our major finding was that "payroll fraud" can never be eliminated (but only minimised), and must therefore be treated and necessarily managed to the barest minimum (between 1% and 5%), just as normal "bad debts" in Financial Statements. Policy makers will have to revisit the issues about "Ghost Workers", in the midst of the novel and dreaded, and disastrous Convid-19 pandemic.

Keywords: Biometric registration, CAGD, E-SPV, Establishment Warrant, GAS, Ghost workers, Last Pay Certificate, MDAs/MMDAs, Management Units, Payroll fraud, Separated Staff

1. INTRODUCTION

The constant revelation of "Ghosts Workers" on the Government Payroll has become an "annual ritual" in almost all developing countries around the globe, including Ghana. Payroll fraud, is an activity whose participants are not necessarily those who are so much sunk in abject poverty, but rather those who are in a position to determine that the risk of detection, arrest, and punishment is so remote; and, therefore, there is no credible deterrence to prevent them undertaking their criminal activities (Amoako-Tuffour, 2002).

In most developing economies, the creation of "Ghost Names" (Hossain, 2013) is a common payroll fraud that occurs in the public sector. Inadequate research on "Ghost Names" in Ghana, in the face of the introduction of the Online "Electronic-Salary Payment Voucher (E-SPV) since the year 2014, continues to create a gap in literature with regards to "payroll fraud" on the Government Payroll. According to Tanzi (2013), ghost workers are those employees who receive salary from an organisation without showing up for work, or who may not exist but their names are kept on the payroll and their salaries appropriated by someone else.

Thus, ghost workers constitute a major drain on public funds and deprive countries of the badly needed resources for development (Gee, Button and Brooks, 2010). Despite this huge drain on public funds, Reinikka and Svennson (2006) assert that only a handful of studies exist on the phenomenon of ghost workers in the public services of countries.

The overriding need to inject greater accountability for, and discipline in, public spending, more especially in the wake of the Covid-19 pandemic, has suddenly kindled some extraordinary interest in "Ghosts Names" on the Public Sector Payroll worldwide. However, the stakes have risen so high for countries that are in the frenzied mood to organise national or general elections within the next twelve months, and Ghana is no exception.

Payroll processing in Ghana has passed through several changes from the days of yore, through a "manual type-written system" in 1896 (when the Government Treasury was established in the Gold Coast by the British Colonial Government), to an "Electronic-Salary Payment Voucher (E-SPV)" system introduced in September, 2014. In spite of these "seeming electronic control measures", the spectre of "Ghosts Workers" on the Government Payroll increases by leaps and bounds on an annual basis, with more and better coordination and sophistication by the perpetrators, far ahead of the payroll management body itself, the CAGD.

The primary objectives of this research were:

a. To ascertain the true existence of "active employees" on the Government Payroll;
b. To ascertain whether the current Payroll System administered by CAGD was secure; and that the individual Payroll Files are consistent with the actual Personnel Records of Government Employees;
c. To determine the ratio of "Payroll Fraud" to the Compensation of Government Employees; and
d. To determine if Ghost Names on the Government Payroll can ever be eliminated.

Flowing from the objectives, the legitimate questions to ask, are:

- What do we mean by "ghost workers"?
- Why do ghost workers exist on the "government payroll?
- What makes this business possible and profitable?
- Is the incidence of payroll fraud confined to a particular government ministry, department, or agency?
- How much of Ghana's public sector wage bill is due to payroll fraud?
- Can we rely on employee headcount alone to fix the problem of payroll fraud, more especially in the era of the novel and dreaded Covid-19 pandemic?
- What can be done to make payroll fraud unattractive, if not completely eradicated or eliminated?

Upon threats from some donor agencies in 2001, the Ministry of Education (MoE) removed some 10,000 "Ghost Names" on their payroll alone. On 21st August, 2007 "Joy FM Online" quoted the Controller and Accountant-General (Mr Christian Sottie) as saying that of the 19 trillion cedis budgeted for wages and salaries that year, 11trillion cedis (about 60%) was spent during the first half of the year. Mr Sottie cautioned that the public payroll could be overrun by as much as 3 trillion cedis if nothing concrete was done to curb the excess expenditure. He attributed the bloated wage bill to "Ghost Names". According to the Minister of Finance, Hon Kwadwo Baah Wiredu, the public sector wage bill as a share of total government spending fell from 33% in 2000 to 26% in 2003.

But according to the Minister, it rose again to nearly 29 percent in 2006, justifying a call for head count of public sector workers in 2007.

In September, 2014, the "Electronic-Salary Payment Voucher (E-SPV)" system was launched with welcoming relief and fanfare by the Minister of Finance, Seth Tekper, to end the menace of "Ghost Workers" on the "Government Payroll once and for all". The system became fully operational in January, 2015. However, on November 20, 2015, less than a year of its introduction, the then Controller and Accountant-General (Ms Grace Francisca Adzroe) reported the shocking revelation and removal of "ghost names" to the tune of some "5,861 ghost workers" (Graphic Online, 2015). And the irregularity has become an "annual ritual", according to the annual Auditor General's Reports.

Addressing the "May Day Rally" at the Independence Square in Accra in 2017, the President of the Republic, Nana Addo-Danquah Akufo-Addo announced the removal of some "26,589 Ghost Names" from the Government Payroll (Graphic Online, 2020). According to the President, this was to save the Ghanaian taxpayer some GHC433 million for the 2017 fiscal year alone. It is interesting to note, however, that in a quick rebuttal just the following day, the National Association of Graduate Teachers (NAGRAT), vehemently rejected the President's statement, claiming that "13,800 of the so-called Ghost Names belonged to the Association".

On April 5, 2019, the then Controller and Accountant-General, Mr Eugene A. Ofosuhene, also reported that "his Department had cleared off all Ghost Names that existed on the Public Sector Payroll in the range of some 20,000 workers" (Graphic Online, 2019). And on September 23, 2020, (Graphic Online, 2020), again reported that the Acting Controller and Accountant-General had cleared "7,000 Ghost Names" from the Government Payroll. Mr Kwasi Kwaning Bosompem was quoted as saying that the names were removed after a team of accountants and auditors from the CAGD and GAS had toured the country to enumerate workers (head count) on the government payroll.

The above assertions by the three immediate Government Accountants, and buttressed by the President of the Republic himself, raises the legitimate questions, "What constitute Ghost Names?", and "Why have the removal of Ghost Names on the Public Payroll become an 'annual and political ritual'?". The causes, effects, findings, and possible solutions to the menace of "ghost names on the public sector payroll in developing countries in general, and Ghana in particular", formed the basis of this cross-sectional research. This study was necessitated to assess the impact of ghost workers on the public sector payroll in Ghana, despite the introduction of the "Electronic-Salary Payment Voucher (E-SPV) system, and in the likely probability that the phenomenon would increase in the wake of the novel, dreaded, and disastrous Covid-19 pandemic.

The rest of the paper is presented sequentially according to literature review, theoretical framework, empirical studies, methodology, discussion of result and major findings, conclusion and recommendations.

2. LITERATURE REVIEW

Who is responsible for the Management of the Public Sector Payroll in Ghana?

The CAGD is the body responsible for public sector payroll management in Ghana. The payroll management division is one of the six divisions of the CAGD. It is headed by a Deputy Controller and Accountant-General. The division has two directorates – the "Active Payroll" directorate, which has ten sections and over 160 staff, and the Pension directorate with two sections and staff strength of more than 90. Its main responsibility is to process and pay compensation of employees to active and retired public servants and their beneficiaries under the "CAP 30 Pension Scheme" as required under the Public Financial Management Act 2016 (Act 921) and its Regulations, and the CAP 30 Pension Act. In this regard, the division is responsible for the management of the National Salary and Pension payroll.

There are laid down procedures, responsibilities and clear timelines for the management of the national payroll. It is a shared responsibility between the CAGD and employer institutions or covered entities (MDAs/MMDAs).

Covered entities have Transaction Processing Centres (TPCs) which have been connected and given local access to the Payroll Processing System (PPS) at the CAGD.

It is the responsibility of the employer institutions to ensure that the biodata, job classification and other relevant personal information of each staff member is captured or updated on the payroll system. They are also to validate the payment vouchers before the final payroll run. The payroll management division validates the data recorded at the employer level and processes the payment by the pay-day for each pay period.

2.1 From the Manual to the Online Electronic Salary Payment Voucher System

Since the establishment of the Gold Coast Treasury in 1896 by the Colonial British Government, the payment of Civil and Public Servants had been done through a "manual type-written payment voucher system" at the "local management unit levels". What happened in practice was that after the passage of the Appropriation Act, the votes of all MDAs/MMDAs and other Covered Entities were released to the various Heads/Spending Officers at the Headquarters in Accra. The Votes were broken down into "Recurrent Expenditure (of Items 1-5)", and "Capital Expenditure (of Items 6-8)".

Heads/Spending Officers of the various MDAs/MMDAs and other Covered Entities at the Headquarters in Accra would then prepare "Financial Encumbrances/Financial Encumbrances Adjustments (FEs/FEAs) to the respective Regional/District Heads of Department. This meant that not a single pesewa of Recurrent Expenditure, including the 'Votes for Wages and Salaries' were kept at the Headquarters. Only the 'Votes for Capital Expenditure' were kept at the Headquarters. As a result, the Chief/Regional/District Treasury Offices of CAGD were responsible for all payments for Recurrent Expenditure, including Wages and Salaries at the Regional/District level.

Thus, all payments at the Regional/District level were done via the "manual type-written payment vouchers" prepared by the Management Unit, and submitted to the Chief/Regional/District Treasury Offices of the CAGD (as the case might be). New employees were recruited and paid by the local management units through "Establishment Warrants (EWs)", while old employees on transfer were paid using their "Last Pay Certificates (LPCs)" from their previous management units. Thus, there was no "Payroll Processing Unit at the CAGD Headquarters in Accra" before 1985.

As a general rule, and to all intents and purposes, the Monthly Wages and Salaries of Workers were paid 'across the Accountant's Table'. At the end of each month, any worker who chose to operate a Personal Bank Account would collect his/her wages/salaries across the Accountant's Table, and then walk to his/her Bankers to deposit whatever portion of his/her salary into his/her bank account. Accountants of the Local Management Units were supposed to "pay into "Government Chest any unearned/unclaimed wages/salaries at the end of the month". And this payment back into the "Government Chest/Consolidated Fund" of "unclaimed wages/salaries at the end of every month", hardly occurred, if any.

This had been the practice since 1896, until January, 1985 when the Payroll of some few selected MDAs/MMDAs were "piloted for centralisation and mechanisation" at the CAGD Headquarters in Accra. With the "mechanisation in 1985", came the "order" from the CAGD for the "opening of individual salary bank accounts of workers through which their monthly wages and salaries were to be credited". For the next seven or more years to 1992, this "directive was more flouted than obeyed", even in the face of a military dictatorship in Ghana.

2.2. Theoretical Framework for the Study: The Fraud Triangle

This research was grounded on the "Fraud Triangle Theory" propounded by Cressey (1950) and amplified into the "Fraud Diamond" by Wolf and Hammond (2004). The research was also propped up by the "Graft Estimation Model" developed by Reinikka and Svennson (2004). The fraud triangle is a theory that explains the motives for committing fraud (Dorminey et al, 2012). However, the graft estimation model measures the extent of losses or theft of public funds in government agencies (Zhang, 2012).

The "Fraud Triangle theory" was developed by Cressey (1950), a renowned criminologist, educator, and a writer whose work has provided the framework for understanding the motives for fraud, and the characteristics of fraudsters (Kassem and Higson, 2012). Cressey hypothesized that for individuals to commit fraud, three factors must always be present and they are; pressure, opportunity, and rationalisation. According to Albrecht et al (2008), and Gbegi and Okoye (2013), these factors must necessarily be present for fraud to occur, irrespective of whether the perpetrator benefited directly, or the benefit went to his/her organisation.

The "Fraud Diamond" was developed by Wolf and Hammond (2004) who introduced the "capabilities of the fraudster" as the fourth component to the fraud triangle. The principles underlying the fraud diamond is that "fraud will not occur without the right person with the right capabilities". Various fraud and corruption studies in public sector organisations, with particular reference to the government payroll, health and education, have relied on the fraud triangle theory (Fitzsimons, 2009; Reinikka and Svennson, 2006).

2.3. The Graft Estimation Model

The Graft Estimation Model by Reinikka and Svennson (2004) was used by Olken and Pande (2012) to determine leakages or theft of public funds in government institutions. Graft is measured by comparing the budgeted amount allocated or released to a government organisation by the "Central Government", and the actual amount received at the local level; the difference represents graft or corruption. The instrument used to measure graft is the Public Expenditure Tracking System (PETS). One study of the leakage rate in the educational sector in Uganda was 87% (Pande, 2012). In Papua New Guinea, the rate of ghost teachers was 15% in 2002 (World Bank, 2004), and 23% in Honduras in 2010 (World Bank, 2010). The percentage might certainly have been worse in Ghana.

2.4. Empirical Studies on Ghost Workers on Government Payroll

An empirical review of the literature on Ghost Workers shows a widespread phenomenon, not only from the developing economies, but also from the very advanced countries as well. Four major concepts could be derived from the fraud triangle theory. The first concept is the possibility of individuals to violate the trust reposed in them by their superiors. Second, there are forces that motivate individuals to commit fraud in violation of the trust reposed in them (Brody et al 2012). Third, fraud can be committed by individuals within an organisation, irrespective of their positions or status (Trompeter et al, 2012). Finally, fraud can be minimised if the factors encouraging fraud can also be minimised (Gbegi, & Okoye, 2013).

In a study on why corruption persisted in the public service of Nigeria, Ibietan (2013) observed that for as long as the fraud triangle of need, opportunity, and weak sanctions subsists, corruption in the Nigerian public service will never be tamed; but that it will rather continue to have more powerful and sophisticated active converts. A study conducted by Chevis and Barrum (2012) showed similar results of fraud in the Papua New Guinea public service According to the World Bank (1995), "ghost workers" are public sector employees who have died, retired, or completely left the public service, and yet have their names on the government payroll. In payroll fraud research, the number of employees in the organisation determines the size of the organisation. According to the fraud triangle, as the size of an organisation increases, the internal control system of the organisation becomes weak (due to the enhanced complexities of its operations), leading to the perpetration of fraud.

Amoako-Tuffour (2002) estimated that ghost workers represented 5.8% of government expenditure on wages and salaries every year. In the same year, the Minister of Finance in a budget statement to Parliament (2002), indicated that "10% of the total amount spent on civil and public servants were lost every month through the insertion of ghost names on the government payroll". The crux of the matter is that "ghost workers drain public funds, and deprive nations of the scarce resources for development" (Gee et al, 2010). The solution to this canker was what this research sought to achieve.

3. METHODOLOGY

The study was cross-sectional and it adopted the non-probability quota sampling method to select the management units for the survey (Tansey, 2007). The study also used the Public Expenditure Tracking Survey (PETS) as developed by Reinikka and Svennson (2004), in conjunction with the Appropriation Acts for the data collection. This was because after the first successful implementation of PETS in Uganda in 1999 (Olken & Pande, 2012), it has now become a standard practice for financial data measurement in the public services.

The population of this research consisted of the Heads and the Finance Officers of the various MDAs/MMDAs; HR Staff responsible for Employee Personal Records and the Payroll Processing Section (PPS) and the Internal Audit Units of the various MDAs/MMDAs; Staff of the Payroll Processing Section (PPS) and the Integrated Payroll Processing Division (IPPD) of the CAGD; the Audit and Investigations Division of the CAGD; and the Staff of GAS.

Purposive sampling methodology was employed. As a result of the ramifications of the novel and deadly Covid-19 Pandemic, some virtual interviews were conducted through some social media applications. Moreover, both open-ended and closed-ended structured questionnaires were set up and sent to the various respondents through the use of 'Google Forms'.

A total of 150 respondents were sampled. From the virtual interviews and structured questionnaires, adequate data was obtained on the following:

- Employee Personal Data from the MDAs/MMDAs. We enquired to know how often Employee Personal Records and documents such as academic and professional certificates, appointment letters, confirmation and promotion letters, contract extensions, SSNIT Biometric Registration Card, and Biometric Data were reviewed.
- Biometric data on Government Employees and Pensioners from the MoF.
- Details and payroll processes of the Electronic Salary Payment Voucher System (E-SPVs) from the CAGD.
- Data on Report 11 (this report contains information on the amount paid to Government Employees and Pensioners each month per bank).

From then, data collection instruments were used to capture both primary and secondary data relevant to the objectives of the research. The information collected were analysed and presented in tables, charts, and graphs and consequently discussed both qualitatively and quantitatively.

4. RESULTS AND DISCUSSION

4.1 Demographic Statistics of Employees on Government Payroll

This section presents the summary statistics of government employees on the public payroll during the period of the research. Table 1 below shows the demographics of employees according to age, sex, MDAs, and regions.

Figure 1: Regional Summary of Active Employees on the Government Payroll in 2018

Figure 1 above shows that the Ashanti Region houses the majority of active employees on the government payroll and this could be attributed to the fact that this region in Ghana holds the greatest land size and definitely has a huge population. The capital region of Ghana, Greater Accra, follows the Ashanti Region in the number of active employees. This region has the densest population. The upper parts of Ghana hold the lowest number of active employees on the Government payroll, with the Upper West Region recording the least of the employees.

4.2 Top 10 MDAs/MMDAs Employees on the Government Payroll as at June, 2018

Here, the number of employees on Government Payroll as at June, 2018 were reported for the top ten MMDAs/MMDAs in Ghana.

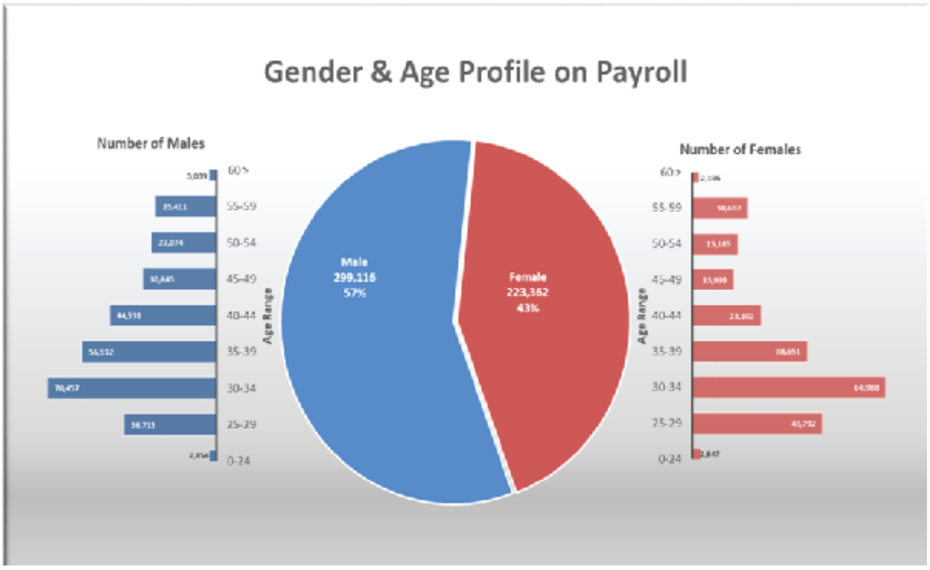
Table 1: Top 10 MDAs/MMDAs Employees on Government Payroll

No.	MMDA/MMDA	Number of Employees
1	Ministry of Education	317, 512
2	Ministry of Health	108,927
3	Ministry of Local Government	27,186
4	Ministry of Interior	23,722
5	Ministry of Lands and Natural Resources	5,334
6	Judicial Service	4,896
7	Environment, Science, Technology and Innovation	4,612
8	Finance	4,315
9	Information	2,227
10	Food and Agriculture	2,061
	Remaining (11)	21,686
	Total	**522,478**

4.3 Gender and Age Profile of Employees on the Government Payroll

This section describes the demographics (gender and age) of employees on the Government Payroll. It is found that 57.2 percent of the employees were males whereas 42.8 percent were females.

Table 3: Gender and Age Profile of Employees on Government Payroll as at June, 2018



4.4 Table Showing Ghost Employees on the Government Payroll as at 30/06/2018

No.	MMA/MMDA	Ghost Employees	Gross Amount
1	Ministry of Education	5,074	233,269,901
2	Ministry of Health	1,388	127,268,356
3	Local Government Service	548	34,584,009
4	Ministry of Interior	295	24,465,320
5	Ministry of Lands and Natural Resources	136	9,980,826
6	Ministry of Environment, Science & Technology	90	9,785,663
7	Ministry of Food and Agriculture	81	7,220,148
8	Ministry of Local Government	75	4,827,268
9	Ministry of Communication	26	2,752,290
10	Ministry of Chieftaincy	23	1,939,155
11	Ministry of Tourism	23	1,885,666
12	Justice and Attorney General	21	5,236,443
13	Ministry of Trade and Industry	16	1,705,108
14	Ministry of Finance	7	1,361,054
15	Ministry of Roads and Highways	6	307,298
16	Judicial Service	4	107,980
17	Ministry of Transport	3	204,961
18	Gender, Children and Social Protect	3	207,479
19	Ministry of Foreign Affairs	2	221,289
20	Ministry of Information	1	255,571
21	Ministry of Youth and Sports	1	49,007
	Total	**7,823**	**467,634,792**

4.5 Salary-Grade Mismatch

Our research revealed that the personnel records showed a mismatch in the salary grades of some 1,200 employees, when compared with their actual grades on their Appointment/Promotion Letters.

4.6 Discontinued Staff still on the Government Payroll

A review of the data showed that a total of some 6,307 employees declared as "discontinued staff" through the E-SPV System, continued to receive their monthly salaries

4.7 Overaged Employees on Government Payroll

From the data gathered, it became obvious that the payroll system had not been properly configured to automatically terminate the records of employees who attain the statutory retirement age of 60 years. Our research revealed that the names of some 84 employees who had attained the compulsory retirement age of 60 years, and had no contract extension, were still on the Government Payroll.

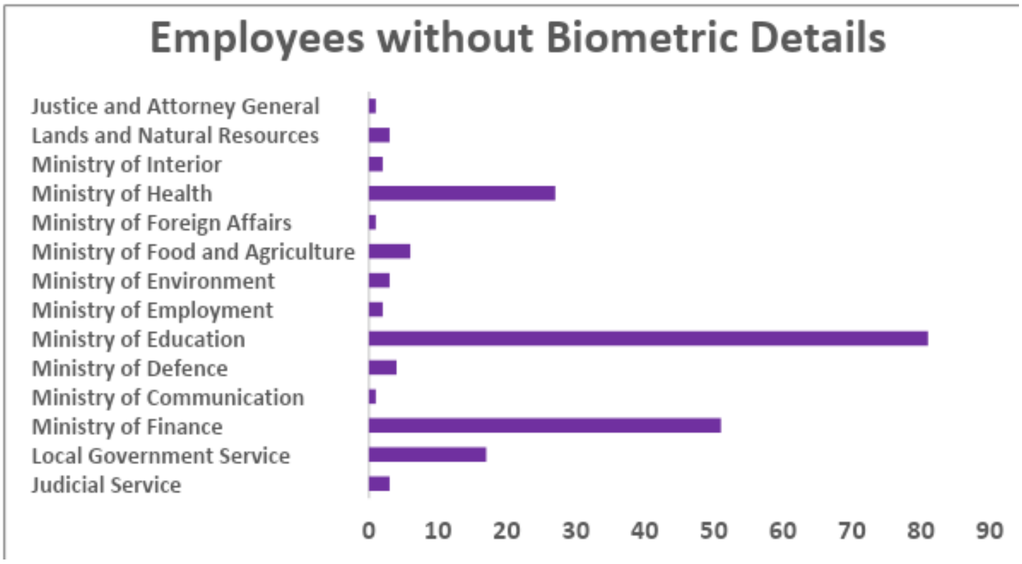
4.8 Employees without Biometric Details.

No.	MDA/MMDA	Number of Employees
1	Judicial Service	3
2	Local Government Service	17
3	Ministry of Finance	51
4	Ministry of Communication	1
5	Ministry of Defence	4
6	Ministry of Education	81
7	Ministry of Employment	2
8	Ministry of Environment	3

9	Ministry of Food and Agriculture	6
10	Ministry of Foreign Affairs	1
11	Ministry of Health	27
12	Ministry of Interior	2
13	Lands and Natural Resources	3
14	Justice and Attorney General	1
	Total	**202**

The Biometric Verification System (BVS) serves as a pre-condition for the payment of salaries to Government Employees. Despite this control, our research revealed that the names of some 202 employees who had not gone through the Biometric Registration were miraculously on the Payroll. The Ministry of Education records the highest number of employees with biometric registration. This is illustrated in the figure below.

Figure 2: Employees without Biometric Details



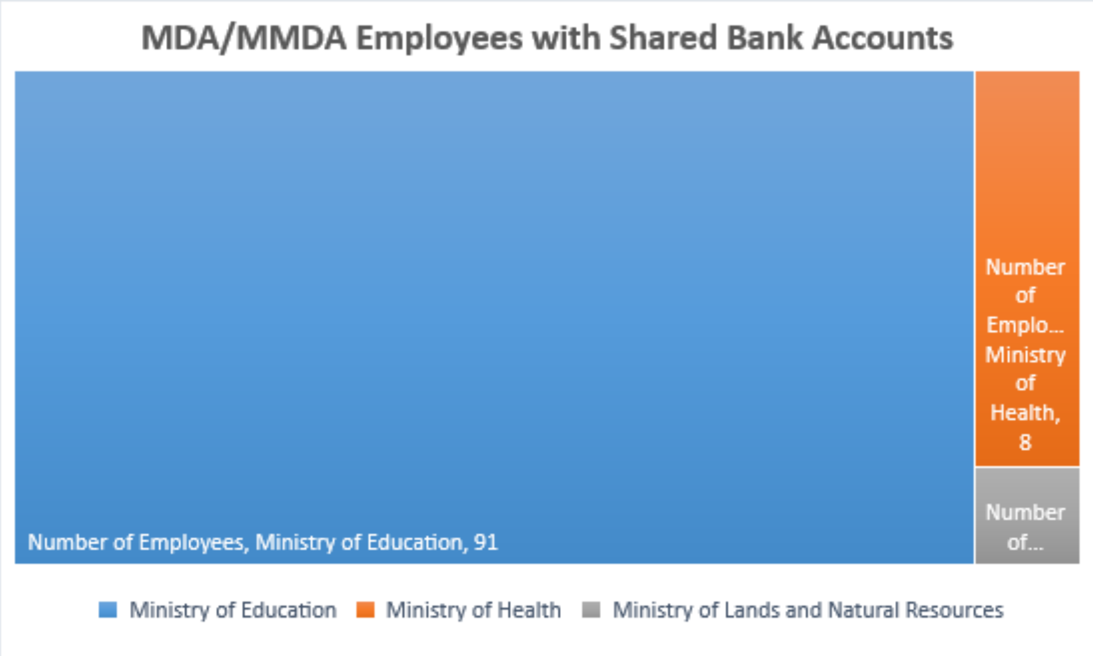
4.9 Suspected Cases of Personation

No.	MDA	Number of Employees
1	Judicial Service	2
2	Local Government Service	10
3	Ministry of Finance	3
4	Ministry of Education	261
5	Ministry of Food and Agriculture	1
6	Ministry of Health	67
7	Ministry of Information	1
8	Ministry of Interior	10
9	Ministry of Lands and Natural Resources	8
10	Ministry of Roads and Highways	1
11	NCCE	1
12	Head of Civil Service	1
	Total	**366**

4.10 Shared Bank Accounts

The Ministry of Education has 91 employees with shared bank accounts. The values are lower for the Ministry of Health with 8 employees and the Ministry of Lands and Natural Resources with 2 employees having shared bank accounts.

Figure 3: Shared Bank Accounts

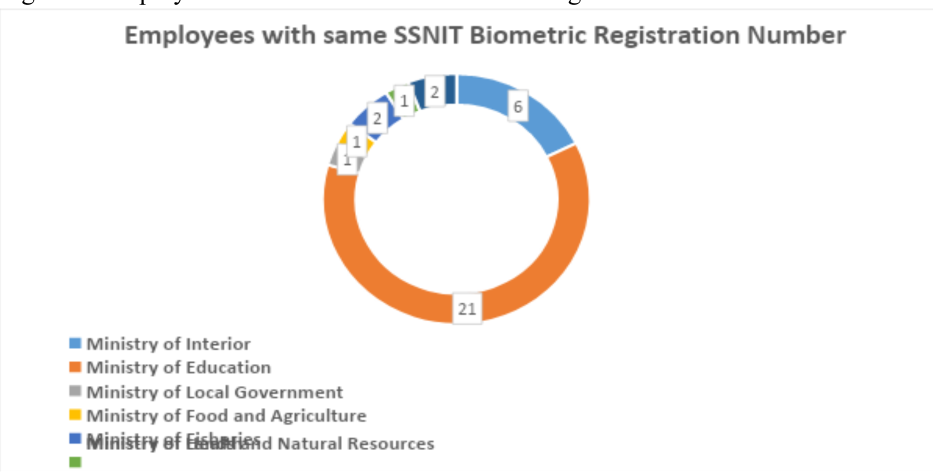


4.11 Employees with Same SSNIT Biometric Registration Number

No.	MDA/MMDA	Number of Employees
1	Ministry of Interior	6
2	Ministry of Education	21
3	Ministry of Local Government	1
4	Ministry of Food and Agriculture	1
5	Ministry of Fisheries	2
6	Ministry of Health	1
7	Ministry of Lands and Natural Resources	2
	Total	**34**

This is illustrated graphically below.

Figure 4: Employees with same SSNIT Biometric Registration



4.12 Poor Migration of Payroll Data of Employees

As stated earlier in the write-up, the CAGD first implemented a "Mechanised Payroll System" in 1985, away from the hitherto "Decentralised, Manual and Type-Writer-Based System". Although that Payroll System was centralised in Accra at the Treasury Headquarters, "it was more manual, than computerised." This manual system continued to be operated until 1992 when the CAGD implemented its first "Integrated Personnel and Payroll Database (IPPD 1)" system for all employees on the Government Payroll.

In 2000, the CAGD migrated all Government Employees from IPPD1 to IPPD2. However, in 2010, owing to the sheer numbers of personnel of the Ministry of Education, coupled with the implementation of the Single Spine Salary Structure (SSSS), the CAGD migrated the Staff of the Ministry of Education to the newly installed IPPD3, whilst maintaining the workers of all other MDAs/MMDAs on IPPD2. The poor changeover resulted in the loss of all the historical records of the staff and Teachers of the Ministry of Education across the country.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

Before the centralisation of the preparation and payment of wages and salaries at the CAGD Headquarters in Accra in 1985, the country was probably losing about 75 percent of the Total Employee Compensation to "Ghost Workers". This was because there existed a fraud triangle between unscrupulous management unit heads of MDAs/MMDAs, District/Regional/Chief Treasury Officers of the CAGD, and Officers of GAS. Studies on "Payroll Fraud" did not receive the desired academic research into the phenomenon, despite the huge and glaring "revenue leakages" as a direct result of the "manual and type-written Wages and Salaries Payments Vouchers" prepared and paid at the local level (Amoako-Tuffour, 2002; Reinikka and Svennson, 2001). In fact, Amoako-Tuffour's estimation of 5.8% revenue leakage due to "ghost workers in 2002", was dangerously an understatement. And the above conclusion is premised on the fact that if after the implementation of the E-SPV, the three immediate Controller and Accountant-Generals could be talking of expunging about 5,861; 20,000; and 7,000 "ghost names" respectively from the Government Payroll, then one could easily imagine what was happening during the "manual type-writer days", and the pre-E-SPV era.

One major flaw of the CAGD over the years, has been its quick readiness to always declare the number of "Ghost Names" on the Government Payroll that have been cleared, but would always shy away from providing the actual amount that have gone down the drain, and into private pockets. It is, therefore 'impossible to provide the actual amount of monies that have gone down the drain, specifically due to Ghost Names' for any empirical analysis to be made.

This conclusion was confirmed by the Auditor-General's Report on the "National Payroll and Personnel Verification Audit", as at June, 2018. The "Outturns" provided in the Annual Budgets Statements on Employee Compensation are an "omnibus figure", without showing the "actual amount lost through Ghost Names". It is highly recommended that the CAGD will do the needful, going forward, to enable a better and more critical analysis of monies lost through the existence of Ghost Names on the Government Payroll to be made.

The International Monetary Fund (IMF) in its October, 2020 Fiscal Monitor Publication, has predicted that Ghana's fiscal deficit will reach 16.4 percent of GDP this year (up from the initial government projection of 4.7 percent of GDP), the largest in the country's history. The projection is not only the highest in Ghana's history, but will also become the biggest deficit in sub-Saharan Africa. The record deficit projection comes on the back of the devastating effect of the Covid-19 pandemic, which caused a huge shortfall in government's revenues amidst bigger-than expected spending in a frantic effort to contain the disease (such as the payment of salaries to all workers on the government payroll despite the shutdown of non-essential public services, and a 50% increase in the "basic salaries of frontline health workers)).

In a face-to-face interview with the Controller and Accountant-General, he asserted that the phenomenon of "Ghost Names" on the Government Payroll, "can never be completely eliminated". According to him, if anything at all, it can only be "minimised to between 1 percent and 5 percent"; and such a percentage is to be tolerated at any time "t", and treated as "bad debts" in the course of "normal business accounting practice". This is because at any given point in time, some employees may resign from the government service, or may die, or may travel outside the country.

The date of such a discontinuance of work, and the time this might take for the information to come to the attention of the Head of the Management Unit, for the necessary "payroll input" to be prepared and forwarded to the Headquarters of the respective MDA/MMDA for certification and onward transmission to the Payroll Section of the CAGD for processing, "will never take less than three months". Within this minimum period of three months, "a ghost name would have been inadvertently created or occurred on the government payroll", through nobody's fault, he asserted.

From our research and responses from respondents, it was evident beyond any scintilla of doubt that the removal of "Ghost Names" from the Government Payroll is, and must be, a shared responsibility from the Heads of Local level Management Units of MDAs/MMDAs through to the National Level; plus officers of the HR division of the various MDAs/MMDAs; staff of the Controller and Accountant General's Department (CAGD); staff of the Ghana Audit Service, (GAS); the Banks; and the Ministry of Finance.

Finally, since the fact still remains that due to the numerous restrictions and lockdowns of most MDAs/MMDAs as a direct result of the novel and dreaded Covid-19 pandemic, why on earth should Heads of Management Units still be required to "verify their staff electronically online, and take full responsibility for any Ghost Names?" Future researchers are encouraged to consider the "concept of ghost workers in a post-Covid-19 pandemic era, where online and remote working will become the norm, rather than the exception"

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The Monetary Crisis and Foundation for Reserve Bank of India (1890-1935)

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Abstract
The monetary policy of British India was highly controversial during the interwar period as it aimed to protect the budgetary obligations and private commerce. The currency stabilization policy was seen as a tool to protect the British economic interest while they ruled India. The currency came under serious pressure during the World War I and Great depression, the facets of Indian currency's dependence was exposed through the modified council bill system and Gold exchange standard. The much-needed currency reforms and banking system were conceded by the colonial administration after much wrangling for half a century.

Keywords: British India, Monetary System, Council Bill System, Gold Exchange Standard

JEL: N01, N10, N15

1. INTRODUCTION

There were a number of critical phases during the colonial regime from the establishment of the East Indian Company to the granting of independence. The colonial relationship as primarily observed by various nationalists was more about wealth transfer and pursuance of policies towards colonial economic interest which undoubtedly led to deprivation of national wealth (Gupta, 2002). The backdrop against which British India was administered had also been investigated and researched in great depth and several of the British policies were criticized for being pivoted around exploitation. The objective of this paper is to explore the financial facets and the monetary system of British administration in governing British India during the controversial currency crisis which led to the formation of Reserve Bank of India.

This Paper is structured as follows: the Section 2 outline the facets of British India's fiscal policy, the gold exchange system, home charges and the council bill system which acted as an alternative to gold standard. It is followed by a detailed analysis on currency crisis and different committee's recommendations in the Section 3. The impact of great depression on Indian monetary system is discussed in Section 4. Finally, Section 5 provides accounts on the establishment of Central banking system in British India.

2. BRITISH INDIA'S FISCAL POLICY - AN OVERVIEW

It is imperative to understand the revenue administration of the Colonial regime as all economic policies culminated in the augmentation of revenue for imperial power. The Tax system adopted in British India during the latter half of 19th century was regressive and income inelastic. A major portion of revenue, around 50%, was generated from Land tax and 24% from sale of opium and Salt. The slight expansion of economy during the subsequent period did not translate into revenue increase as the sources of revenue such as land and salt were inflexible. British India depended heavily on land tax for its revenue which did not show any notable improvement as the yield remained stagnant for an exceptionally long period. The other flexible sources such as customs, excise and income tax were yet to gain importance in revenue administration (Ambirajan, 1978).

Only after World War I, in order to counter the financial stringency, the government was forced to explore the other options of flexible sources. It is to be noted that the sustained campaign and resistance by landlords against land tax also necessitated the government to explore alternative sources of revenue. At the end of that decade, the combined share of customs, excise and income tax rose to 50%. The government however faced some impediments in levying tax on groups like the self-employed and industrial firms which were owned by Europeans and landlords. The burden of defense expenditure, pension payments and debt service (huge interest payments) accounted for the majority of the spending and only less than 25% went into investment (Gupta, 2002). The other major point of contention during that time was the large remittances made by the Government. It had adversely affected the spending on public goods and capacity to invest in much needed machinery and raw materials whereas during the same period the other countries like Ceylon, Philippines and Thailand spent two to three times that of British India. This underlines the influence of imperial concerns of administrative and political stability leaving too little scope for development.

The government revenue in proportion to GDP during the period 1920-30 was just 5% as compared to 19% in UK. The tax per head per unit of GDP was also the lowest compared to other colonies like Malaysia or even French Colonies at that time. The National Income rose from Rs 18 million to Rs 25.9 million during the period 1910 to 1930. But the increase in revenue over a period of time did not result in a significant rise in the Tax-GDP ratio. On the contrary, debt to GDP ratio rose to 40.6 in the year 1938. So, evidently debt service and administrative commitments override the investment and social development. The contention of our nationalist throughout the period was that the leakage of funds in the form of 'home charges' led to lower expenditure on needy sectors (Ambirajan, 1978).

2.1 THE GOLD EXCHANGE STANDARD

The foremost objective of monetary policy was to standardize the exchange rate and stabilize the export and import. An appreciation of currency affected the commercial interest of the exporter's often private commerce and depreciation resulted in deficit budget, therefore it became difficult to meet the sterling obligations. The currency reform of uniform silver weight was introduced in the year 1835. This led to silver standard and silver became the accepted means of currency across British India. There were two ways by which trade transaction took place between India and the rest of the world. One was by way of council bill sales and the other was minting of Silver bullion into coins which were procured as payment by Indian traders in London. Towards the last decade of the 19th century, silver supply increased across the world which led to a sharp decline in silver prices. The traders found that buying silver bullion in London and minting that into coins in India was profitable compared to Council bill redemption. Once the council bills came under severe threat, the government devalued the rupee which however strained the budget to a considerable extent. As the value of silver started to fall rapidly, free coinage of silver was suspended in 1893 (Tomlinson, 1979).

The Gold supply increased in the 1890s after discoveries in South Africa. The classical gold standard and claim for Gold circulation gained momentum amongst Indian Nationalists as this was seen as a sign of independence. The home charges represented a debt contracted in gold that was to be met by equating it to silver rupees which was vehemently opposed by our nationalists. To adapt to this different monetary condition, two committees examined the situation and submitted partially divergent reports. The Fowler committee advocated the adoption of Gold Standard with Gold circulation whereas the Hershell Committee recommended Gold Standard without Gold Circulation. In 1898, the Gold Exchange standard was introduced, and the trade balance remained favorable up to 1913. However, it was occasionally disturbed due to heavy borrowings by British India. The demand for Indian goods was stronger during this period. The central bank of a borrowing country had to settle the remittances/payment in Gold at a fixed maximum rate as a standard trade practice. The international trade was carried out without use of Gold as currency or little flow of Gold from one country to another (Brunyate, 1926).

2.2 THE HOME CHARGES

Great Britain was on Gold Standard and the Indian currency was Silver. The Silver rupee coin was not convertible by law, but it can be exchanged at the rate of £1 per Rs 15 in 1898 as fixed by the Fowler committee. It is to be noted that the ultimate phenomenon of trade would not be different if one country operated on Gold standard and the other country had inconvertible currency. The Secretary of State issued a notification that sterling bills would be sold in exchange of currency but the conversion rate was considered to be very unfavorable to Indians and that the exchange of Gold for currency was entirely within the absolute discretion of the imperial power. The trade was favorable for India as there was a greater demand for Indian goods particularly raw materials. The Secretary of State had to remit 'Home Charges' in sterling annually in London. The Nationalist saw the home charge remittances as 'unilateral transfer of wealth' and 'expropriation of surplus 'but in Keynes perspective the creditor nation was heavily investing in its colony and it was characterized as reverse drain of wealth from England. The large remittance was considered as a case of imperial exploitation by the Nationalists but alternatively some of the British Economists considered the influx of capital into British India an example of local development fostered by the British. The Second Boer War (1899-1902) changed the situation rapidly as gold reserve fell to an all-time low and the Gold circulation was opposed tooth and nail by Treasury officials in London and the Indian Nationalists' demand became infeasible (Ambirajan, 1978).

2.3 THE COUNCIL BILL SYSTEM- AN ALTERNATIVE TO GOLD STANDARD

The Secretary of State offered to sell council bills in India. The bills were readily purchased by Exchange banks located in Calcutta, Bombay and Madras. The 'home charge' chargeable to Indian revenue was thus collected in Rupees. The Exchange banks would sell council bills to Indian exporters. The Indian exporters would buy council bills proportional to their receivables for goods exported by them to London. The exchange banks after discounting the bills drawn by the Indian exporters sent it to London for Sterling payment. The Indian Exporters would en-cash the council bill certificates in Rupees in our treasuries whereas Exchange Banks would be paid in Sterling in London through their head offices. As the balance of trade was favorable to India, there was a heavy demand for council bills since 1904. The sale of council bill became an effective strategy to prevent the gold flow into India which was the undeclared policy of the Secretary of State (Balachandran, 1993).

The price at which the council bill was bought and sold became an index for Sterling-Rupee exchange. The amount of council bills sold in any year was equivalent to the amount of Gold which could have been imported to India. But its effect on price level remained more or less the same as if the metal had flowed into India. The council bills collected by treasuries were again circulated back by the Secretary of State to Exchange banks by way of sale. Thus, to a greater extent it prevented gold movement into India as desired by the British. Throughout the period from 1893-1913 the trade was favorable to India, however the higher demand for Indian goods and large borrowings in terms of capital goods were considered as major disturbances in the trade balance. The council bill system played the role of Gold movement into India; however, it did not alter the price level. At the same time, it did not prevent private import of Gold and large volume of it went into personal consumption or was hoarded (Tomlinson, 1979).

3. WORLD WAR- I AND THE CURRENCY CRISIS

Immediately after World War-I the gold exchange standard faced a serious crisis and confidence in the Rupee started to erode. Great Britain's post war efforts were to stabilize the global financial health and its financial relationship with the United States of America. The attempt to study the Indian perspective in isolation during the global crisis only places limitations on the understanding of the global interwar monetary reforms and stabilization plans attempted by the British. The British India had excessive appetite for Gold and during 1914-1919 alone she absorbed over 1/4th of the total Gold output despite restrictions. The substantial portion of trade surplus was converted into security bills and it grew steadily but such huge security holdings in sterling had eroded the confidence of Indians in the local currency and increasingly Indian households held their savings in gold and silver. During the war time, restrictions were imposed on import of Gold and Silver which slowly turned the Indians towards currency notes. But the demand for silver rupees did not subside to the expected levels and at one point in time convertibility became the critical financial problem (Gallagher and Seal, 1981).

The problem was no more an isolated financial trouble but required combined effort from America and Britain to iron the issue out. The British authorities on the one hand were satisfied that the growing demand for silver could prevent the Gold flow into India. It was apprehended that the demonetization of silver would flush out inferior silver metals from India and at the same time imposing Gold restriction had the potential to trigger another political and financial turmoil. Lionel Abraham, a veteran official in the India Office in London described the restriction of gold and silver demonetization attempts as 'Sin against Civilization'. The gold demand for Indian households was deferred after the Pittman Act was passed which enabled the US to export around 150 million ounces of Silver to India (Keynes, 1913). The two important committees which looked into the issue of monetary system were the Fowler Committee and the Babbington-Smith Committee

3.1 FOWLER COMMITTEE

The value of silver was eroding faster against gold, which led to decline in rupee value against the gold based currencies. British India had been importing about one fourth of the global silver production to meet its currency requirements. In 1892, the government ordered the Indian mints to stop the silver currency processing, and the Fowler committee recommended fixing the exchange rate at 15 rupees per British Sovereign. The Committee also drew attention of the government towards inadequate banking facilities and discount rate fluctuations. The Committee recommended for a Central bank to carry out the regulations more effectively and to expand and contract the supply of capital in times of pressure and slackness (Brunyate, 1926).

3.2 BABBINGTON-SMITH COMMITTEE

The Babbington- Smith committee examined the impact of war on the Indian Currency system. The committee primarily looked into the issue of probable gold flows into India, because the imperial interest was to prevent any undue gold drain into India which in turn would threaten Britain's ability to meet the trade balance issues with the US and various other countries. Cokayne, the Governor of the Bank of England stressed that any form of gold drain into India would raise the interest rate world over and also worsen the deflation in Europe. He recommended a total ban on gold import to India. The Government back in India was aware that any such drastic move would heighten the agitation as Nationalists were already revolting against the domination of British priorities in determining the Indian Financial System (Ambirajan, 1978).

The committee decided to revalue the rupee at a higher rate as it was believed that in India silver rupees were preferred over currency notes and it indirectly denoted the higher appetite for gold as well. Once the revaluation was done, convertibility could be achieved thus the demand for gold would be deferred. Though the imperial interest was to manage the currency problem without allowing gold inflow into India, it was evident from the discussion between India office and Treasury officials that the convertibility argument was relegated and the Inflation argument was projected instead. One dissent note came from Keynes that allowing gold flow into India would have had an anti-inflationary effect worldwide. His view was however not appreciated by the committee. The committee was in favor of high exchange rate and convertibility as it would preserve the role of Silver and prevent inflow of Gold. The high prices would reduce purchase by manufacturers and in turn the store value of Silver would increase. The committee was also of the view that by ensuring convertibility the choice of private savings would tilt towards non-gold assets. The British adopted a monetary policy based on the committee report and revaluation of rupee was done whenever the silver price rose (Coffman, 2010).

3.3 THE COUNTER- CYCLICAL ROLE OF BRITISH INDIA

Britain was keen to reconstruct her monetary system to the Sterling-Gold standard of the Pre-War level. To contain the post war political and social problems, it resorted to expansionist policies which affected the Gold-sterling ratio and deepened the domestic inflation. They persuaded US also to adopt expansionist policies to keep the inflation rate more or less at their level otherwise it warranted gold export to the US by Britain. The other option was to raise the Bank rate, but it was strongly opposed by the cabinet. The US was also aware of the benefits that Britain would derive in case of expansionary policies pursued in their country. Britain successfully rolled out an anti-inflationary package in India based on the Babbington-Smith Committee report, but they could not secure the cooperation of the US on this issue. This was the insight of Keynes that India performed a counter cyclical role in the world economy. After some time rupee started to fall, the Indian Government agreed to sell Gold reserve holdings in the domestic market to bring down the price of Gold so that the Gold demand could be met without much strain on the world market. This resulted in the immediate pick up in Gold sales in the domestic market and import fell and India emerged as a net exporter of Gold in 1921 (Gupta, 2002).

4. THE GREAT DEPRESSION AND RATIO CONTROVERSY

In 1925, the Sterling-Rupee ratio was fixed at £1: Rs 18 and it remained for the next one decade at this level. The depression across the world and the fall in commodity prices affected the demand for Indian staples in the British market which in turn depressed the internal prices. The discussion on major reforms to transfer the monetary control to an elected assembly aggravated the sentiments of investors and overseas rupee holders. They feared that the devaluation of Indian rupee was imminent and that also put pressure on the exchange rate. The options before the British Government were either build confidence in the future Indian monetary management or devalue the rupee to increase the competitiveness of Indian goods. The devaluation required additional revenue support from the British treasury as there was a commitment on annual home charges remittances and the debt service obligations also piled up by that time. The sterling public debt and the home charges were about £350million and £30 million respectively and the same had to be remitted to London annually. The priority of the British government was to ensure that the remittances were made annually without default. In case of a devaluation of the Rupee, the Government of India had to raise additional revenue or borrow to meet the commitment on sterling remittances and the other alternative was the shipping of Gold or Silver to be sold in London (Mukherjee, 1992).

The Indian political sentiment was in favor of full gold Standard and to live up to this expectation, the gold reserve had to be built up but the demand for silver in the world market was also low so both these options seemed politically and financially unacceptable. The remittance to be made from the reserve was considered to be a cash transfer affecting the money supply in India. Any contraction of money supply would definitely strain the central budget and the interest rate. All the options thus had the potential for a spiraling effect at home as well in London. The political situation was in turmoil towards the end of 1929; the colonial government was accused of pursuing monetary policies to advance its interest. These conflicts and frictions occurred at the time of a greater depression. The deteriorating political situation aggravated the flow of capital outside India. By the beginning of 1930, the Rupee Sterling ratio was clearly at risk. The government of India had to meet the remittances through the currency reserve. The inflated prices and loose money available for speculation is thought to have created the situation of deficit. The lower interest rate facilitated the cheap borrowing in India for its exports and exchange of sterling at a fixed rate later. But contraction of money supply could only aggravate the situation further by affecting land revenue, income tax and customs duty. Alternatively increasing the currency supply by way of issuing treasury bills could put the rupee exchange at risk (Mathur, 1988).

The political agitation civil disobedience caused the collapse of Indian sterling loan stock in London. The Indian office and the treasury together exerted pressure on the Secretary of State and succeeded in getting £50million credit to ease the remittance problem, the Chancellor of the Exchequer refused to consider any such proposal to transfer the burden on to the shoulders of British Taxpayers. As the proposal was turned down, the Treasury recommended to India office the devaluation of Indian Rupee without the support of the British commitment. But strangely the British Prime minister supported the idea of drawing credit as against the horrible consequences in the event of devaluation. The problem got aggravated, the flow of capital out of India became heavy and the prospects for any new foreign loan became dismal. The exhaustion of reserve currency became imminent and default on commitment appeared inevitable. The officials at the India office London and the British policy makers attempted only to avoid further deterioration of Indian economy but had no intention of either mitigating or preventing the agony caused by depression. They began to demand the shipping of gold to London.

A Large amount of gold was shipped from India and sold in London. During 1931 to 1934, Rs 1893 million worth of gold was exported and the flow of gold continued for some more time. The bulk of gold export came from private savings of the Indian Population. The depreciation of Sterling made gold selling in London profitable and this probably caused easy movement of Gold from India to London. The outflow of Gold enabled the Government of India to meet the remittances and all its commitment in London. England and British India had different monetary standards and the risk was accentuated by the depreciation of silver and therefore the exchange rate represented a key factor in the risky financial environment. The question of monetary link between Sterling and rupee and the financial relationship between Britain and India were altered and saw a different dimension during 1900-1930 as the issues were rattled and dodged for nearly three decades by the India office at London and by the British Policy makers. The Royal commission on Indian currency and Finance was set up in 1920 recommended the creation of a Central Bank in 1926, but owing to differences and disagreements the idea was withdrawn. The guidelines presented by Dr Ambedkar to the Hilton Young Commission (also known as Royal Commission on Indian Currency and Finance) based on his research entitled the Problem of the Rupee – Its Origin and Its Solution were also taken into account for developing a framework for the Central banking system. The Reserve Bank finally came into existence after the enactment of 1935 Government of India Act (Mukherjee, 1992).

5. CONCLUSION

The Council bill system though prevented the flow of Gold into India effectively but at the same time such mechanisms did nothing to alter the price levels during that period. A large volume of Gold was imported for private consumption and a major part of it was hoarded and it was not added to the circulation of money. During the time of the great depression, when the commodity prices were tumbling down across the world, our nationalists agitated for the devaluation of Indian currency to provide impetus to export. As such all the countries were facing severe depression at that time, hence the demand for Indian goods could not have arisen. During the Pre-war period, British India had seen substantial growth and investment but World War I and Great depression did aggravate the financial stability across the world and the problem of the Indian currency should be viewed in a wider context not in isolation. The British Government at one point in time feared that the devaluation of the Indian currency and payment default by the Indian Government would crash the empires pound and financial reputation. After the crisis was over the concern of the foreign holders of rupees was buttressed by providing sufficient safeguards in the constitutional reforms enacted in the year 1935 and led to the establishment of a non-political Reserve Bank to act as a Central bank in India.

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Rural Electrification and Its Impact on Households' Welfare

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Abstract
Electricity is the key input for urban and rural development which directly effects households' welfare in micro-level. Least developed countries policy focus on electrifying rural area through off-grid electricity because of high cost in connecting remote areas to national grid. This research estimates the welfare effects of Shorabak small hydropower in Fayzabad city of Badakhshan province, considering the wellbeing of residences in Taliqan city of Takhar provice that obtained from imported electricity from Tajikistan. The dependent variables of education, saving, health, employment, information and environment used as determinant of welfare in linear regression models. Residences of Fayzabad and Taliqan cities constituted the target population, who interviewed through 400 questionnaire using purposive samplings. For the purpose of analysis, regression models run in SPSS version 25. It was found that full access to electricity in Taliqan city positively changed study hours, saving via cheap per kW fee, decreased illness caused by utilizing wood, fuel for cooking and heating purposes. Furthermore, the level of information increased because of access to media particularly TV. A positive notion seen in keeping environment green by removing wood in households as result of using electricity instead. Generally the findings show, by Shorabak hydropower plant inauguration which is 90% completed the same welfare increase will be felt in Fayzabad city as well.

Keywords: Comparison Method, Rural Electrification, Welfare, Rural Electrification and Quantitative Data

Introduction

Afghanistan is a least developed country, located in central Asia. Most of its land is surrounded by mountains which made it water resource abundant country. From hydro-geographical point of view, Afghanistan water resources divided in to three ground water basins of great southern basin, central highland basin and Amu darya basin. These resources are located in south, central and north part of the country which at the same time, they are surveyed for electricity plants as well (Alim, 2006). Three decades of war left Afghanistan behind, therefore a weak political and unstable economics situation caused not to have regular updated information regarding the country's natural resources. A joint survey conducted by international partners and ministry of water shows, Afghanistan has 150000 million m3 snow and 30000 million m3 natural water resources (Aini, 2007). While only one-third of its resources manages and the remaining water drain off in to the neighboring countries, where it efficiently uses to irrigation, energy production and urban sanitation system. Meanwhile due to untreated water resources, Afghanistan normally faces with draughts and makes the agriculture less productive (Habib, 2014). Despite of being natural water resource-abundant country that flows from its high mountains in central and northeastern part of the county, Afghanistan still imports its deficit electricity from neighboring countries (Wright, 2012). Afghanistan energy production capacity is approximately estimated 318 GW only from hydropower production and the remaining opportunities are in solar, wind and coal energy (Mir Danish, 2017). Afghan government is planning to mobilize its water resources through designing strategies to manage surface water in to agriculture and energy production sectors (M.Christensen, 2014). But there are some obstacles to avoid government to implement new hydropower project as one of them is weak financial status that push government back from its strategic hydropower development plans. Some of hydropower projects are financed by international communities that helps government expand its service to urban and suburbs (McKinna, 2018). Fortunately, some serious steps put forward to manage surface and groundwater toward agriculture development and mainly hydropower production. The energy sector emphasized on turning Afghanistan from an energy-dependent country to an energy-exporting country (Danish, 2017). Recently some hydropower plants and water dams inaugurated or newly contracted with national and international organizations. For instance, Salma dam is one of the crucial development both in agriculture and hydropower sector that eventually inaugurated by president Ghani and India Prime Minister, Mr. Modi after many security treats. Beside agriculture irrigation, the dam totally produces 40 MW electricity that use for Herat province electrification (Roy-Chaudhury, 2016). Furthermore, many construction program are going on in different part of the country that includes, rehabilitation, establishment and energy transmission programs from neighboring countries. Among many national projects, Badakhshan province electrification is recently signed between Afghan government and Pamir Energy Company a branch of Agha Khan Foundation, serving in central Asia to electrify mountainous and remote part of countries. Although prior to the mentioned contract, Shorabak hydropower plant was under construction that funded by Germany, but it is only electrifies Fayzabad city capital of Badakhshan provinces. Currently Fayzabad residents are using from diesel generator electricity which is available from 5 to 10 PM with high fee of 29 Afn per kW, whereas the neighboring city of Taliqan residences in Takhar province are paying 3 to 5 Afn for per kW. Approximately all Takhar's districts including Taliqan city capital of province is electrified through imported electricity from neighboring country Tajikistan. Therefore, this research is designed to estimate the efficiency of Shorabak small hydropower plant through analysing the welfare composing variables, considering the wellbeing that beneficiaries gained as result of round the clock electricity in Takhar province.

Theoretical Background

Energy is the key input for urban and rural development which directly effects social welfare components. From daily activities to industrial production its role cannot be ignored (Christine. W. Njiru, 2018). Considering the rapid economic development and intense global competition, governments invest more on electricity production than any time else as reliable source of renewable energy. The case for suburbs and remote areas, particularly in least developed countries are differ than developing and developed country. Lack of infrastructure, decay system and financial instability are the main reasons why least developed countries still do not have national grid and their less electricity produced in old plants are concentrated in most populated urban cities (Anup Gurung, 2011). Considering the least developed countries' features, most of them use the decentralized off-grid hydropower production system to electrify their remote areas. The reason behind applying the decentralized electricity system is definitely rooted in high cost of grid system and following the weak financial status (Yah, 2017). At the same time, countries with less renewable electricity production use from environment polluting elements that are harmful for human and are strictly prohibited by international environment advocates, thus hydropower preferred because of less CO_2 emission (Prasad G. Senarath, 2017). Access to cheap hydropower diversified the welfare of the beneficiaries in many countries. For instance, Siraj and Khan assessed the impact of micro-hydropower plants in Pakistan and their findings shows that access to electricity with low cost improved the non-farm activities. Through income obtained from non-farm activities the whole welfare of the beneficiaries are positively changed (Khan, 2019). Meanwhile, The findings of a research in rural Chine indicates that, investment in renewable energy particularly, hydropower improved the rural households welfare (Jiashun Huang, 2020). Education is an important determinant of welfare, thus education development in households partially depends on full access to electricity. A research study conducted in Rwanda indicates, rural electrification through mini-grid electricity positively affected children's home study, particularly at night shifts (Gunther Bensch, 2020). Due to lack of electricity, rural residents use from environmental products like wood as daily fuel and other elements like plastic and animal dungs. This definitely causes forest degradation and air pollution. Therefore, access to renewable energy like hydroelectricity deemed to reduce environmental harms. Demissie and Somano evaluated the impact of hydropower plants on mitigating the indoor and environment pollution. Their findings postulates, after electricity implementation the kerosene for lightening purposes and wood for cooking in kitchen reduced from household fuel basket, meanwhile access to electricity enabled families to have clean water for agriculture mill products and green farms (Getnet Zewde Somano, 2016).

Part of household's income allocates to the health care expense. The round clock health services depends on many factors that one of them is electricity. The relation between electricity and health issues somehow evaluated indirectly in research of Kanagawa and Nakata. Their findings proves, access to electricity reduced wood, fuel and animal dungs from kitchen option for cooking that produces indoor pollution which eventually decrease health problems (Nakata, 2006).

Some research studies assessed the status of small hydropower plants in Afghanistan too. A governmental program that called NSP has invested on micro-hydropower plants all over the country based on local leader choice from package of rural development projects. Bhandari and his colleagues evaluated the impact of these projects in north-east of Afghanistan. Their result shows, small scale hydropower projects satisfied the rural residences, through lightening and business initiatives in Baghlan, Takhar and Badakhshan provinces (RamchandraBhandari, 2015).

Methodology

This research is quantitative and rely on primary data. In order to obtain correct information regarding the research topic from respondents, questionnaire used as only data collection tool. The questionnaire consisted of two part of demographic and explanatory variables. Furthermore, second-hand data and research information used as supportive in theoretical part. Residences of Taliqan and Fayzabad cities of Takhar and Badakhshan provinces constituted the target population. For the purpose of the sampling, 400 households selected, 200 in each cities using purposive sampling. This method of data collection includes respondents who have the features to be interview based on research scope. From 400 questionnaires, 370 of them were retrieved and the remaining excluded due to wrong responses or miss fillings.

In order to analysis the data collected via questionnaire, SPSS version 25 applied to run the linear regression models and tested the developed hypothesis in 95% confidence interval. This research study hypothesize some of the variables as following,
H1: Rural electrification positively impacts study time.
H2: Rural electrification increases households monthly saving.
H3: Electricity reduces illness that caused by pollution that come from burnings kerosene, wood, fuel or gas.
H4: Electricity is an environmental friendly substantial element.
H5: Rural electrification creates employment opportunities.
H6: Rural electrification increase social awareness of household members.

In addition the research aims to answer the below questions,

1. Does electricity helps households to change current living style?
2. Is the proposed electricity sufficient to the local needs?
3. To which extend, electricity supply will help schools and educational organizations to standardize their teaching method?
4. Does electricity fully provide facilities to the households to reduce daily kerosene, fuel and gas usage?

The developed hypothesis of the research will be tested using below linear regression models,

1. Education =β0+ β1age+ β2gender+β3marital status+ β4family member + β5family income+ β6electrcity expenses+ β7number of educated children+ β8studyhours+e
2. Saving= β0+ β1age +β2gender+β3marital status+ β4family member + β5family income+ β6power expenses +e

3. Health= β0+ β1age +β2gender+β3marital status+ β4family member+β5family income+ β6sickness+ β7numberofhospital visits+ β8electracityexpenses+e
4. Information= β0+ β1age +β2gender+ β3marital status+ β4family member+ β5family income+ β6electrcityexpenses+ β7TVhours+ β8social awareness+e
5. Employment= β0+ β1age +β2gender+β3marital status+ β4family member +β5power expenses+ β6workinkhours+ β7business time+ β8newemployment+e
6. Environment= β0+ β1age +β2gender+β3marital status+ β4family member+ β5familyincome+β6electracityexpenses+β7woodconsumption+β8gasconsumption+β9fuelconsumption + β10keroseneuse+ β11coalconsumption+e

For ease of matching coefficients and easy comparison between two cities, only explanatory variables used in tables as part of each linear regression.

Results

This research estimates the Shorabak small hydropower plant located in Fayzabad city of Badakhshan province which is not in service due to being under construction and the people are using from short time diesel generator electricity, While the Taliqan city that has already benefiting from full time transmitted electricity from neighboring country Tajikistan. Part of questionnaire was demographic questions asked respondents about age, gender, education and so on. Below table assessed the respondents' from gender point of view.

Table 1: Gender composition of the respondents in two cities

Gender	Frequency	Percentage
Male	265	71.6
Female	105	28.37
Total	370	100

Source: (field survey 2019-2020)

Age of respondents were among demographic variables. Table 2 shows participants' age who joined field interview in Takhar and Fayzabad.

Table 2: Gender composition of the respondents in two cities

Age Category	Frequency	Percentage	Cumulative Percentage
18-25	120	32.4	32.4
25-35	138	37.3	69.7
35-45	87	23.5	93.2
45-55	18	4.9	98.1
55-65	7	1.9	100

Source: (field survey 2019-2020)

Education considered to be the key demographic variable, because respondents' level of Education indicates how they correctly understood the scope of the study that designed in questionnaire.

Table 3: Interviewees level of education

Education Degree	**Frequency**	**Percentage**
Primary school	42	11.35
Secondary school	54	14.6
High school	91	24.6
Bachelor	145	39.2
Master	38	10.27
Total		

Source: (field survey 2019-2020)

Explanatory variables results

The core regression analysis of the research concentrates on models that applied on two cities data. Indeed, it is kind of comparison between two cities data to find out whether the program intervention changed the welfare of the beneficiaries.

Fayzabad City of Badakhshan province

As earlier mentioned Fayzabad inhabitants are living partially without national grid-electricity. The only electricity supplying source is the diesel generators producing per kW 29 Afn, while the neighboring province is paying 3 to 5 Afn per kW for imported electricity from Tajikistan, therefore linear regression of education run to assess the contribution of electricity to the education development.

Table 4: Regression analysis of electricity effects on education

Model	**Unstandardized Beta**	**Coefficient Std.Error**	**Standard Coefficient Beta**	**t**	**Sig**	**Hypothesis**
Constant	2.939	460		6.389	.000	
Family No	.021	024	.067	.851	.396	
Income	.099	001	.083	1.069	.287	
Study Hour	-.003	.019	.011	-.138	.890	Rejected
Expense	.21	.002	-.048	-.619	.537	

Dependent Variable: Education

Easy and cheap access to electricity improves the income generating activities and increases the households saving through paying less amount of their monthly income for electricity fee.

Table 5: impact of electricity on households monthly saving

	Unstandardized Beta	**Coefficient Std.Error**	**Standard Coefficient Beta**	**t**	**Sig**	**Hypothesis**
Constant	-103.349	1761.774		-.059	.953	
Income	56.971	85.838	.046	.664	.508	Rejected
Education	265.630	325.184	.053	.817	.415	
Expense	.160	.152	.070	1.058	.292	

Dependent Variable: Saving

Households' health problem causes from using polluting fuel for cooking, heating and lightening purposes, therefore round clock electricity reduces health problems.

Table 6: Health effect of access to electricity

	Unstandardized Beta	Coefficient Std.Error	Standard Coefficient Beta	t	Sig	Hypothesis
(Constant)	2.311	.558		4.139	.000	
Education	-.078	.079	-.077	-.992	.323	
Expense	2.655E-5	.000	.056	.718	.474	
Illness	.004	.004	.069	-.867	.387	Rejected

Dependent Variable: Health

There is a connection between utilizing fuel and environment. People in remote areas of Afghanistan are living in poverty with less access to primary facilities, thus the only way to overcome the cooking and heating problems is using wood and other environmental element.

Table 7: Environmental impact of access to electricity

	Unstandardized Beta	Coefficient Std.Error	Standard Coefficient Beta	t	Sig	Hypothesis
(Constant)	116.931	39.068		2.993	.003	
Expense	-13.016	5.777	.100	-2.253	.026	
Wood	1.351	1.435	.041	.942	.348	
Gas	.001	.003	.013	.280	.779	
Fuel	.607	.032	.825	18.76	.000	Accept
Kerosene	-.220	.118	.086	-1.854	.066	Reject
Coal	-.417	.594	.031	-.702	.484	Reject

Dependent Variable: Environment

Electricity boost the income-generating initiatives through motivating SMEs in rural areas that indirectly creates job for rural residences.

Table 8: Effect of electricity of employment.

	Unstandardized Beta	Coefficient Std.Error	Standard Coefficient Beta	t	Sig	Hypothesis
(Constant)	55.648	8.671		6.418	.000	
Expense	.000	.000	.216	2.890	.004	
Working hours	.050	.066	.057	.764	.446	Rejected

Dependent Variable: Employment

Technology development, particularly in media and information section made the media facilities accessible to even low-income families. Utilizing such media facilities definitely needs for electricity which could alter the living condition of beneficiaries.

Table 9: Effect of electricity on household-level of information

	Unstandardized Beta	Coefficient Std.Error	Standard Coefficient Beta	t	Sig	Hypothesis
Constant	1.448	3.689		.392	.695	
Family income	.017	.153	.009	.114	.909	
Expense	3.562E-5	.000	.092	1.16	.247	
TV hours	.000	.000	.039	.498	.619	Rejected
Social Awareness	-.056	.027	.103	-2.04	.042	Accepted

Dependent Variable: Information

Taliqan City of Takhar province

The second phase of analysis is to apply the same regression model on data gained from Taliqan city, which helps to match the coefficients and find how the program intervention helps beneficiaries. Taliqan city residence has full-time access to electricity imports from Tajikistan and per kW electricity fee is between 2 to 5 Afn. The cost interval increases as the number of kW usage increases. The following tables show the result of the linear regression analysis on Taliqan respondents' data gathered via questionnaire.

Table 10: Regression analysis of electricity effects on education

	Unstandardized Beta	Coefficient Std.Error	Standard Coefficient Beta	t	Sig	Hypothesis
Constant	.296	1.168		.254	.800	
Family No	.409	.043	.582	9.48	.000	
Income	-4.605E-5	.000	-.035	-.574	.567	
Study Hour	.002	.008	.017	.293	.770	Rejected
Expense	-.023	.033	-.042	-.708	.480	

Dependent Variable: Education

Table 11: impact of electricity on households monthly saving

	Unstandardized Beta	Coefficient Std.Error	Standard Coefficient Beta	t	Sig	Hypothesis
Constant	1.967	1790.695		.001	.999	
Income	.160	.020	.524	7.850	.012	Accepted
Education	.108	.017	.417	6.25	.000	
Expense	.132	.155	.056	.853	.395	

Dependent Variable: Saving

Table 12: Health effect of access to electricity

	Unstandardized Beta	Coefficient Std.Error	Standard Coefficient Beta	t	Sig	Hypothesis
Constant	1.900	.523		3.63	.000	
Education	.055	.022	.189	2.50	.013	
Expense	-9.538E-6	.000	-.157	-2.10	.037	
Illness	31.833	15.430	.094	2.063	.041	Accepted

Dependent Variable: Saving

Table 13: Effect of electricity on household-level of information

	Unstandardized Beta	Coefficient Std.Error	Standard Coefficient Beta	t	Sig	Hypothesis
Constant	60.267	7.696		7.83	.000	
Family income	.001	.001	.148	2.11	.035	
Expense	-.292	.210	-.095	-1.38	.167	
TV hours	.199	.222	.062	.896	.372	Rejected
Social Awareness	.377	201	145	1.874	.063	Rejected

Dependent Variable: Information

Table 14: Effect of electricity of employment.

	Unstandardized Beta	Coefficient Std.Error	Standard Coefficient Beta	t	Sig	Hypothesis
Constant	1.562	.188		8.30	.000	
Expense	1.742E-6	.000	.009	.119	.905	
Working hours	1.683	1.359	.091	1.238	.217	Rejected

Dependent Variable: Employment

Table 15: Environmental impact of access to electricity

	Unstandardized Beta	Coefficient Std.Error	Standard Coefficient Beta	t	Sig	Hypothesis
Constant	-.887	2.539		-.350	.727	
Expense	.000	.000	-.076	-1.12	.260	
Wood	-.003	.005	-.070	-.606	.545	Rejected

Gas	.004	.004	.105	.894	.373	Rejected
Fuel	.008	.032	.017	.246	.806	Rejected
Kerosene	.221	.040	.372	5.57	.000	Accepted
Coal	.478	.231	.174	2.067	.040	Accepted

Dependent Variable: Environment

Discussion

This research assessed the efficiency of electricity on household welfare. Households welfare analyzed through education, saving, education, employment, information and environment. Since the assessment method is comparison between two coefficients of the same variable, therefore it was found residence of Fayzabad city coefficient for electricity impact of study hour was 0.011, while the same variables coefficient in Taliqan city is 0.017. Although this relation is statistically rejected but implies full access to electricity improves the study hours, because there is more free time for kids and elder of the families to arrange their studying at night in Taliqan city rather than Fayzabad. Meanwhile educational institution are in better situation too as result using technology during the day that operates by electricity. Following the second linear model focused on saving effects of electricity, it was found that the income coefficient among Fayzabad residence was 0.046, while the same coefficient in Taliqan city is much higher 0.546 and statistically accepted in 0.05 p-values. The reason behind this finding is huge discrepancies between per kW fee in two cities. It clear households in Fayzabad city pays 29 Afn per kW more than households in Taliqan who pays 3-5 Afn per kW. The difference between fees could be a good determinant of saving in Taliqan.

The factors of health problems are multi-faceted and polluting element could be one of them. Households with less access to electricity uses wool, fuel and animal dung for cooking, heating and lightening purpose. In this research it was deemed that access to electricity could facilitate households' kitchen with electrical equipment and avoid from using natural aforementioned elements as illness factors. The result shows, residences of Fayzabad city still use wool, gas and fuel for indoor cooking, heating and lightening purposes with 0.056. In contrary, households in Taliqan city are much better with low level of sickness as result of less polluted homes with 0.094 coefficient. The finding implies access to electricity replace traditional kitchen and lightening tools to modern facilities like stove, boiler, oven, microwave and so on, which reduce any kind of indoor pollution. Furthermore the relation proved statistically as well.

A meaningful relation exist between environment, electricity and health in way that concentrating on wood, fuel and coal for indoor purpose increases forest degradation. In this research a connection build between access to electricity and green environment. Low access to electricity could motivate people to collect environmental resources like trees' wood and use more fuel on daily bases. The finding of this research nicely proves that residences of Fayzabad city use more fuel with coefficient of 0.825, whereas the same variable shows 0.017. This result come from the reality of the low cost electricity decreased the environmental polluting factors at least like fuel. It approved practically by many studies that electrifying rural areas boost working time and increase employment. This research somehow reached to the same finding. The result of employment model in Fayzabad city show 0.053 coefficient against the coefficient in Taliqan city 0.093. Electricity naturally facilitate the opportunity of business at night shifts and new market initiatives which seen in Taliqan city, but as result of high electricity cost, people cannot effort to use in for their income generating activities in Fayzabad.

Households' level of information measured via hours invested for watching TV and level of social awareness through media. It was found, hours for watching TV has 0.039 coefficient in Fayzabad, while it is 0.062 in Taliqan city.

Conclusion

This research through quantitative approach assessed the welfare of electricity beneficiaries in two cities of Fayzabad in Badakhshan and Taliqan in Takhar provinces. Generally, households welfare measured via education, saving, health, information, environment and employment. Residence of Fayzabad are using from diesel generator electricity, while Taliqan city electrified via imported electricity from Tajikistan. The main aim of this research was to estimate the Shorabak small hydro-power welfare impact which is under construction and technically 90% completed in Fayzabad city. It was revealed by the Shorabak hydropower plant inauguration, a huge change will be seen in households' welfare in terms of increase in study hours, saving, health, environment, employment and information. It will definitely change the life in Fayzabad city as well, because access to electricity alters the life of beneficiaries as it happened in Taliqan city. Furthermore it revealed that full time electricity increase educational performance through supply modern services via technology and changed the traditional life to modern which seems in kitchen and home equipment like freezer, boiler, stove and so on.

Policy implication

This research suggests, government should invest in local off-grid hydropower plants and electrify the remote area by their own local resources, this could reduce national electricity dependence on import and improves the living standard in rural areas for long term.

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The Contribution of Crafts in Improving the Touristique Image of Essaouira: The Case of Marquetry

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Abstract
In order to enhance tourism in Morocco, the 2020 vision is concentrating on an integrated and a proactive approach to national land-use planning. Eight territories have been set up, and each one has a positioning that the ministry of tourism plans to promote. Essaouira, which is a part of Marrakech Atlantic territory, is hence, presented as a destination that embodies the art of living. Namely, the marquetry, which is reflecting cultural and artistic identity has played a key role in fostering the touristic image of Essaouira. However, this role is not well highlighted and Essaouira's marquetry is encountering several obstacles that need to be fixed so as to improve this craft, which is the symbol of an entire province. The aim of this article is to evaluate the managerial practices of Essaouira's inlayers, in order to recommend suitable actions for the improvement of the city's marquetry sector and therefore contribute into the enhancement of its touristic image.

Keywords: Branding, Crafts, Destination’s Image, Essaouira, Marquetry, Tourism

1. Introduction

Essaouira is an outstanding touristic city. What makes it distinct from other Moroccan cities is clearly its history and culture inherited from different civilizations and ethnicities. Tourism sector plays a major role in the provincial economy. This sector is expected to play an important role in increasing foreign exchange resources, driving commercial and craft activities up to creating jobs. Natural, geographical and cultural assets make Essaouira, the capital of the Province, land of peace and one of the richest and most diverse host cities in the kingdom. Tourism in the city benefit from an important reception and accommodation facilities. The total accommodation capacity of Essaouira is 2608 rooms, composed of 5513 beds divided between hotels, guesthouses, tourist residences and hostels (Essaouira’s Province, 2019).

With a view to consolidate the positioning that the Ministry of Tourism (vision 2020) wants to attribute to the Marrakech Atlantic territory, and more specifically the site of Essaouira as a destination that embodies the art of living (Ministry of Tourism and Handicrafts "Department of Tourism", 2011), the actors of Essaouira's province have become part of a dynamic aimed at valuing local products, especially those of the marquetry, which constitutes the cultural and artistic identity of Essaouira. Since crafts are not only a collection of activities and products, but also constitutes a civilizational vector that carries the cultural and artistic ability of the people and the nation (Ministry of Tourism, Handicrafts and Social Economy "Department of Handicrafts and Social Economy", 2004). Furthermore, the marquetry, established in Essaouira in the 19th century by European renegades converted to Islam and known as laâllouj, constitutes a refined and prestigious specialty of Essaouira, of which it is in Morocco the undisputed capital (Sibony, 2004).

Actually, the marquetry is one of the key trades of Essaouira, its products represent 90% of the handcrafts exportation. It is an essential element in the social and solidarity Economy of the province of Essaouira given of the labor signed up, about more than 3500 craftsmen (Provincial Direction of Handicrafts in Essaouira, 2019).

Tourist are craving for local products from the marquetry, as they are looking for products with a high cultural content, that is representative of the Essaouira's tradition. However, the role these products play in the development of Essaouira as a touristic image is not well highlighted.

The question which comes then to light;
Are the managerial practices of Essaouira's inlayers relevant to improve the branding of the city's destination?

Five hypotheses emerged:

- H1: the supplying method of inlayers has a positive effect on the branding of Essaouira's destination.
- H2: the inlayers' production system plays a role in promoting the branding of Essaouira's destination.
- H3: human resources in marquetry positively influence the branding of Essaouira's destination.
- H4: financial resources in marquetry promote the branding of Essaouira's destination.
- H5: marketing mix practices of inlayers promote the branding of Essaouira's destination.

In fact, the aim of this article is to highlight the role of marquetry, as a craft product with a strong cultural content of which territorial anchorage is very strong, in the positioning and enhancement of Essaouira's touristic image.
To reach this goal, we have structured our work into four main parts:
In the first axis, we will address the conceptual framework of our research.
The second axis will be devoted for the presentation and analysis of the inventory of the Essaouira's marquetry.
The third axis will approach the discussion of the results in order to validate or reject our research hypotheses.
The last axis will treat the actions to be taken for upgrade Essaouira's marquetry. Therefore, the enhancement of the touristic image of the city.

2. Conceptual Approach of Destination Image

2.1 Destination Image: A Strategic Device for Tourism Valuation of the Territory

According to Lawson and Baud-Bovey (1977), a destination image is the expression of any objective and/or subjective knowledge that an individual or group may have of a particular place. For Hunt (1982), "all places have images - good, bad and indifferent - that must be identified, then either changed or exploited". In other words, the destination image brings together all the emotional perceptions and mental representations that people have in a specific place.

Today, competition between tourist destinations is fierce due to the increasing of international tourism. Thus, the enhancement of territories is necessary for public decision-makers and local authorities. In fact, each destination has an image, and some may have a stronger image than others. To develop a competitive position, it is important to create and convey a favorable image to potential tourists in targeted markets. Indeed, it represents the way for destinations to position themselves and achieve a sufficient degree of recognition (Di Marino, 2008). One of the most important marketing challenges arising from this situation is the need for an effective destination positioning strategy. To be successfully promoted in targeted markets, a destination must be positively differentiated from its competitors, or positively positioned, in the minds of consumers. A key element of this positioning process is the creation and management of a unique and attractive perception, or image, of the destination (Echtner & Ritchie, 1991).

The image of a destination is at the source of its attractiveness since the specificity of the territories and their identity constitute a major source of competitiveness (François, 2008). Therefore, it plays a crucial role in the choice of a destination by tourists. Hence the need to make destinations attractive by improving their image by using an effective promotion of their distinctive local qualities. As a result, local products are one of those qualities that must be enhanced, aiming to develop a favorable competitive position for a destination. The authenticity, tradition and originality of these local products are used as arguments to create and convey a favorable image for potential visitors.

2.2 The Dimensions of a Destination's Branding

The concept of destination brand is the result of tourists' perceptions of a destination, which affect their behavior towards it (Mantei, 2015). As a result, and given the fierce competition in the tourism sector, the branding of a destination is a crucial asset which stimulates the emotions of tourists (Marcotte, Bourdeau, & Leroux, 2011). Therefore to distinguish itself, the branding of a destination can be based on its most prestigious dimensions in order to enhance the unique and exceptional character of the territory so that it is appreciated by tourists.

Given the diversity of tourism derivatives that a destination encompasses, it would be appropriate to equate the name of a destination with that of a sign. Thus, the image of a destination is only an overlay of the different images conveyed by the various points of sale of hotels and tourist services hosted in this territory.

At this stage and according to Mankai (2005), it is necessary to apply the effect of the "identity prism" on the image of a destination so as to better identify a coherent branding. The latter concept proposed by Variot and Kapferer (1985), cited by Dourai (2001), is composed of six pillars that symbolize the territory potentiality of a sign, it is a judicious tool to identify the dimensions of the branding of a destination, namely:

- The physical.
- The personality.
- The relationship.
- The culture.
- The reflection.
- The mentalization.

The attractiveness of a territory is thus built on one or more dimensions. It is also strongly linked to the perception of local actors, the reputation of established companies, the workforce, the cultural environment, etc. Moreover, according to Nifle (2004), it is the cultural vocation of a territory that makes it a personalized, unique and attractive space. Given its own values, its identity, its character, its heritage and the know-how of its inhabitants, etc. In addition, tourists shape a close relationship with destinations and associate their images with the products they consume. Thus, they seek destinations characterized by specific products or services rich and captivating environmental sources (Moalla & Mollard, 2011).

Subsequently, it appears that the highlighting of the cultural dimension of the tourist destination of Essaouira, notably through the upgrade of the marquetry, will contribute to the enhancement of its image as a tourist brand. In fact, the handcrafts with strong cultural content and in particular the marquetry of Essaouira, given its strong territorial anchorage stem from an ancestral traditional know-how and represent a local cultural heritage, plays a crucial role in improving the attractiveness of Essaouira's tourist image. Hence, the need to analyze the state of the premises of the Essaouira's marquetry and thus propose the actions to be implemented to remedy the obstacles that hinder its development and, therefore, enhance the tourist image of Essaouira.

3. Empirical Study of the Managerial Practices of Essaouira's Inlayers

3.1 Study Methodology

In order to bring in answers to our problematic and propose actions to be implemented for the improvement of the Essaouira's marquetry and to contribute, therefore, to the enhancement of the city's tourist image, we carried out a qualitative survey among 54 Essaouira's inlayers. In our questionnaire we were based on the following axes:

- Supplying ;
- Production system ;
- Human resources ;
- Financial resources ;
- Marketing mix.

The processing of the questionnaire that we conducted led us to two analyzes:
- External Analysis.
- Internal Analysis.

3.2 Results of External and Internal Analysis

3.2.1 External Analysis

In order to conduct an external analysis of the craftsmen's environment, we studied the opportunities and threats of the components of this environment, namely: Legal and regulatory environment, demographic environment, natural environment, technological environment, the market and competition.
In the next table we have tried to summarize the results obtained:

Table 1. External analysis

	Opportunities	**Threats**
Legal and regulatory environment	- Law 112-12 to reform the status of cooperatives. - Law 133-12 relating to the distinctive signs of handicrafts. - Law Project 72-11 relating to Fair Trade.	Lack of a law prohibiting the export of raw thuja wood.
Demographic environment	- Morocco's population growth. - In 2014, the province of Essaouira had a population of 449 133. (High Commission for the Plan of Morocco, 2014)	
Natural environment	Morocco has 700 000 hectares, or 80% of the thuja forests in North Africa. In Essaouira's province, the area occupied by the thuja is about 96 000 ha. (Sibony, 2004)	- Overexploitation of the forests of Essaouira, drought. - Thuja grows very slowly. Indeed, it is only by more than 100 years that the tree reaches 10 to 15 meters and becomes usable. It should also be noted that the life expectancy of thuja is 400 years (El Jouali, 2003).
Technological environment	At first, the work was 100% manual, now the inlayers are increasingly using	Lack of an effective technological solution for drying wood.

	machines that represent a saving of time, effort and money.	
The market	- Strong potential of the internal market. - Customer increasingly sensitive to the Social and Solidarity Economy.	- Flooding the market with low-quality, low-priced items. - The anarchy of sales spaces. - Persistence of the informal.
Competition	Establishment of the THUYA D'ESSAOUIRA label.	- Competition is fierce in the domestic and international market. - Competition from other countries (China, Indonesia ...).

Source: Authors

Based on the results obtained, we notice that the components of the external environment related to inlayers in the city of Essaouira are generally favorable and promote the development of the latter.

3.2.2 Internal Analysis

In order to analyze the internal analysis of the inlayers' environment, we studied the strengths and weaknesses of their management practices.

The following table summarizes the results obtained:

Table 2. Internal analysis

	Forces	**Weaknesses**
Supplying	Know how to choose and process the raw materials.	The price of thuja wood is variable and relatively high.
Production system	- Skill and ancestral know-how of the inlayers. - The ability of craftsmen to adapt to customer demands.	- Often rudimentary equipment. - Sometimes inappropriate working conditions (narrow workshop space, pollution problems...).
Human resources	- An experienced and talented manpower (master craftsmen). - The training programs launched by the Department of Crafts. - Several craftsmen have benefited from the national literacy program.	- The disinterest of young people. - Illiteracy. - Lack of management competence and marketing techniques.
Financial resources	- Financial support from the department of crafts (technical equipment). - Financial support from the National Initiative for Human Development. - Financial support from the MAISON DE L'ARTISAN (exhibitions organized abroad).	- Difficulties in accessing bank loans for craftsmen - Lack of information on funding opportunities. - Shortage of financial resources.
Marketing mix	Product	
	- Diverse offer. - The reputation of the Essaouira's marquetry (reflects the cultural and artistic heritage of Essaouira).	- Lack of innovation and creativity. - Lack of information on the evolution of the sector, especially in new collections.
	Price	
	The products have good value for money.	- No price display.

	- No match in the prices of identical items.
Distribution	
Short distribution channels.	Weak structuring of the inlayers.
Communication	
The scorers benefit from the actions put in place by the MAISON DE L'ARTISAN.	- Very limited communication actions. - Low use of social networks and new technologies.

Source: Authors

In addition, we can conclude that the internal environment of inlayers represents more shortcomings than strengths especially in terms of supplying, production system and marketing mix.

4. Discussion:

The qualitative study of the relationship between managerial practices of inlayers and the tourist branding of the city of Essaouira is carried out through a questionnaire. this analysis yielded results which interpretation will allow us to validate or reject our research hypotheses.

According to the results of our questionnaire, we note that the external environment of inlayers presents significant opportunities for them, in particular:

- The significant potential of natural resources available in the province of Essaouira, especially with regard to thuja forests.
- Technological progress in favor of craftsman. In fact, inlayers are using more and more machines, especially for difficult tasks, which save time, effort and money.
- The great potential of the internal and external market.
- The Establishment of the THUYA D'ESSAOUIRA label which promotes local marquetry products and protects them against unfair competition.

In addition, inlayers suffer from several weaknesses which concerns their internal environment, especially in terms of supplying, the production system and the marketing mix. Thus, the inlayers are facing supplying difficulties because of the very high prices of raw materials, also, the use of rudimentary equipment and the often inappropriate working climate weakened the efficiency of their production system. As for the marketing mix practices, we notice on the one hand that the policy followed by inlayers lacks innovation and creativity. On the other hand, it doesn't have a price display and harmonization system, also, we note the weak structuring of the inlayers and the low use of social networks and new technologies. This shows that the supplying method, the Production system and the marketing mix practices adopted by the inlayers are too weak to improve the branding of Essaouira's destination.

Thus, we can reject the subsequent hypotheses:

- H1: the supplying method of inlayers has a positive effect on the branding of Essaouira's destination.
- H2: the inlayers' production system plays a role in promoting the branding of Essaouira's destination.
- H5: Marketing mix practices of inlayers promote the branding of Essaouira's destination.

Furthermore, the presence of talented and experienced master craftsmen benefiting from continuous training organized by the department of handicrafts results in manufacturing of innovative masterpieces reflecting, at the same time, the culture and tradition of Essaouira, which is, therefore, a factor for improving the branding of Essaouira's destination. Also, craftsman benefit from financial and technical support from the ministerial department of handicrafts, the MAISON DE L'ARTISAN and the National Initiative for Human Development in order to showcase their finished products intended for national and international tourists, and consequently improve the image of Essaouira's city. Based on these results, we can confirm the following hypotheses:

- H3: Human resources in marquetry positively influence the branding of Essaouira’s destination.
- H4: Financial resources in marquetry promote the branding of Essaouira’s destination.

5. Recommandations

In order to improve the role that marquetry plays in enhancing Essaouira's tourism image, some measures must be put in place for the upgrading of this profession, which constitutes Essaouira's cultural and artistic identity:

- Organization of tours / introductory marquetry workshops for tourists to discover the different stages of manufacture of marquetry products. This approach will allow tourists to acquire knowledge about the distinct products, while encouraging them to buy them.
- Creation of a festival to promote local products from Essaouira, especially those of the marquetry.
- Integration of marquetry workshops and points of sale within tourist circuits.
- Support, for the benefit of the scorers, in technical equipment to reduce waste during the various stages of wood processing and improve productivity.
- construction of infrastructure projects (craft complexes, craft villages, craft activity area including a center dedicated to the trades of thuja wood, etc.) will improve the productivity of craftsmen, upgrade their working conditions and promote the attractiveness of the province by the development of handcrafts and the creation of a tourism and commercial dynamic.
- Stimulation of innovation to improve and renew existing product lines while preserving authenticity related to Essaouira’s culture, civilization and lifestyle.
- Establishment of partnerships with designers to create new product collections and make them available free of charge to inlayers.
- Rationalization of the use of thuja wood by developing new techniques and combining it with other types of wood/materials.
- creation and promotion of marketing spaces for marquetry products, especially in rural areas, to increase the traffic of buyers (locals and tourists) while ensuring the improvement of the attractiveness of existing spaces.
- Setting up services that facilitate the act of purchase in all sales spaces.
- Support for inlayers to take advantage of the National Initiative for Human Development.
- Organization of open days to enhance marquetry, as the cultural and artistic identity of Essaouira, with young people and motivate them to learn the trade, and thus ensure the transmission of knowledge to future generations.
- Facilitate financing for inlayers (banks, micro credit, etc.).
- Creation of sales spaces for marquetry products in existing and future tourism infrastructure.
- Realization of promotion and communication campaigns on Essaouira’s marquetry, the different types of masterpieces made by inlayers, their ancestral and authentic know-how and the nobility of the wood used (thuja).
- Creation of a website presenting the heritage and historical dimension of the Essaouira's marquetry and the specificity of its products. So that to more easily inform potential customers (including domestic and foreign tourists).
- Organization of competitions with awards dedicated exclusively to Essaouira's inlayers in order to enhance the profession and encourage innovation.
- Organization of awareness days on standards and good practices in terms of hygiene and safety in the workplace and on pollution problems (waste, dust, etc.).
- Organization of a functional literacy program and continuing training sessions for inlayers to promote their technical and managerial skills.
- Promotion of Essaouira’s marquetry through the annual organization of national and international fairs, shows and exhibitions dedicated exclusively to marquetry products.
- Organization of communication days on funding opportunities and programs from which inlayers can benefit.
- Encourage inlayers to use social networks to promote their products.
- Launching of communication campaigns to sensitize the tourists about the impact of buying marquetry products on sustainable local development, given their strong territorial roots, and on improving the quality of life of inlayers.

6. Conclusions

Huge efforts have been made by the Ministry of Handicrafts, Social and Solidarity Economy to promote the Essaouira's marquetry. Nevertheless, the potential of this profession is not yet well exploited, given the crucial role it plays in enhancing Essaouira's tourism image as it reflects its cultural and artistic identity. Thus, the establishment of the THUYA D'ESSAOUIRA label will help to promote the marquetry products, to sustainably penetrate the target markets and to preserve this national heritage by protecting it from counterfeiting and unfair competition, and thus to make the appellation of Essaouira's thuja a geographical reference.

At the same time, it is necessary to make tourists aware of the different types of masterpieces made by the inlayers, highlighting their ancestral and authentic know-how, the nobility of the wood used (thuja), not to mention the role that these products play in sustainable local development given their strong territorial roots. In addition, the workshops and sales points of the marquetry must be integrated within the tourist circuits in order to strengthen the complementarity between the tourism and crafts sectors and to boost the marketing of its products.

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Conceptualizing the Role of Leadership Strategy in the Context of Strategic Management Process: A Review of Literature

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Abstract
A focus on the nature of strategic management process and its contribution to answer fundamental question of how firms achieve sustainable competitive advantage and improved performance through use of suitable leadership has led to organizational leaders formulating strategies through approaches that are systematic, rational as well as logical to strategic choices at corporate, business and functional levels. This has continued to be a major milestone in strategic management process in establishing a clear strategy that makes an organization competitive through suitable management of its workforce and application of strategies that are not easily imitated. This calls for an appropriate leadership strategy aimed at eliminating the gap in human capital that exists in various levels of strategic management process in an organization between the current and desired state of leadership in the future that will address the organization deficiencies by considering the right number of leaders required by the firm for the next at least 5 years with required leadership qualities, skills, behaviour, team capabilities and appropriate culture. This study has focused on a comprehensive review of conceptual and theoretical literature that brings out the role of leadership strategy in the context of strategic management process that leads to improved organizational performance. The concept of organizational capabilities and organization context were found to play a relevant role that mediate and moderate this relationship respectively. The study has proposed a suitable theoretical framework that links leadership strategy, organizational capabilities, and context and organization performance based on the identified gaps for guiding future research on leadership strategy. Six theories including; Pasmore model as lead theory, Path-Goal theory, Contingency theory, transformational leadership, Resource based view and Upper echelon theory underpinned the study in understanding the constructs. In summary, based on the reviewed literature, the study on leadership strategy is found critical for organization success and this calls for further testable empirical data and analysis to validate this claim.

Keywords: Leadership, Leadership Strategy, Organizational Capabilities, Organization Context, Organization Performance

1. Introduction

The strategic management literature apportions an important role to the construct of leadership in the entire strategic management process. Within the strategic management process, the role of leadership has been suggested in the phases of planning, making strategic choice and implementation. An important point of concern in focusing on leadership is the role it will play in contributing to a firm's performance. Jabbar (2017) posits that leadership serve as a link between the soul and the body of an organization by making decisions for the formulation of strategy and implementation. Porter (1990) observed that although leadership in many organizations is more of operational improvements and planning for deals, the leaders' role in organizations is still broader and far more important and should run across all the functional levels of strategy that include; corporate, business and functional to allow for organizational growth. Thus, this role of leadership needs to be clearly articulated across the various levels of strategy in a way that decision makers at each level can play a more active role. According to Pasmore (2014), most attention has been given to formulation of business strategies geared towards improvement in organization performance with little emphasis on what role leadership is expected to play only for the emphasis to appear at the implementation phase of strategic management. Leadership needs to be infused into the strategic management system across all the phases and levels of strategic management early enough in the process to position the system for undertaking choice and implementation of strategies to arrive at the desired level of performance. With recent initiatives to embed leadership much more into the strategic management process, the strategic management literature is beginning an important journey to ensure that the various levels and phases of strategic management are impacted upon by the construct of leadership at a theoretical and conceptual level such that benefits attained at these levels stand to address the concerns for enhanced performance in organizations derived from the deployment of leadership.

From the traditional perspective, leadership has been viewed from a management functions context touching mostly on use of leadership styles, power influence, and characteristics and more so directed towards realization of organizational objectives (Thomson & Strickland, 1993). However, Pasmore (2014) posits that although some attention from both theoretical and conceptual reviews have been given to these cited aspects of leadership from traditional perspectives, subsequent developments in strategic management literature show that these aspects foretell a higher potential ability than observed from the traditional perspectives. Thus, from history, leadership has developed into a great area of interest to many researchers globally through different theoretical approaches to explain leadership processes and other arising related complexities. The recent work cited earlier providing an avenue for anchoring leadership into the phases of strategic management process has suggested the role of leadership strategy during the phase of strategy implementation (Pasmore, 2014).

This calls for an appropriate integration of the construct of leadership strategy in strategic management process at corporate, business and functional levels so as to provide a better understanding on the role of leadership in the entire strategic management process. It is our view that such an integration will enhance the ability of scholarship to better explain the leadership-organization performance link during the strategic management process. Thus, building on earlier achievements in the strategic management, we identify the need to anchor leadership much more into the strategic management process.

2. Problem Statement

The concept of leadership strategy is relatively young in terms of its development and conceptualization. Little has been written about the concept at the conceptual and theoretical levels and the situation is worse at the empirical level. The concept has been traced to the work of Pasmore (2014) that provided the first set of a glimpse into its nature, role, focus and possible linkage with the strategic management process. Building on this original framework by Pasmore (2014), Muthimi & Kilika (2018) advanced this work by utilizing the original proposed components of leadership strategy to propose a theoretical framework that operationalized each dimension for deployment in organizations to bring about a phenomenon suitable to benefit organizations in the context of real life situations that confront application of the traditional leadership construct.

Out of these two works, we observe that the potential in deploying leadership strategy in a strategic management context is huge and the conversation needs to be sustained to not only inform theory through conceptualization but also impact on the manner the practice of strategic management is carried out not only during implementation but also at the earlier stages of formulation and choice. We particularly draw from two works of Barbuto (2002) and Golding (2007) that have given attention to strategy development process and the designated role of diverse stakeholders within an organizational system. Barbuto (2002) proposed several strategy development approaches that raise implications for some of the dimensions of leadership strategy in Pasmore's framework and later relied upon by Muthimi & Kilika in proposing a model for the deployment of leadership strategy as a strategic resource in organizations. Golding (2007) concurred with Barbuto in the proposal for different strategy development approaches that raise implications for the role of leadership not only at implementation but also at the formulation phases. We are of the view that these two perspectives brought about in the earlier works need consideration and integration into the continuing conversation on the discussion on leadership strategy.

Undertaking this theoretical work in the direction of expanding the scope of application of leadership strategy offers an opportunity for the scholarship to properly situate the construct of leadership strategy much more appropriately in the entire strategic management process. In addition, it further offers an opportunity to interrogate the diverse approaches to leadership that have informed the theories supporting the current theoretical understanding of leadership with a view to enhancing the application and contribution of the construct of leadership to the strategic management process. Thus, a comprehensive understanding is required alongside examination of relevant theoretical underpinnings that enhance this required understanding. Even though Muthimi & Kilika attempted to anchor in relevant theoretical underpinning, we are of the opinion that the expanded understanding and application calls for an expanded scope in the theoretical underpinnings and subsequent examination of extant empirical work.

The purpose of this paper therefore is to review extant literature on the construct of leadership strategy in conjunction with other relevant pieces of theoretical and conceptual literatures to provide an enriched framework on the nature of leadership strategy in a manner that benefits all phases of the strategic management process. The paper had three objectives: to review the extant conceptual, theoretical and empirical literatures on the constructs of leadership strategy and strategic management process, to identify aspects of the strategic management process suitable to operationalize the components of leadership strategy at all phases of strategic management and to describe a relevant theoretically grounded phenomenon brought about by the deployment of leadership strategy in the context of real life situations of organizations.

This paper is found to offer significant contribution in the field of general management and strategic studies by responding to several gaps that need scholarly attention. First, the paper seeks to identify and fill existing theoretical and empirical gaps regarding the construct of leadership strategy that have not been addressed by the previous works of Pasmore (2014) and Muthimi & Kilika (2018). Secondly, the paper seeks to address the needs of various stakeholders in the field of strategic management by offering a better understanding of the underlying construct of leadership strategy and its contribution to organizational performance in terms of acquisition of the right quantity of leaders needed by the organization, the desired leadership qualities during selection process, the needed skills and behaviours to drive the business strategy, the needed leadership capabilities of the selected leaders and the desired leadership culture. Thirdly, upon further empirical study and proof, the paper will contribute significantly to decision making on appropriate policies on good governance by various government entities, management strategists and practitioners and policy makers. Lastly, the scholars in the field of management, strategy and organizational studies will find a firm theoretical base on leadership strategy and organizational performance for building their future research for the purpose of replication and further proofs through empirical studies.

3. Conceptual Review

This section reviews the constructs of leadership strategy that form the basis of the study and how it interlinks with other constructs such as organizational capabilities, and organization context in creating value for enhanced organizational performance. A review of conceptual literature on the construct is carried out with a view to understanding its historical evolution concepts, meaning and components and the role it plays that guides the achievement of organization performance in the field of strategic management.

3.1 The concept of leadership

Leadership has been approached in the management literature as a function of management to offering direction. As a subset of the directing function, it has been closely associated with motivation of people within a system in pursuit of the long-term direction of an organization. Directing as a function of management is indicated to be a human factor process through which leaders instruct, guide and oversee performance of the subordinates to achieve organization predetermined goals. Various studies in management books have shown that directing function is the heart of strategic management process and plays a big role in initiating actions where subordinates understand their jobs and work according to laid instructions. Through this function, the leader is able to steer an organization in a way that guides and instructs subordinates on what to be done and how to perform it. It is also a means of motivating subordinates through provision of incentives or compensation, whether monetary or non-monetary, which serves as a "morale booster" to the subordinates to enable them give the best of their abilities that helps in growth of the organization. This is in line with Path-Goal theory of leadership that stipulates that leader's behaviour should exhibit directive, supportive, participative and achievement-oriented characteristics to motivate their subordinates to perform.

3.1.1 Nature of Leadership

Although leadership is a valuable phenomenon that has been simply defined as ability to influence and guide others to achieve a set objective, various scholars have dodged its definition despite entitling their books and journals with the word "leadership" (Yukl, 2002). Barker (2001) posited that leadership as a continuous process that reflects the sum total of a leader's performance based on some key characteristics of a leader and the condition in the environment. Kotter (1988) in his book entitled "The Leadership Factor" defined leadership as a process of moving a group of persons in a given direction that is genuinely in their long- term best interests and through means that are non-coercive. Wheatly (1994) directs more of his narratives to management in his book entitled "Leadership and the New Science" and less mentoring the word leadership outside the book title. According to Shelton (1997) in his book entitled "A new Paradigm of Leadership" places more emphasis on how to manage organizations and employees in order to achieve the set objectives but no definition of leadership is clearly provided. Thus, other scholarly journals have tended to follow similar lines of conventional thinking, Kostner (1994) in his book entitled "Visual Leadership" offers many valuable insights on management but communicates less on conventional thinking about leadership.

Historically, since the start of civilization, study of leaders and their leadership styles has been of great interest and is still an area of active inquiry. The extant literature shows that research in leadership has undergone metamorphosis over time since civilization with initial investigations focusing on competencies and personality traits among members of the organization taking centre stage in the mid twentieth century (Jenkins, 1947). According to Keith (2010) leadership is an old concept due to its evolution from the earliest manifestations in ancient societies, highlighting the beginning of leadership writings Plato, Sun Tzu and others. Burns (1978) asserts that although leadership is among most observed phenomenon, it is least understood and hence an area of active investigation on earth planet. Leadership has therefore been defined by many researchers basing on individual perspectives such as traits, behavior, influence, interaction patterns, role relationships, and occupation of administration office.

Even though the literature is rich on leadership, it is observable that questions continue being raised especially due to the role of leadership in the success of organizations. Given this state of the literature, there seems to be lack of clarity on how to situate and locate the evidence of the existence of leadership within organizational systems in view of the past conceptualizations of the construct. Is leadership a person, is it a position or an office. How is it exercised in an organizational system? How do we hold it accountable for organizational results? Thus, with lingering questions on what constitute leadership, where to trace it and how to link it to the success or failure of an organization, there is need for concerted effort in strategic management to expand the scope of the understanding of the construct of leadership as applied in organizational systems. Pasmore (2014) work responds to this existing gap and we suggest adoption of the approach adopted in his work focusing on leadership strategy to infuse a conceptualization that address the lingering questions touching on how to situate leadership in an organization.

From the above historical analysis, definitions and existing literature in strategic management, three observations on leadership are identified: First, leadership is a dynamic process whereby leaders have the power to cause an influence on their followers in a particular pattern that has developed over time and defined in various individual perspectives. Secondly, the historical buildup of evolution of leadership does not give clear indicators of success for the future of organizations. Thirdly, building and retaining good leadership for organizations is a major area of concern. This therefore calls for a need by organization leaders to re-focus their thinking on the construct of leadership strategy that entails dimensions of the quantity and quality of required leaders, required skills, behavior, capabilities and leadership culture that supports effective implementation of the business strategy.

3.2 Leadership Strategy

Although literature in strategic management has stressed on importance of leadership roles at strategy choice and formulation, implementation and evaluation, the concept of leadership strategy is yet to be integrated into mainstream literature (Pearce et al, 2012). Work done by Pasmore (2014) opened room for more interactions by researchers on the construct of leadership strategy by acknowledging the importance of leadership to the field of strategic management at all levels of strategy and the need for a strategy to drive the process effectively in organizations from strategic planning to strategic thinking perspectives- a particular way of thinking into the desired future for the organization. Although many studies in literature have focused on leadership styles and performance in aligning efforts made by members of the organization with the set goals, the many complex challenges, interactions and scenarios facing leaders must be put into consideration in decision making during strategy formulation and strategy implementation by focusing on thinking about understanding of leadership strategy.

3.2.1 Leadership strategy-meaning

In order to conceptualize the understanding of leadership strategy which stems from the term leadership, it is important that leadership is understood. Leadership has therefore been defined in many ways by various authors. According to Kouzes & Posner, (2007) leadership has been defined as a process that is dynamic whereby leaders may mobilize followers through engagements to perform extra ordinary things. Such practices may include leaders acting as role model, sharing vision, inspiring others to act through encouragement and sharing challenges of the process. Bartol & Martin, (1998) finds leadership as process of influencing others to achieve organizational objectives. Burns (1978) defines leadership as process of influencing followers to achieve intended objectives. An example is found in the book of exodus from the bible with Moses influencing the Israelites to leave Egypt for a better land flowing with milk and honey. Considering all related factors to definition of leadership and leadership being a dynamic dyadic process, has enabled leaders to get to understand and cause an influence on the followers by transcending from self-interest to greater thinking about the organization. This is realized by inspiring others through shared vision, motivating them, defining a reward system that is competitive and supporting higher level needs of the followers so as to achieve organizational goals through collective efforts.

From the above definitions, it is clear that leadership is a critical factor to consider in organization development and in quest to meeting achievement of the organization goals. However, it should be noted that in order to meet these expectations one requires a leadership strategy. Even though importance of a leadership strategy can be felt in organizations, extant literature has somehow remained silent on this construct. Leadership strategy has therefore been looked at in different perspectives. Day & Dragoni (2015) defined leadership strategy as a driving force behind any plan being put into action and description of its mode of operation for the near and more distant future. These include dimensions such as; formulating the vision for the organization, recruiting people to realize the vision, set goals and objectives and finally creating a detailed plan of action with measurable parameters.

The earlier discussion on leadership raised some issues regarding how leadership has been understood and practically interpreted in terms of its contribution to organizational outcomes. In addressing the concern on how to situate leadership within a system, Pasmore (2014) found that what determines the success of an organization is the ability of leaders to pull together both the informal and formal leadership to achieve the set organizational objectives and hence performance. It is our view that this ability to demonstrate the togetherness is what strategic management needs to lay emphasis on so as to project a corporate identity that is wholly supported by the entire organizational system. In considering the construct of leadership strategy, we suggest that there is need to demonstrate how this construct responds to basic attributes of strategic thinking that raise the need for a system orientation in pursuing strategic goals in organizations. Pearce and Robinson (2012) allude to this in their articulation of the concept of company mission and the role it is expected to play in providing a sense of unanimity of purpose among diverse organizational units.

Thus, in the attempt to present an understanding of leadership strategy, Pasmore (2014) first provides a list of the attributes of a good leadership strategy. Towards this, he proposed that a good leadership strategy as one that takes into consideration all factors that include; the quantity of expected leaders, the expected qualities of the leadership during the process of selection, the expected skills and behaviours that will enable achievement of the business strategy, leadership team capabilities and the expected leadership culture. According to Muthimi and Kilika (2018) the role of the leadership strategy is to provide a roadmap for an organization in a way that provides the direction for an organization to move into its future. It does so by analyzing the organization's present situation and the planned future state in terms of human resource requirements suitable to effectively drive the strategy formulated by an organization during the implementation phase. Thus, a well-planned leadership strategy put into account; the total expected number of leaders the organization need in its various segments for the next 5 to 10 years, the expected level of skills and behaviours as individuals and also as a team collectively and expected leadership culture to enable the organization achieve its intended goals and hence total success being sought.

This description so far advanced has limited its focus to the strategy implementation phase of the strategic management process. In rea life situation, though theoretically strategic management processes have been clustered into different activities, their undertaking invites a cyclical process in which both formulation and implementation activities take place at the same time. We find support for this in the literature where planning automatically leads to controlling and vise versa with activities specified for undertaking in each feeding into the processes of the other. Within this, we find the need for expanding the scope of understanding of leadership strategy to go beyond implementation and apply at the earlier stages of the strategic management process. Such a perspective finds support in strategic thinking where leadership in place is expected to embrace a futuristic orientation and carry out situational analysis of both internal and external contextual situations confronting the organization that strategists need to respond to.

The second point of focus given attention in understanding leadership strategy is what constitutes the strategy. This is necessary to further enhance the ability of organizational members to better situate the leadership in place as they understand their organization, where it is going and what their expected roles are. Pasmore proposed five dimensions as: The required quantity of leaders, the desired qualities of leadership, the skills and behaviours needed to implement the business strategy, the required collective leadership capabilities and the desired leadership culture in the organization. As opposed to other traditional practices of leadership, these proposals made by Pasmore on leadership strategy may be viewed as genuine concept of leadership that is open- minded, creative and visionary in response to social situations. This is in line with work done by (Badaracco, 2013) who also provided valuable leadership guidance to leaders operating in today's disruptive environment that have an effect on performance of the organization. Muthimi & Kilika (2018) in their work on leadership strategy and firm performance, found that inclusion of components of the construct of leadership strategy resulted into firm's improvement in articulating its business strategy, leadership capabilities and employees' level of performance. Despite these contributions, however, we find that little has been achieved so far in line with components of leadership strategy and its contribution to organizational performance. This is still an area of great concern due to uncertainties in the environment in which the organization operates and hence need for further research.

3.2.2 Components of Leadership strategy

Even though the extant literature is scanty on components of leadership strategy, there seem to be confusions in understanding the concepts as defined by various authors. Muthimi & Kilika (2018) found that leadership strategy focuses on the organization future and is based on analysis of its present state of the business and the direction of its strategic intent in terms of human resource development. The construct of leadership strategy therefore allows effective leadership to permeate at all functional levels and areas in an organization by identifying five components that organization leaders needs to focus on or consider for successful achievement of their strategic choices and future organization sustainability by ensuring there is to link between leadership strategy and business strategy. According to Ssekabuko et al (2014), the quality of leaders and their competencies in the organization can cause improvement on employee performance and this improvement leads to enhanced organizational performance. This also in agreement with work done by McNair et al (2011) who observed that leadership is an art rather than science that motivates teams or groups in achieving a given set goal. According to Pasmore (2014), these components in details include: (i) The quantity of leaders needed in the organization at current and projected future formal leadership positions as depicted by the organization structure in terms of the number, levels, functions, reporting relationships and business units, (ii) The qualities of leadership desired in selection process in terms of demographics, diversity, background and experience. The level of education is also desired quality in leadership selection though not considered by Pasmore (2014) and Muthimi & Kilika (2018) as a key component of leadership quality, (iii) The skills and behaviour needed to implement the business strategy and create a desired culture in terms of skills, competencies and knowledgebase, (iv) The collective leadership capabilities of leaders when acting together in groups and across boundaries to implement strategies, solve problems, responds to threats, adapt to change and support innovation. The ability to formulate strategies is a key leadership capability required by leaders even though not considered studies done by Pasmore (2014) and later by Muthimi and Kilika (2018), (v) The desired leadership culture that include leadership practices in use such as inter-functional collaboration, engagement of employees, accepting responsibility for outcomes, creating opportunities for others to lead, developing other leaders and learning how to learn.

Although these components of leadership strategy guides' leaders in organization in attaining their set up plans and gives an impetus of the strategic intent of the organization in terms of human skills and requirements, according to Muthimi & Kilika (2018), these component alone cannot work in isolation to achieve indented improved organization performance without due considerations of other constructs that either mediate or moderate the relationship link between leadership strategy and organization performance. In the paper, Organization capabilities and organization context have been found as constructs that mediate and moderate this relationship as seen in proposed theoretical model in fig 1.

3.3 Leadership strategy in the context of strategic management

In considering the strategic management process in the context of leadership strategy, an important question that needs to be addressed is that of how the leadership strategy can be infused into the strategic management process. We propose that through consideration of the various levels of strategy, we are able to find opportunities for the role of a leadership strategy. Thus we consider the characteristics of the various levels of strategy as decision making as well as strategy implementation units within an organization. A study done by Thomson, Perry & Miller (2007) examined strategy development at different levels of strategy in an organization involving different facets of the company strategy. The study established the three levels of strategy in an organization namely: corporate level, business level and functional level strategies.

3.3.1 *Corporate level strategy*

This level is what is described as the top management of the firm. It is vested with responsibility for ensuring there is business growth for the organization and correct alignment with its environment. This is achieved through setting of the organization's objectives, evaluating the organizational environment, setting of quantitative targets, carrying out performance analysis and formulating appropriate strategies for the organization (Ndeda, 2016). The kinds of decisions made are long term and organization wide that helps the organization focus to building up relevant competitive advantages against its competitors in the market. The key participants are the top management team that includes the Chief Executive Officers and Management Board members in the organization. Thus, Leadership here, is concerned with initiatives the organization uses to establish its business in different units and approaches the top management team pursue to achieve set strategies of the organization. It is at this level that the organization develops its vision and sets objectives to guide it in formulating strategies. According to Chandler (1962), strategy at the corporate aims to determine the long-term goals of an organization and sets up courses of action as well as resource allocation needed to carry out these goals. The leadership at this level provides a strong oversight function to ensure strategy formulation and implementation is undertaken effectively and efficiently to benefit all stakeholders of the organization. This is in line with work done by Omulaja & Emoia (2011) who argued that it is at the corporate levels of strategy that strategic position, strategic choices and strategy in action for an organization are set and planned.

In view of the decisions and application of techniques, we are of the opinion that these two offer a suitable avenue for the continued conversation on what role the diverse components of leadership strategy come to play. Thus, we propose that the components can apply as: quantity of leadership is required in the portfolio analysis to ensure adequate representation of the top management team members into each of the businesses a firm has invested in. At the top management, there will be need for a sufficient number of leaders to ensure each business is run in a way that the interests of management and key stakeholders are satisfied.

Even though empirical evidence seems to suggest that key quality of successful leadership have unique personal traits or characteristics that include visionary capacity and ability to cope with organizational dynamics, it is our view that the quality of leadership an organization has will be required in analysis of situation, data and options that will lead to success of strategic decisions being made at all levels of strategy. This is as a result of critical issues that needs to be addressed that affect the organization such as abreast of the changing environmental conditions and how the organization is responsive to these changes, developing an in-depth understanding of the major trends in the environment that affect the organization from a global view point and understanding the role played by leaders within the corporate culture as a result of varied leaders characteristics in terms of demographics, diversities, education and experience backgrounds (Hassan, 2019).

In addition to the right quantity and quality of leaders an organization may adopt in the interest of its management, the skills and behaviours required of these leaders will play a big role in enhancing organizational abilities to innovate, adapt to change, develop more talents and business acumen at both regional and global. It is our view that an organization will require leaders with the right work attitudes through appropriate selection options at all levels of strategy that will create a focused and effective development experiences to enhance desired behavioural competencies for all leaders within the organization hierarchy.

The other component of leadership strategy dimension that will enable organization to pursue its mission or purpose will be the collective capabilities of the leadership in formulating strategies that provide direction, demonstrate alignment and generate commitments to ensure compliance with required set of values, beliefs and actions within the organization (Pasmore, 2014). In terms of organizational effectiveness, we are of the opinion that these capabilities required by leaders when acting together will exhibit leadership style that is in conformity to the majority of the leaders in the organization that aim to enhance its effectiveness in terms of enhanced talent development, faster innovation to market, more responsiveness to customers.

Finally, the leadership culture dimension is another key aspect of leadership strategy that set up practices that are important and shared across the organization in terms of accepting shared responsibilities through employee engagement, enhancing team spirit and other system views that embrace opportunities that lead to business improvement by enabling organizations formulate strategies that exhibit degree of dependence, interdependence or independence among the business leaders. It is our view that this approach will not only enhance organization performance but will also eliminate the dangers of conflicts for the available scarce resources and reduce competition among the strategic business units within the organization.

From the characteristics of this level, we suggest that the leadership strategy will be required to play an important role in setting up both corporate objectives and corporate strategy that bring together and describes the organization's business concepts that will help and serve to build up the firm's relevant competitive advantages.

3.3.2 Business level strategy

Whereas the main purpose at the corporate level strategy is to make investment decisions, business level strategy focuses more on how the organization carry out its moves to attain the desired goals. Some studies in strategic management have attributed business strategy as a corporate intent scheme or a blue print of the entire business or set of competitive moves and actions that an organization may adopt to attract customers in the environment, strengthen its performance through successful competition while achieving desired goals. It is at this level of strategy that the vision and mission statements developed at the corporate level by the organization are converted into actionable strategies by middle level managers through use of appropriate tools such as SWOT (Strength, Weakness, Opportunities and Threat) analysis, Porter's generic and cost-leadership strategies.

Emerging from the discussion above, it is our opinion that the management of organization need to focus on the quantity and quality of leaders for each of its strategic business units since it is at this level that implementation of strategy is more focused by setting up of medium term strategies arising from the long-term strategies formulated at the corporate level strategy that match required leadership with resources at the business unit. Thus, we find that leadership at this level of strategy is more concerned with actions and approaches crafted to produce success performance in a specific business line in order to build a strong competitive advantage. It is at this level of strategy that he the leadership skills and behaviours will play a key role in propelling the organization to desired performance level through articulation of formulated strategies being implemented at the business unit. This is achieved through implementation of crafted strategies and monitoring developments and evaluating performances with corrective adjustments in line with actual performance and changing conditions in the environment arising from new opportunities and new ideas. It is at this level that managers focus consistently on set of values and beliefs in crafting responses to market scenarios and initiates actions to strengthen their market position. However, even though this agrees with Pasmore (2014) who asserts that leadership is paramount at implementation stage of strategic management process and therefore leadership strategy should be driven at this level of strategy, the roots for proper manifestation of leadership strategy exist at earlier stages than those espoused by Pasmore.

3.3.3 Functional level strategy

Functional level strategy involves decision making by functional leaders at the organization operational function level such as finance, marketing, production, human resource, research and development and any other functional areas. At this level, the leadership is more concerned with implementing organization plans formulated at the corporate levels into action assignments and ensuring that these assignments are executed in a manner that accomplishes the stated plans by providing individualized support and intellectual abilities to employees and clarifying performance expectations for the organization through appropriate effective communication. According to studies done by House (1971) and Fielder (1967), leadership at the functional level strategy are entrusted with responsibility of crafting appropriate functional strategies in line with the existing business and corporate strategies and therefore these leaders should develop leadership skills and behaviours that supports organization initiatives in achieving the longer term objectives that inspire, stimulate and instill a sense of purpose to employees as they see the big picture of the organization direction. Thus, it is our opinion that strategy implementation at this level is backed by matching of required quantity and quality of effective leadership in providing actions, approaches and practices needed in managing a particular business processes or key activities or functions within the business such as finance, marketing, procurement and human resources functional areas

3.3.4 Deployment of leadership strategy in organizations

Strategic decisions in organizations are considered as investments by those organizations due to the high volumes of economic resources they require as well their potential impact over the medium and long-term periods. An undertaking for an organization to implement a leadership strategy can be thought in the same light that it is an investment decision for a firm. However, in view of the concerns to management and investors, what is in it for the management to invest in a leadership strategy? We argue that leadership strategy brings in huge potential for an organization as a strategy that will enhance the organizations fitness in its changing environment and be a source of driving a firm's long-term desire of sustained performance. Thus, in leadership strategy we find contribution towards environmental response as well as the means to sustain performance. How this is attained becomes a subject for strategic thinkers to explore and explain.

Leadership strategy can be construed to be a type of resource that when deployed in an organization unleashes potential that will bring about outcomes that are beneficial to the organization in the context of its external context. In this line of reasoning, we note that (i) Leadership as a resource can be a source of sustaining long term performance that guarantees competitive advantage. This in itself implies some form of capability that the organization derives from the leadership strategy. (ii) The capability so derived will be responsible for sustaining the long-term performance expectations of the firm. (iii) The attained performance is achieved within the external context of a firm in line with realities derived from the complimentarily between RBV perspective on the one hand and RDT and institutional perspectives on the other.

Thus, we suggest in attempting to understand the role of leadership strategy in organizations and the phenomenon it brings about, scholarships need to consider what capabilities derive from leadership, the nature of performance and the situational developments that may condition the behavior exhibited by the deployed leadership strategy and its phenomenon. In this regard, the nexus between appropriate leadership strategy employed, the organizational capabilities in place, the consideration of the organizational context in which the organization operates and organizational performance cannot be over assumed due to the importance the construct of leadership plays in organizations success. According to Muthimi & Kilika (2018), the necessity of focusing on leadership strategy dimensions as a new shift in leadership in organizations cannot be underrated as key determinants of firm performance. In conclusion, the role played by the three levels of strategy at both formulation and implementation stages have been summed up as shown in Appendix 1 and 2:

3.4 Organizational capabilities

The concept of organizational capabilities in strategic management studies in recent times has been viewed with a lot of interests by various researchers as a major component of an organization strategy. Shoemaker & Amit (1993) found organizational capability as a means by which resources are deployed in an organization through effective leadership aimed to achieve a desired end. Thus, organizational capability is viewed as intangible resources that comprise of accumulated knowledge, bundle of skills and organizational routines. These observations and with reference to arguments raised in RBV theory that organizations are heterogeneous with bundle of resources having unique characteristics that are difficult to duplicate due to their valuability(increase in customers value), Rarity(competitors unable to tap them), inimitability(difficult for competitors to gain competitive parity) and non-substitutability(hard for competitors to copy), leaders should focus on use of their internal resources to maximize on derived benefits by identifying capabilities that gives an organization a competitive advantage over others.

In this regard, we find organizational capability a strategic resource within an organization and when tapped, give rise to two possibilities namely capabilities and competences that lead to sustainable performance. The unleashed capabilities and competencies when enacted into an organizational system that host the leadership as a base for sustaining the strategy, gives rise to improved superior performance. Thus, within a linear path of reasoning, we are of the opinion that the construct of organizational capabilities is relevant to this study since it enables leaders in the organization able to exploit all areas that give it a competitive advantage in order to develop appropriate strategies that enhance value to the customer.

Based on the literature discussed above, calls are emerging for firms to consider adoption of organizational capabilities as a viable strategic resource for guiding organization leadership in achieving set targets or goals, even though organizational problems still remain a continuous challenge. Extant literature in strategic management has also shown that organizational capabilities have played a critical role in helping organizations grow and gain advantages over others in a competitive environment by helping leaders focus on areas where they excel most. In this regard, we find that deployment of appropriate leadership strategy in an organization will help in growth of developed capabilities in specific perspectives that makes them valuable due to their tacit nature hence difficult to imitate and transfer. However, even though organization capabilities are rather stable since they have been developed over time and do not change rapidly giving an organization its distinctive competitive edge, this concept is still not yet internalized fully in organizations to enable leaders stay competitive and improve in their performance. According to Gerd (2009) organizations operates in an uncertain environment and to be competitive, leadership in these organization should develop capabilities and knowledge that will make them better leaders in dealing with the core organizational current and emerging new problems.

Muthimi & Kilika (2018) argued that identified employee empowerment, creativity, innovativeness and process improvement within an organization were critical indicators of organizational capabilities that give an organization a competitive advantage over others in a dynamic environment. This is in line with path-goal theory that stipulates that leaders motivate their followers in tasks by involving them in behaviours that result in worthwhile outcomes for the organization and in turn motivates the subordinates leading to improved organizational performance. Organizational capabilities can therefore be defined as process-oriented concept focusing on the business ability to meet stakeholders' demands and enable firms to deal with different types of problems effectively and hence improving in their performance. Dosi, Marengo and Faillo (2003) argue that organizations being unique entities do things differently and especially in solving organizational problems that may adversely affect their business continuity and performance. Thus, incorporation of appropriate organizational capabilities in organizations have enabled them to effectively deal with key problems they face in a unique specific way as a result of capabilities that have accumulated and shaped over time within the firm (Dosi, Nelson, & Winter, 2000). A study done by Nguyen (2018) on firm capabilities and performance showed that innovative capability had a positive effect on organization performance.

3.5 Organization context

Even though organizations are unique entities, extant literature in strategic management and organizational studies have shown that both the internal and external environments in which the organization operates plays a significant role in determining the leadership system adopted by those in leadership. From arguments raised in situational leadership theory perspective, leadership is flexible and it adapts to the existing work environment and the needs of the organization for survival. The contingency theory on the other hand stipulates that there is no best or special or unique style of leadership that transcends in all organizational situations but it all depends on both the internal and external factors facing the organization at that particular situation. This is in line with Stojanovic (2014) who asserts that organization context is relatively a new requirement for organizations that require them to observe issues arising from their internal and external environment that have an impact on the organization objectives and planning of quality management systems from a strategic point of view. In addition, this makes the organization focus more on the issue of competitive survival in response to rapidly changing contemporary business conditions as observed by proponents of dynamic capability theory.

The study of organization context thus, provides an organization with an understanding of the opportunities to analysis issues arising from both its internal and external environments that affects performance and way of doing things including management of its system and people under its control (ISO 9001:2015). These issues may include factors that affect the entire system positively or negatively such as working conditions, any changing circumstances or system characteristics. The context in which the organization exists plays a big role of relationship moderation and therefore gives a new impetus to better understanding of the construct of leadership strategy thus enabling an organization to focus on areas that are relevant to its set purpose and direction in order to achieve intended quality objectives and improved performance. Other than the socio-cultural, technological, political, market, economic systems, this study considered issues such as such as statutory and regulatory requirements, competitive landscape and stakeholders needs and expectations as arising factors from the external context of an organization that pose great effect on organization performance. According to Muthimi & Kilika (2018), the internal contextual factors considered include among others; the organization resource availability, organization structure, organization culture and organizational complexity. The interested parties to the organization were also found to play a big role in shaping up the organizational performance. These include individuals or other persons that brings value to an organization. These may include among others the customer, employees, government, suppliers, and creditors. An understanding of the needs and their expectations from the organization result in a positive contribution towards achievement of sustainable success for an entity. However, the needs and expectations may take other various forms that may include, cooperation, collaboration negotiation, and outsourcing or by terminating an activity.

To gain a comprehensive understanding of the organizational context, empirical study done by Urgo (2014) observed that the focus of organization context on strategy differed at different levels of strategy in the organization. Whereas at the strategic level, focus is based on needs that are of long term nature for the organization and appropriate for the business management continuity, the focus at the business or tactical level, is purely on processes within the organization context to ensure that the business management system is effective such as process workflows. Finally, at the operational level, the focus is on the required metrics in the organization such as job description and work environment to ensure that the business management system is efficient (ISO 9001:2015). In order for an organization to meet these standards for achieving an effective performance in the ever changing dynamic environment, practice of leadership strategy by the leaders in the organization is paramount. However, despite the need for appropriate leadership, studies on organization performance and organization context in which it operates are still limited and hence an area of concern in the field of strategic management requiring more research.

3.6 Organizational performance

Just like leadership, organizational performance is a broad construct and has been found to manifest itself differently in forms and levels (Yammarino, Spangler, & Bass, 1993). Cambridge dictionary (2015) describes performance as a system or way of how a person or group of persons does work and therefore can be realized at individual, team level or organization level. On the other hand, March & Sulton (1997) defines organization as instruments of purpose. Various researches have attributed organizational performance as an umbrella of several variables such as efficiency, outcomes and business model effectiveness. Randeree et al (2009) describes organizational performance in terms of organization ability to effectively implement strategies to achieve set objectives through people. Kocoglu (2010) defines performance in terms of effectiveness and efficiency while organizational performance as an enterprise ability to achieve the set objectives such as quality product, large market share and high profits. Organizational performance has also been defined as means to transformation inputs into outputs aimed to achieve given outcomes (Chen et al, 2005).

Studies in literature have shown that the operationalization of organization performance has faced challenges in terms of its measurements being on finance and non-finance aspect while forgetting the importance of customer and organizational employee satisfaction indices as performance measures for an organization. According to an empirical study done by Scott & Davis (2016), there is no one standard system used to measure organizational performance. Muthimi & Kilika (2018), found that there were various criteria's for measuring performance in an organization in different perspectives. These included; financial measures such as return on investment (ROI), efficiency and effectiveness, market related measures of performance which include; product leadership, market share growth, increase in sales, customer satisfaction and quality products, public responsibility and shareholders return e.g. dividends. In spite of these measures, there has been a growing concern regarding performance of organizations in relation to its key resource- the human capital or employee centered measures that include; employee satisfaction, innovation leadership, psychological commitment and employee trust.

Performance improvements are the key issues leaders and managers of organizations are facing and implementing within their guidelines in order to update their business operations. Managers must continually think strategically in terms of appropriate strategies to gain a competitive edge over other businesses since there are other contributing factors in firms other than leadership passé that contribute to performance (Lieberson and O'comer, 1972). Thus, leadership in organization must develop capabilities that will result in readiness for organizational changes that is geared towards improving performance and attaining a competitive advantage over other organizations through situation adaptation and flexibility, development of learning culture and managing change. This is in line with concept of attribution theory where impact of leadership on performance is seen as a social construct implying that other antecedents may be at play to determine level of performance other than presence of leadership. This calls for appropriate leadership strategy to be re conceptualized due to change of time and the volatility of the environment for organizations to visualize improved performance.

4. Theoretical Review

Whereas the conceptual literature review tried to link the constructs of leadership strategy, organizational capabilities and organization context with construct of organizational performance, the theoretical literature review on the other hand focused on review of relevant theories underpinning the understanding the constructs of leadership strategy, organizational capabilities, and organization context and organization performance. This section of the study discussed some of the theories that anchored the constructs that were found relevant for the conceptualization of the study. These included Pasmore model as lead theory, Path-Goal Theory, Contingency theory, Transformational Leadership Theory, Resource Based View and Upper Echelon Theory.

4.1 Pasmore Model

Pasmore model is built on research done by William Pasmore (2014) on developing leadership strategy and later expounded by Muthimi & Kilika (2018) in their study entitled, "Leadership strategy, Behavioural focus and Firm performance". Studies in literature have recognized effective leadership as an important area of focus and hence this has made organizations to change their thinking about the business and its continuity through management of people in quantity and quality. Although Pasmore model is still young in its development, the model rest on this premise that organizations can continually sustain their competitive advantage if focus is shifted towards proper acquisition of leaders. Nachimas &Nachimas (2004) argue that scientist begin process of research by forming concepts for describing empirical world and these concepts form foundation of communication, introduce perspectives and are symbol of phenomenon. In addition to forming as components of theory, they allow scientists to classify and generalize. Pasmore model is therefore built on these arguments and from research done by William Pasmore (2014) on developing leadership strategy and later expounded by Muthimi & Kilika (2018) in their study entitled, "Leadership strategy, Behavioural focus and Firm performance". The model is based on the premises that for organization to achieve its intended strategic change aim towards improving performance and business continuity in terms of supporting more creativity, innovations and other organization growth agendas, focus should be placed more on analysis of leadership requirements. This calls for a shift of focus on critical ingredients of leadership for organizational success.

Pasmore (2014) in his study about developing a leadership strategy raises serious concerns on why some known best organizations were performing below par and failing to successfully implement their already existing strategic plans and others failing to adapt to environmental changes as a result of intense competitive landscape, while still others failing to concern about the uncertain future and get prepared for it. He attributed this turmoil facing organizations more to do with leadership hence sought to develop a leadership strategy driven by the business strategy to guide organizations in strive to achieve their intended strategy. Pasmore identified five dimensions of leadership strategy to guide organizations in re-focusing their business strategies. This included analyzing the quantity of leaders needed by the organization over projected employee turnover and other growth needs of the firm over at least the next 5 years, the qualities needed by these leaders at selection such as demographics and diversity, the required skills and behaviours, in driving the business strategy, the required leaders capabilities when working together as a team in matters such as problem solving, developing talents, formulating and implementing strategies, and finally the developed leadership culture. The study concluded that organization leaders should re-think of development of leadership strategy that will drive effectively the business strategy to ensure organization success since without proper leadership, developed organization strategies may not see the light of the day but remain a dream.

4.2 Path-goal theory

The Path-goal theory of leadership is credited to the work done by Martin G. Evans in 1970 and refined in1971 by Robert J House. The theory argues that leaders motivate their followers in a task by involving in behaviours that enhance subordinates' abilities such as rewarding performance and belief that the results of certain outcomes are worthwhile. Northouse (2010) asserts that effective leadership occurs when subordinate's achievement is diagnosed in a given situation of task and an appropriate leadership style adopted to match the situation. Thus, the leaders' behavior needs to be matched with the subordinates' characteristics in a work environment. The path-goal theory therefore predicts the behaviour of leaders in an organization and this is essential for enhancing subordinate's motivation linking it to organizational performance. The implementation of this theory goes a long way in improving subordinate's motivation by clarifying strategic direction that makes improvement in the organization performance possible.

4.3 Contingency theory

The contingency theory stipulates that there is no best or special or unique leadership style that transcends in all organizational situations but it all depends on both the internal and external factors facing the organization at that particular situation. This implies that what is effective in some circumstances could have no or little effect in others. The theory was proposed by an Austrian psychologist Fred Fiedlers in 1946 who found leaders to be motivated by either the task or the relationship at workplace and thus continually influence or manipulate the situation of leadership at hand to achieve their objectives in terms of leading style and amount of control exerted within the situation (Sinding & Waldstrom, 2014). The theory argues that depending on the organization situations, leaders can adapt leadership style that best suit the situation at the workplace. Gachingiri (2015) asserts that organization success or failures in achieving set goals is greatly attributed to leadership operating in the organization at the time. Effective leadership therefore adapts leadership style basing on the group type, the existing situation and the goals to be attained. This implies that the organization leaders must be very careful when choosing potential leaders to drive the organization in achieving its vision. This is how the study of leadership strategy is anchored to this theory.

4.4 Transformational leadership theory

Transformational leadership is traced to work done by McGregor Burns in the year 1978 and later in the year 1985, the theory was expounded to enhance the meaning by Bernard Bass. The theory blends both behavioral theories with traits theories by making subordinates more informed of the importance of assigned tasks and expected performance, needs for individual growth and development. This enhances their motivation to work and accomplish set targets for the success of the organization. This theory therefore offers an approach that is rational on how leaders reward and motivate followers for achievement of organization goals hence enhancing organization performance. An understanding of this theory in leadership is important since it stimulates subordinates intellectually by instilling in then feelings of admiration, confidence and commitment and also providing strategic thinking in solving problems. The importance of transformational leadership in relation to the construct of leadership strategy is paramount in identifying the right quantity of leaders with desired qualities for an organization with required skills, behaviours, and capabilities and appropriate leadership culture.

4.5 Resource based view theory

This Resource Based View (RBV) theory was developed by Penrose (1959) and then later expounded by Wernerfelt (1984), Barney (1991) and Corner (1991). Proponents of the theory asserts that firms are heterogeneous because they possess resources that are heterogeneous in nature i.e. Valuable, Rare, inimitable and Non-substitutable (VRIN). Resources are valuable or rare when they are relatively of high cost in acquiring them such as airplane or very scarce to acquire such as diamonds. On the other hand, resources are hard to be imitated by competitors if they are either protected legally such as trademarks, patents, copyrights or are very hard to copy due to unique features set the organization. This is the essence of effective leadership in the organization. The resource becomes non-substitutable when competition fail to get alternative resource that can offer the same benefits provided by the resource. The focus therefore lies with the leaders in the organization on use of internal resources to maximize on derived benefits by identifying assets, competencies and capabilities that will offer the potential to give an organization a competitive advantage over others. Even though the theory focuses on internal environment and not external, postulates of the theory are relevant to the study of leadership strategy in strategic management.

4.6 Upper Echelon theory

The upper echelon theory is traced back to work done by Hambrick and Mason in 1984. The theory was found on the premises that organizational performance is influenced directly by the competencies, experience and skills of leaders holding key managerial roles in an organization (Hambrick & Mason, 1984). These characteristics are essential predictor of leadership strategy and organizational performance. According to Hambrick and Mason (1984) an organization is reflection of the Top Management Team (TMT) since they play a big role in ensuring future survival of the organization and attainment of its performance through effective leadership. The theory therefore stipulates that perception of TMT about the organization and its environment as a result of their formed cognitive base and values influences the decision making of required appropriate strategic choices to enhance performance. Thus, top managers' personal characteristics determine the way they view things and decision made regarding strategic direction for the organization which may ultimately affects performance. Thus, this theory supports work done by Pasmore (2014) and Muthimi & Kilika (2018) on essentials of leadership strategy in terms of the organization acquiring the right quantity and quality of the leaders by focusing on the characteristics of the TMT and their leadership roles in managing organizations on diverse backgrounds. This is because the main variables in this theory of upper echelon includes age, work experience- and educational background that are useful in providing demographic background information for required leaders which form leadership quality characteristics for enhancing organizational performance.

5. The case for a new Theoretical model

The literature so far reviewed has considered the theoretical, conceptual and empirical literature on the construct of leadership strategy. The reviewed literature has raised critical points in the emerging scholarly conversation in strategic management regarding the role of leadership. First, the literature has raised an important observation regarding the scope of the application based on the earlier conceptualization of the construct of leadership strategy. While previous scholarship considered the construct from the narrow perspective of the phase of strategy implementation only, the discussions carried out in this paper have demonstrated that the components of leadership strategy have a role to play in the earlier phases of strategic management that precede implementation touching on formulation and choice. Thus, an important lesson raised is that of expansion of the scope of conceptualization of strategic leadership beyond implementation and facilitating a logical approach by which the components of the strategy will apply at the various levels of strategy as has been articulated in the strategic management literature (Pearce &Robinson, 2012)

The second point arises from the effect of the deployment of a leadership strategy in a firm. We note that the application of this construct into the systems of an organization brings the potential of initiating a sequence of outcomes that are typical of a firm strategic behavior in which other constructs come into play as the behavior roles out. We draw our insight into this from two considerations: the nature of leadership itself and the nature of strategic thinking both of which are fundamental to explaining firm strategic behaviour. According to Liedtka (1998), strategic thinking reflects a unique particular way of thinking by leaders in an organization with a very distinct and clearly identifiable characteristics. This particular way of thinking with an effective leadership strategy in place, brings about a positive impact on future of the organization in-terms of improved performance. Leadership strategy brings on board certain aspects of leadership which can be construed to imply a strategic resource. One school of thought that considers management as an economic resource at the disposal of an organization is critical in our analysis for advancing an argument that leadership strategy becomes a type of resource that brings about other intermediate and ultimate outcomes. As the concern in resource-based perspectives is how to sustain performance for the foreseeable future, two possibilities are suggested, namely capabilities that are enacted into the systems that host the leadership as the basis for sustaining the main point of focus of any strategy, performance.

Thus, within a linear path of reasoning, two constructs become relevant to the phenomenon, capabilities and firm performance. In terms of the nature of strategic thinking, we observe that the emerging phenomenon is understood in the context of the defining characteristics of strategic thinking whereby two pillars stand out: focus on the firm's future and the external environment that constrains the attainment of that future. The external environment is particularly important because leadership studies acknowledge the role of the context in which the leadership is applied and so the need for a contingent and situational approach to leadership. Therefore, in addition to the two constructs fitting in the linear path of the identified behaviour, the paper suggests that the context of the application of leadership strategy will play a contingent role in this behavior.

What now emerges clearly is a true phenomenon that shapes the direction of strategic management. In order to move ahead to demonstrate that leadership strategy is important in strategic management, it is our suggestion that the phenomenon needs to be explained and documented so that its constructs can be defined and components identified. From a conceptual viewpoint, the construct of leadership strategy has been explained by various aspects that include the concept of leadership and its nature, meaning and components. According to work done by Pasmore (2014) and later advanced by Muthimi & Kilika (2018) operationalization of role of leadership strategy can be realized through analysis of five key indicators namely: the required quantity of leaders' strategy, required quality of leaders' strategy, the skill and behaviour strategy, leaders' capabilities strategy and required leaders culture strategy.

The most appropriate way in a scientific way to capture this phenomenon is through a theoretical framework. According to Nachimas &Nachimas (2004) scientist begin process of research by forming concepts for describing empirical world and these concepts form foundation of communication, introduce perspectives and are symbol of phenomenon. In addition to forming as components of theory, they allow scientists to classify and generalize. Thus, new source of knowledge advanced from scholarly and scientific backgrounds require a foundation base that act as a support for the acquired knowledge. This is also in agreement with ideas of Senge (1990) and Moore (1993) who stressed on the importance of developing mental models that influence leaders behaviour that make leaders focus more on creativity and innovation.

Thus, based on the foregoing arguments, the reviewed theoretical and conceptual literature and list of selected reviewed empirical studies built on this knowledge, we find evidence of the existence of this phenomenon. The studies can generally be classified into four streams namely; leadership strategy, organizational capabilities, context and performance. In reference to the first stream, Sophia & Kevin (2017) investigated the role of leaders in achieving organizational outcomes in Australian firms and established a relation between leadership systems and performance. Ellen (2012) investigated on organizational leadership practices that encourage culture of strategic thinking in USA firms and established a positive relationship between leadership practices and culture of strategic thinking leading to improved organizational performance. Karamat (2013) investigated on the impact of leadership on organizational performance in service sectors in Turkey and established a relationship between adapted leadership behaviours' and performance. Mastrangelo (2013) investigated on effect of enduring leadership and organizational performance in firms in New York City and established that both personal and professional leadership impacted positively on employee performance. From a local context, Kitonga (2017) investigated on effect of strategic leadership practices on organizational performance in not-For profit organizations in Nairobi county in Kenya and established a strong positive correlation between practiced strategic leadership in general and organizational performance. The study concluded that effective strategic leadership leads to improved performance for not-For profit organization indicating a strong impact of leadership behaviours'.

The second stream of empirical studies focused on effects of organizational capabilities as instrumental intermediate variable. Kurmat and Vadi (2010) investigated on measurement tool for the evaluation of organizational leadership capability and established that measurement of organizational capability that exist both at individual leadership and at collective level was important parameter for improving organizational performance in the long run. Nguyen (2018) investigated on effect of firm capabilities on performance in relation to responsiveness to environmental context and business relationships and established that inclusion of capabilities in an organization enhances performance through appropriate leadership strategy. Sofia (2009) investigated on the effect of internal organizational motivational capabilities on performance in Spanish firms and established a positive correlation between practiced internal capabilities and performance.

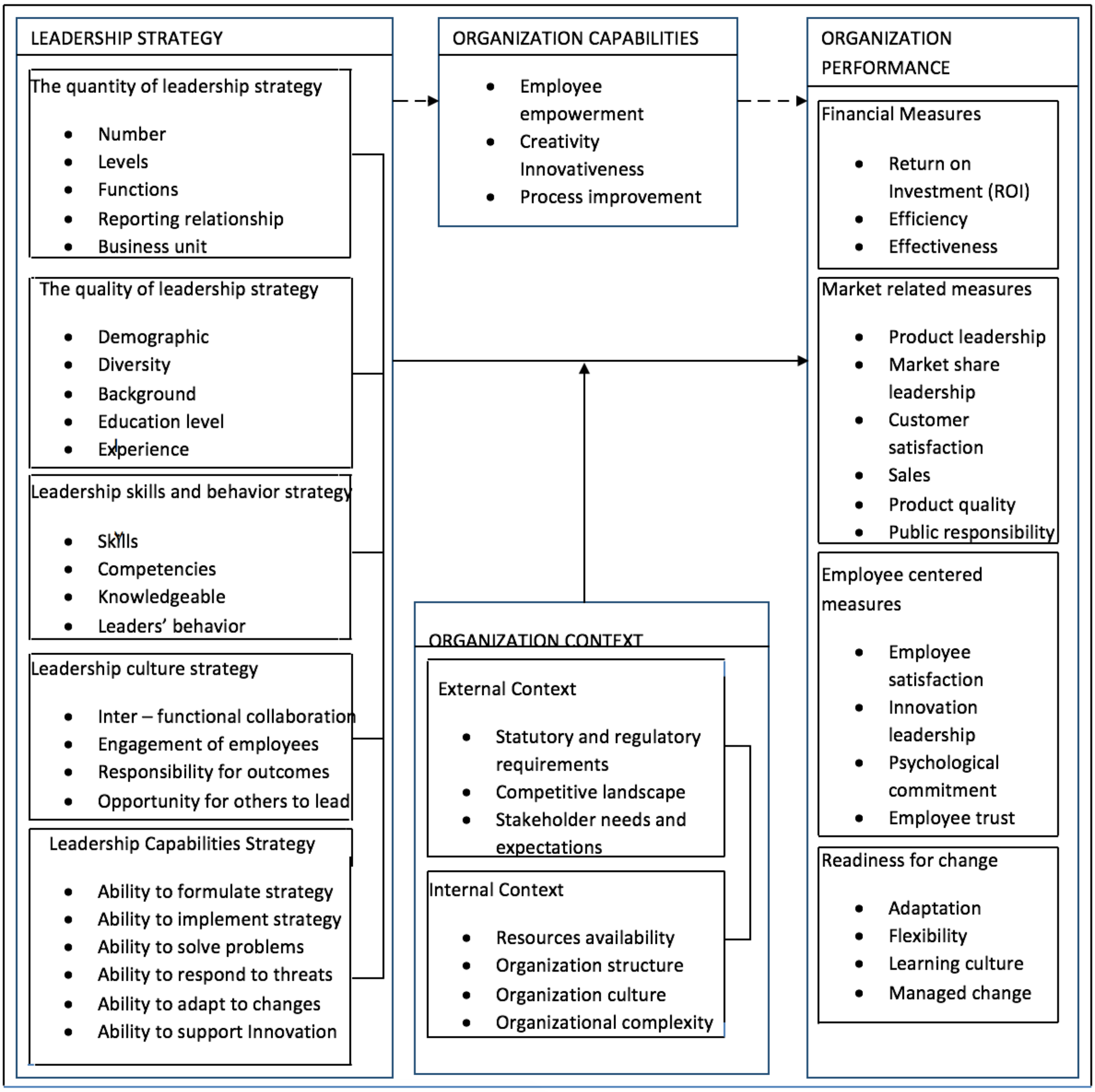
The third stream of empirical studies focused on role of organizational context as a key contingent variable. A study done by Rodriquez (2009) on environmental engagement and firm performance established that an organization can enhance outcomes of its environmental engagement through understanding of the importance of leadership involvement in its diverse functional units and by continuously assessing their outcomes. Shoemaker and Steven (2015) investigated on effect of the uncertainties in the environment on leadership and strategy and established desired leadership qualities and skills were instrumental in overcoming these barriers. From the foregoing discussions, it is clearly shown that the discussions on the construct of leadership strategy and performance is still scanty and this calls for more in-depth investigation on the role of leadership strategy in the context of strategic management through a well-defined theoretical model. Thus, based on the need to have a framework for the new theoretical model, it is our opinion that this rich diversity of advanced new knowledge arising from both conceptual and empirical backgrounds will form a foundation base for generation of appropriate constructs and supportive indicators and understanding of their operationalization in practice other than in theory.

From the above logic, we find that there is need to move to new frontiers of knowledge by clearly documenting this phenomenon through a theoretical model. As a result of the emerging phenomenon, it is the authors' opinion that this window opens a basis for expressing the phenomenon in form of a theory through construction of a new theoretical model for further empirical investigations that will guide future researchers in understanding clearly the constructs under study. From an epistemological thinking, a theoretical model is important as it constitutes the acceptable knowledge in the field of study. Nachmias & Nachmias (2004) asserts that before carrying out any empirical research, the ideas and underlying theories needs to be formulated first. According to Johansson (2004), these developed theories need to be categorized according to scope and functions to cause a meaning. Thus, we find that various research studies use the logic of both deductive and inductive reasoning and approaches in explaining mechanisms that lead to operationalizing concepts that allow for quantitative measurements of established facts empirically (Trochin, 2006).

6. THE PROPOSED THEORETICAL MODEL

The reviewed literature has clearly brought about the understanding of the construct of leadership strategy, the emerging phenomenon and nature of their relationship at different levels of strategic management process that enable better understanding of its role in the context of strategic management In view of the above arguments, sets of previous research done and the identified emerging gaps observed in reviewed literature, the author is of the view that to integrate leadership with studies in strategic management, a new model that is premised on the constructs of leadership strategy, organizational capabilities, organization context and performance need to be constructed to provide a better understanding about the linkages of the constructs and the role played by each construct in building the emerging phenomenon. The new model is as summarized in figure 1 below.

Figure 1: Proposed Theoretical Model on linkage between Leadership Strategy and Organization Performance



From the above theoretical framework, the effect of leadership strategy on organizational performance is measured using five indicators namely; the quantity of required leaders, the quality of leaders, the leader's skills and behaviours, leaders' culture and leaders' capabilities. These indicators are also measured using sub-indices to establish the in-depth effects of the relationship. The organization performance as a dependent construct is measured using financial, market related, employee centered and readiness to change measures. The framework has incorporated the construct of organizational capabilities as mediator in explaining the relationship that link leadership strategy and performance. The key indicators for this construct are employee empowerment, creativity, innovativeness and process improvement. In order to assess the strength of this relationship, organizational context has been added to the framework as a moderating construct. The understanding of the organization context requires an organization to determine both the internal and external issues that are relevant to the purpose and strategic direction of the organization and that affects its ability to achieve intended quality results. In this study, the indicators that measure the external context include; the statutory and regulatory requirements, competitive landscape and stakeholders needs and expectations whereas the indicators for measuring the internal context issues include; resource availability, organization structure, culture and complexity.

7. Proposed research propositions

7.1 Leadership Strategy and Organization performance

Extant literature in strategic management has shown that at corporate level of strategy, the top management team (TMT) is responsible for all firm's decisions and all commitments necessary to achieve competitiveness and increases in its revenue accumulations. It is at this level that leadership plays a bigger role in strategic management due to greater emphasis being laid on strategic thinking for the organization future, development of vision and mission statements, formulation of strategies for implementation, strategic positioning of the organization in the market, strategic innovations and options. As proposed by Pasmore (2014), the deployment of leadership strategy in an organization as derived from the adopted formulated business strategy in the firm focuses on attainment of performance to desired levels by management in implementing its business strategy through its motivation effects of available competencies. Whereas the construct of leadership strategy has been operationalized through the identified five indicators namely; quantity of leadership required, quality of leadership, leaders skill and behaviour, leaders culture and leaders collective capabilities as pointed out by pasmore (2014), its deployment is expected to usher new direction of strategic thinking for the purpose of offering direction that focus on attainment of desired level of performance in an organization through formulation and implementation of its business strategy.

Therefore, we therefore propose that;

Proposition 1: Deployment of leadership strategy drawn from the organization's business strategy will affect positively the various dimensions of organization's performance.

7.2 The role of organizational capabilities.

The concept of organizational capabilities has been viewed as strategic resource in strategic management studies with a lot of interests by various researchers as a major component of an organization strategy and when tapped give rise to use of capabilities and competence that lead to sustainable performance in an organization. Shoemaker and Amit (1993) found organizational capability as a means by which resources are deployed in an organization through effective leadership aimed to achieve a desired end. These observations and with reference to arguments raised in RBV theory that organizations are heterogeneous entities with bundle of resources that have unique characteristics that are difficult to duplicate due to their valuability, Rarity, inimitability and non-substitutability, leaders should focus on use of their internal resources to maximize on derived benefits by identifying capabilities that gives an organization a competitive advantage over others.

In this regard, we find organizational capability a strong resource within an organization that unleashes capabilities into the organizational system that give rise to improved performance and competences as a means of sustaining targets for superior performance Thus, within a linear path of reasoning, we are of the opinion that the construct of organizational capabilities is relevant to this study since it enables leaders in the organization able to exploit all areas that give it a competitive advantage in order to develop appropriate strategies that enhance value to the customer (O' Sullivan, 2011).

Muthimi & Kilika (2018) argued that employee empowerment, creativity, innovativeness and process improvement by leaders within an organization were found as critical indicators of organizational capabilities that give an organization a sustainable competitive advantage over others in a dynamic environment. This is in line with path-goal theory that stipulates that followers are motivated by their leaders by involving them in behaviours' that result in worthwhile outcomes for the organization and who in turn motivates their subordinates leading to improved organizational performance. Thus, the deployment of leadership strategy in organization is expected to give rise to organizational capabilities as a form of competencies required to improve performance in terms of employee empowerment, creativity and innovativeness and improvement of business processes. We therefore propose that;

Proposition 2: There is a correlation between the deployed leadership strategy in the organization and the capabilities exhibited by the leaders implementing the organization's strategy.
Proposition 3: Organizational workforce capabilities will mediate the relationship between deployed leadership strategy and the emerging organization performance.
Proposition 4: The relationship between the deployed leadership strategy and organization capabilities will be moderated by organization context affecting the ability of the leaders to achieve the intended organization performance.

7.3 The role of organization context

Based on the literature discussed in this paper, it can be concluded that organizations are unique entities and environment in which they operate plays a significant role in determining the leadership system adopted by those in leadership. From arguments raised in situational leadership theory perspective, leadership is flexible and it adapts to the existing work environment and the needs of the organization for survival. The contingency theory on the other hand stipulates that there is no best or unique style of leadership that transcends in all organizational situations but it all depends on both the internal and external factors facing the organization at that particular situation. This is in line with Stojanovic (2014) who asserts that organization context is relatively a new concept in organizations that require them to observe issues arising from their internal and external environment that have an impact on the organization leadership.

The unpredictable situation of the external environment and the many surprises it brings on organizations makes leaders concur that there is congruence between the strategies being formulated and implemented and the organization context in which the firm operates. This has made organization context be viewed as a source of roadblocks to smooth implementation of organization strategy. At the deployment of leadership strategy, considerations of factors both in the internal and external environments within the organization will play a key role in achievement if intended strategy. Whereas factors to consider within the external environment will include: statutory and regulatory requirements, competitive landscape and stakeholders' needs and expectations, the key dimensions within the internal environment will include: resource availability, organization structure, organization culture and its complexity. From this argument on value of external organization context and the expected role leadership is to play in the organization, we therefore propose that;

Proposition 5: The leaders' perception of the organization's external context will moderate the relationship between the deployed leadership strategy and corresponding organization's performance.
Proposition 6: The leaders' perception of the organization's external context will moderate the mediated effect of organization capabilities on the relationship between the deployed leadership strategy and the organization's performance.

8. Conclusion and Recommendation.

The purpose of this study was first to examine the extant conceptual literature review on the constructs of leadership strategy and organization performance. The study also considered the effects of organizational capabilities and organization context as mediating and moderating constructs respectively on the relationship between leadership strategy and organization performance. Secondly, the study reviewed the relevant theoretical literature underpinning the leadership strategy and the corresponding phenomenon; thirdly, it reviewed previous empirical literature and emerging gaps identified that formed the basis for further research on deployment of leadership strategy in an organizational context.

From the reviewed literature the construct of leadership strategy is not fully developed in the main stream of strategic management phenomenon, however, it is clear that the future of organizations in terms of sustainability and business continuity will depends on the decision of incorporating the principle of leadership strategy in this main stream. Past empirical studies have also shown variety discrepancies in their analysis of the construct of leadership strategy and organizational performance. From the review of extant conceptual, theoretical and empirical literature, the construct of leadership strategy has been argued to have a place at all levels of strategic management through the processes of strategy formulation, implementation and evaluation resulting in improvement of organization performance. It therefore plays an important role in implementation of the organization's business strategy and business continuity that lead to improved performance of the organization putting into consideration the mediating effect played by the constructs of organization workforce capabilities and the moderating effect of the organization context in which the organization operates on the relationship between leadership strategy and organization performance.

From the above proposed conceptual model and propositions, the author suggests further future research on the constructs be carried out including their operational indicators and the direction of relationships of both mediating and moderating variables as indicated in the proposed propositions through development of suitable measuring instruments for collecting primary data and application of suitable statistical techniques to confirm these hypotheses.

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Appendix 1: Leadership strategic dimension roles at Corporate level strategy.

LEVEL OF STRATEGY	Leadership Strategic Dimension	Role at Formulation	Role at Implementation
Corporate	Quantity of leadership	• Matching required leadership to resources for entire organization, • Determining number, function and levels of leadership, number of business units and reporting relationships.	• Determining when to match, where to match and at what level to match formulated strategies.
	Quality of leadership	• Formulate strategies that determine required leaders' characteristics in terms of demographic, diversity, background, education level, and experience for entire organization.	• Determine targeted demographic and diversity in terms of levels and location through recruitment and hiring process.
	Skills and Behaviour	• Articulation of generic behavioural competencies for all leaders in the organization	• Carry out required specific skill, knowledge gaps in the organization.
	Leadership Capability	• Formulating strategies by providing direction and alignment of generated commitment as a whole leadership team. • Growing the business in other new markets. • Compliance with consistent set of values, beliefs and actions across the organization and talent development.	• Implementing successful innovation. • Engage employees in decision making and solving problems that require collaboration across boundaries. • Being responsive to organization's customers' demands.
	Leadership Culture	• Formulating strategies that exhibit degree of dependence, interdependence or independence among the business leaders. • Exhibit leadership style that is in conformed to the majority of the organization leaders such as control-oriented, participative or Laissez faire.	• Set up key leadership practices that are shared across the organization such as engaging employees, accepting responsibility, being customer focused and embrace opportunities that lead to improvements for the business.

Appendix 2: Leadership strategic dimension roles at business and functional level strategy

LEVEL OF STRATEGY	Leadership Strategic Dimension	Role at Formulation	Role at Implementation
Business	Quantity of leadership	• Matching required leadership to resources for business unit. • Determining number, function and levels of leadership, and reporting relationships in the business unit.	• Determine when, where and at what level to match formulated strategies at the business unit.
	Quality of leadership	• Formulate strategies that determine required leaders' characteristics in terms of demographic, diversity, background, education level, and experience in the business unit.	• Determine targeted diversity in terms of levels, specialty and appropriate placement at the business unit.
	Skills and Behaviour	• Formulating of generic behavioural competencies required by leaders in the business unit.	• Implement specific skill, knowledge gaps required by leaders in the business unit.
	Leadership Capability	• Formulating strategies derived from the corporate strategy by ensuring compliance with a consistent set of values, beliefs and actions across the business unit • Development of talent.	• Implement successful innovation, • Engage employees in decision making, solving problems and customer demands at the business unit.
	Leadership Culture	• Formulating strategies that exhibit degree of dependence, independence or interdependence among enterprise leaders at the business unit.	• Set up leadership practices in the business unit such as engaging employees, embracing opportunities to make improvements and being customer focused.
Functional	Quantity of leadership	• Matching required leadership to resources at the functional level.	• Determining when, where and at what level to match formulated strategies at the functional level.
	Quality of leadership	• Formulate strategies that determine required leaders' characteristics and experience at the functional level	• Carry out distribution of hired staff in line with the functional duties in the business.
	Skills and Behaviour	• Formulate generic behavioural competencies required by leaders at the functional level	• Implement specific skill, knowledge gaps required by leaders at the functional level by allocating tasks accordingly.
	Leadership Capability	• Formulating strategies derived from the business unit in consistent with set of values, beliefs and actions across the business unit and development of talent.	• Implement successful innovation. • Solving problems and customer demands at the function level.
	Leadership Culture	• Formulating strategies that exhibit degree of dependence, independence or interdependence at the functional level.	• Engage employees to achieve set objectives • Being customer focused. • Embrace opportunity to make necessary improvements.

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What Drives Teaching Performance at School? The Determinants of School Teacher Performance

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Abstract
This study aims to analyze the factors that affect teacher performance with organizational commitment as a mediation between professional commitment and job satisfaction to teacher performance. In the realization of the achievement of target student scores based on the results of the National Examination for the 2016/2017 academic year to 2018/2019 academic year for the Djakarta Christian Schools Association in South Jakarta. The problem has been identified that the lack of attention from the school is an impact on teacher performance. The unilateral policies given to the teacher have become tiring pressure on the teacher and have an impact on the lack of desire for creativity in improving student learning outcomes as seen in the results of students' final exam scores. This study uses Professional Commitment and Job Satisfaction as independent variables, Teacher Performance as the dependent variable, and Organizational Commitment as a moderating variable. This study used 29 teachers as respondents and used SPSS software in processing and analyzing data. This research results that Job Satisfaction affects Organizational Commitment, Job Satisfaction affects Teacher Performance, Organizational Commitment affects Teacher Performance, Professional Commitment affects Organizational Commitment and Professional Commitment affects Teacher Performance. Job Satisfaction indirectly affects Teacher Performance through Organizational Commitment, and Professional Commitment indirectly affects Teacher Performance through Organizational Commitment.

Keywords: Job Satisfaction, Organizational Commitment, Professional Commitment, Teacher Performance

1. Introduction

1.1 Introduction

Teacher performance has certain specifications. Teacher performance can be seen and measured based on the specifications or competency criteria that each teacher must have. With regard to teacher performance, the form of behavior in question is the teacher's activities in the learning process. With regard to teacher performance standards in the guide book for teacher performance appraisal by supervisors, it is explained that teacher performance standards are related to the quality of teachers in carrying out their duties such as working with students individually, preparing and planning lessons, utilizing learning media, involving students in various learning experiences, and leadership active teachers (Kusmianto, 1997). Teacher performance is real behavior displayed by teachers as work performance based on established standards and in accordance with their role (related to the role of teachers in the learning process) in school (Rivai, 2009). Teacher performance can also be defined as the implementation of the learning process both in class and outside the classroom in addition to other activities, such as working on school administration and learning administration, carrying out guidance and services to students, and carrying out assessments (Rusyan, 2001). So it can be concluded, what is meant by teacher performance is the extent to which a teacher works in accordance with existing procedures in achieving the goals that have been planned. Measurement indicators are leadership, class mastery, quality information and planning, use of human resources, assurance of product and service quality, quality of results and student satisfaction.

The Djakarta Christian Schools Association (DCSA), is a school that has been established since 1942. The existence of this school is spread across West Java (Depok Area) and in Jakarta there are several locations. The research this time was conducted at one of the DCSAs in the South Jakarta area, to be precise, at Kebayoran Baru District. DCSA is a school that is a source of pride and a barometer of assessment of other schools. With a fairly complete variety of extracurricular activities, strategic location, the number of hours for English subjects is more than other DCSA schools and each batch only provides one class. However, seen from the instability of the National Exam (NE) scores, it has even tended to decline for 3 years (2017-2019) for the two levels in the Kebayoran Baru district's DCSA (Junior and Senior High School). The decline in the quality of the test results is influenced by professional commitment, job satisfaction and organizational policies or the policy provider concern for teachers. Teacher performance is expected to be improved along with the increasing level of Organizational Commitment by teachers. There is a change in policy by being willing to listen to some of the complaints or teacher input is expected to improve teacher performance.

Factors that affect teacher performance from the internal side in learning activities are seen from the level of teacher education, teaching supervision, upgrading programs, a conducive climate, facilities and infrastructure, physical and mental conditions of teachers, leadership styles of principals, welfare assurance, managerial abilities school and others. Meanwhile, the factors that influence teacher performance from the external side are Professional Commitment, Organizational Commitment, Organizational Commitment, and Job Satisfaction.

Professional Commitment refers to the strength of an individual's identification with the profession. Individuals with high professional commitment are characterized as having high trust and acceptance of professional goals, a desire to try their best on behalf of the profession and a strong desire to maintain their membership in the profession (Mowday *et al*, 1979 in Rahayu & Faisal, 2005). Then job satisfaction is one of the factors that affect work performance because that ultimately affects organizational effectiveness. And also employee job satisfaction is not enough to only be given incentives, but employees also need motivation, recognition from their superiors for their work, a work situation that is not monotonous and there are opportunities to take initiative and be creative. Meanwhile, the organizational commitment factor can be identified into four factors. First, student learning and school development, second, demand for school teaching and practice, third, teaching as a career choice, fourth, teacher-student attitude interactions. The results of these studies indicate that the factors of teaching as a career have an influence on teaching commitment. Followed by student learning and school development. Student teacher interaction factors, as well as teaching demand factors and school practices contribute to increasing teacher teaching commitment (Rots *et al*., 2010).

1.2 Prior Studies

There are several previous studies, one of which is research by Surbakti (2019), which states that teacher commitment to school has a positive effect on job satisfaction. Then Ningsih (2019) which states that commitment, competence and work environment together have a significant and significant effect on teacher performance. In addition, Kusumaningtyas (2019) states that there is a relationship between organizational commitment, work discipline and the quality of work life on teacher performance. It can be interpreted that organizational commitment, work discipline, and quality of work life can be used as predictors to predict teacher performance. Then the research by Nongkeng, *et al* (2012) which results indicates that by assessing student learning outcomes by lecturers, this is the basis for giving rewards to lecturers from university leaders. And also research by Panjaitan (2012) which states that the creation of good work motivation and work commitment can encourage school quality improvement. This will lead to openness to the deficiencies or weaknesses faced by teachers that previously will be resolved, so that they will contribute to improving them in the future, which will make all elements of company personnel work properly as expected. And Kaliri (2008) which states that work discipline, work motivation have a significant effect on performance.

1.3 Hypothesis Development

The existence of a commitment to a vocation in accordance with the profession that is taken (in this research, the profession as a teacher) fosters a feeling of belonging to a teaching place and wants to provide the best for the school where it teaches. Professional commitment is related to the level of individual loyalty to the profession, such as perceptions by that individual (Trisnaningsih, 2003).

H_1 = There is a significant direct influence between professional commitment to organizational commitment.
Job satisfaction is the level of individual satisfaction with their position in the organization relative to other colleagues. There is satisfaction in terms of comfort at work, from the income earned, sufficient to fulfill their life, foster a sense of belonging to the organization where they work. Meanwhile, Organizational Commitment is related to the level of individual loyalty as part of the organization. This is reflected in the individual's attitude towards the organization.

H_2 = There is a significant direct effect between Job Satisfaction on Organizational Commitment.
There is a relationship between organizational commitment, work discipline and the quality of work life on teacher performance. It can be interpreted that organizational commitment, work discipline, and quality of work life can be used as predictors to predict teacher performance. From the results of this study, it can be seen that there is a direct positive relationship between organizational commitment and teacher performance.

H_3 = There is a significant direct influence between Organizational Commitment to Teacher Performance.
Teacher commitment to the organization shows that teachers love their job teaching and that will be the main asset to become a professional teacher. Student success is greatly influenced by teacher performance, because teachers have an important role in educational efforts.

H_4 = There is a significant direct influence between Professional Commitment to Teacher Performance.
The performance measurement process often requires statistical evidence to determine the level of progress of an organization in achieving its goals. The fundamental purpose behind taking measurements is to improve performance in general. Performance measurement is used as a basis for assessing the success and failure of implementation. Job satisfaction is a person's perspective, both positive and negative about their work (Siagian, 2014). Job satisfaction is the impact or result of the effectiveness of performance and success at work.

H_5 = There is a significant direct effect between Job Satisfaction and Teacher Performance.
According to Supriyadi (1998) the term professionalism refers to the degree of individual appearance as a professional or the appearance of a job as a profession. Professionalism is directly proportional to performance and is also related to organizational commitment, so it is essential for a teacher to maintain and improve their professional abilities.

H_6 = Professional commitment has an indirect effect on teacher performance through organizational commitment.
Organizational commitment as an initial sign of job satisfaction, and finds a significant positive relationship between Organizational Commitment and job satisfaction affects service quality in an effort to achieve company goals (Mathis & Jackson, 2011).

H_7 = Job satisfaction has an indirect effect on performance through organizational commitment.

2. Method

This research uses a quantitative approach. The quantitative approach emphasizes meaning, reasoning, the definition of a particular situation, examines more things related to everyday life. A qualitative approach, emphasizes the process compared to the final result, therefore the sequence of activities can vary depending on the conditions and the number of symptoms found. Research objectives are usually related to things that are practical. This study uses primary data which is data collected by researchers directly from its main source, this data collection uses a questionnaire given to school teachers as respondents, amounting to 29 school teachers.

2.1 Research Design

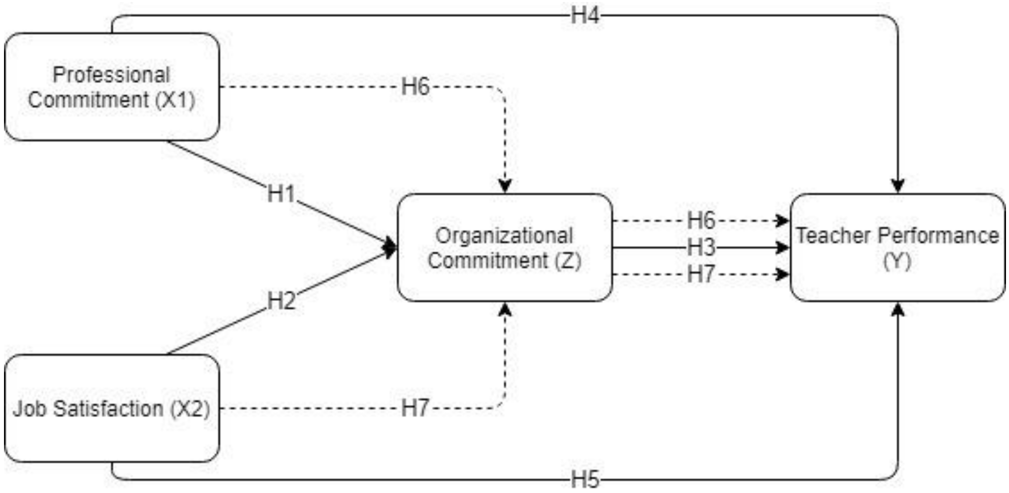

Figure 1. Research Framework

From figure above, the hypothesis 6 and 7 goes through Organizational Commitment, where in next segment of this study, will be calculated the indirect impact from both independent variables to dependent variable. Figure 1 also represent structural flow of the equation that will be divided further into two sub-structure.

2.2 Path Analysis

This analysis is used in examining the magnitude of the contribution shown by the path coefficient on each path diagram of the causal relationship between independent variables on moderation and its impact on the dependent variable. Path analysis is a technique for estimating the effect of the independent variable on the dependent variable from a set of observed correlations, providing a pattern of causal relationships between variables. This path analysis technique will be used in testing the amount of contribution (contribution) shown by the path coefficient on each path diagram of the causal relationship between the independent variable on moderation and its impact on the dependent variable. Correlation and regression analysis which is the basis for calculating the path coefficient. There are three stages in conducting path analysis, namely formulating hypotheses and structural equations, calculating the path coefficient based on the regression coefficient, calculating the path coefficient individually.

3. Results

3.1 Sub-structure I Test

The sub-structure I test consists of Job Satisfaction and Professional Commitment as independent variable, and Organizational Commitment as dependent variable. Where the following are the results of data processing for sub-structure I testing.

Table 1. Model Summary of Sub-structure I

Variables	Unstandardized Coefficients		Standardized Coefficients	t-value	p-value	R-square
	beta	Std. Error	beta			
Constants	0,719	0,494		1,454	0,152	0,375
Job Satisfaction	0,400	0,119	0,389	3,346	0,001	
Professional Commitment	0,298	0,103	0,334	2,875	0,006	

From table 1 above it could be seen that Job Satisfaction and Professional Commitment, both have direct and significant impact to Organizational Commitment by their p-value of 0.001 and 0.006, respectively. Organizational Commitment is influenced by Job Satisfaction and Professional Commitment simultaneously by 38% based on the R-square value, and the remaining 62% is influenced by other factors. Every increase in Job Satisfaction by one point, it will influence Organizational Commitment by 0.400, and vice versa. Every increase in Professional Commitment by one point, it will also influence Organizational Commitment by 0.298, and vice versa.

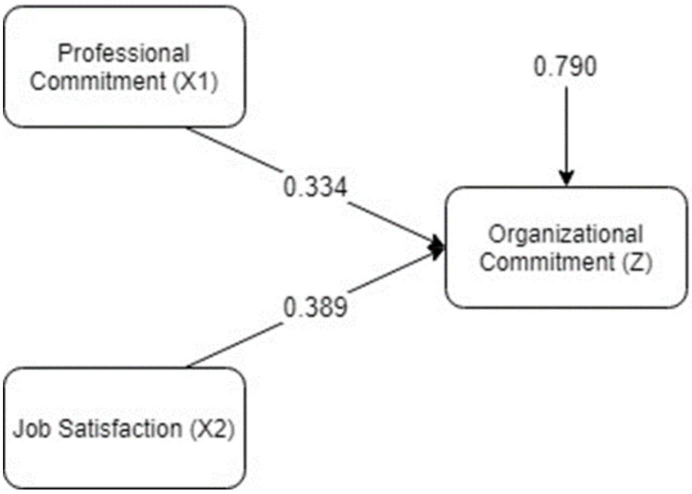

Figure 2. Sub-structure I Framework

Figure 2 shows the complete structural framework for sub-structure I equation. It can be seen on figure 2 as Professional Commitment and Job Satisfaction have standardized coefficient of 0.334 and 0.389, respectively to Organizational Commitment. And path coefficient of 0.790 (√(1-0.375)). Therefore, the structural equation of sub-structure I testing is as follow:

$$Z = 0.334X_1 + 0.389X_2 + 0.790\varepsilon_1 \quad (1)$$

3.2 Sub-structure II Test

The second sub-structure test consists of Teacher Performance, Job Satisfaction, Professional Commitment, and Organizational Commitment. Where the following are the results of data processing for sub-structure II testing.

Table 2. Model Summary of Sub-structure II

Variables	Unstandarized Coefficients		Standardized Coefficients	t-value	p-value	R-square
	beta	Std. Error	beta			
Constants	1,327	0,313		4,233	0,000	0,560
Job Satisfaction	0,288	0,081	0,381	3,541	0,001	
Professional Commitment	0,196	0,069	0,299	2,844	0,006	
Organizational Commitment	0,177	0,082	0,240	2,142	0,037	

From table 2 above it can be seen that Job Satisfaction, Professional Commitment, and Organizational Commitment have direct and significant impact to Teacher Performance by their p-value of 0.001, 0.006, and 0,037 respectively. Teacher performance is influenced by three factors as follow, Job Satisfaction, Professional Commitment and Organizational Commitment simultaneously by 56% and the remaining 44% is influenced by other factors. Every increase in Job Satisfaction by one point, it will influence Teacher Performance by 0.288, and vice versa. For every increase in Professional Commitment by one point, it will influence Teacher Performance by 0.196, and vice versa. For each increase in Organizational Commitment by one point, it will influence Teacher Performance by 0.177, and vice versa.

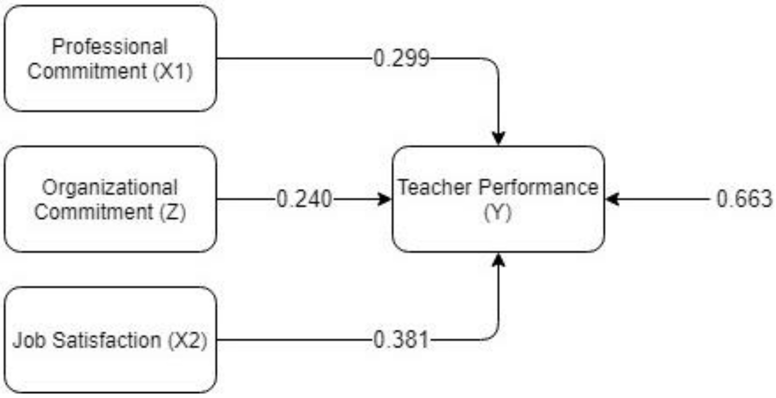

Figure 3. Sub-structure II Framework

Figure 3 shows the complete structural framework for sub-structure II equation. It can be seen on figure 3 as Professional Commitment, Job Satisfaction, and Organizational Commitment have standardized coefficient of 0.299, 0.381, and 0.240, respectively to Teacher Performance. And path coefficient of 0.663 ($\sqrt{(1-0.560)}$). Therefore, the structural equation of sub-structure II testing is as follow:

$$Y = 0.299X_1 + 0.381X_2 + 0.240Z + 0.663\varepsilon_2 \quad (2)$$

3.3 Indirect Impact and Total Impact

If the two structural models are combined, there will be an indirect impact of 0.080 (0.334 x 0.240) and total impact of 0.379 (0.299+0.080) experienced by the Professional Commitment on Teacher Performance through Organizational Commitment. There is also an indirect impact of 0.093 (0.389 x 0.240) and total impact of 0.474 (0.381+0.093) experienced by the Job Satisfaction on Teacher Performance through Organizational Commitment.

4. Conclusion

Job Satisfaction has a significant effect on increasing Organizational Commitment, Professional Commitment has a significant effect on Organizational Commitment, Job Satisfaction has a significant effect on Teacher Performance, Professional Commitment has a significant effect on Teacher Performance. Organizational Commitment affects Teacher Performance, Job Satisfaction indirectly affects Teacher Performance through Organizational Commitment, and Professional Commitment indirectly affects Teacher Performance through Organizational commitment.

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The Impact of Packaging and Labeling Elements on the Rural Consumers' Purchase Decision for Skincare Products in Bangladesh

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Abstract
Differences in socio-economic conditions, demographics, and infrastructural variances in the rural markets create substantial variances in the consumption patterns compared with the urban markets. As per a report of the World Bank, about 63 percent of the population resides in Bangladesh's rural areas as it constitutes a bigger market for the consumption of different products. The researchers envision identifying the impact of packaging and labeling elements in the decision-making evaluation for different skincare products. The research exploration comprises of four objectives, i.e., perception and attitude towards packaging and labeling elements for the rural consumers, measuring the relative impact based on the demographical changes, determining the sensitivity towards branding elements and communication portrayed, and the ability in identifying the original skincare products in comparison with the copy products in the rural markets. The researchers conducted surveys in the Mymensingh, Netrokona, Jamalpur, and Sherpur Districts of the greater Mymensingh Division of Bangladesh. A total of 390 responses were selected based on the non-probability sampling frame. The target sample age group was chosen between 13 to 54 years. Researchers developed a questionnaire in combination with close-ended questions along with simple dichotomies. For analyzing the outcomes, the researchers have applied a statistical method of the "Z-test" Technique. The researchers identified that the packaging and labeling of skincare products influence rural consumers' behavior. Different promotional strategies and trade marketing activities are recommended based on the findings, reinforcing the rural consumers' acceptance of skincare products.

Keywords: Copy Products, Packaging, Labeling, Rural Markets, Skincare Products, Trade Marketing

1. Introduction

Bangladesh, a developing country in South Asia, has an estimated population of 164.6 million, which includes around 63 percent of the total population living in the rural areas (Bangladesh Bureau of Statistics, 2019, The World Bank, 2020). With such a more significant population structure, Bangladesh has been a prominent marketplace for the different marketers to segment, target, and eventually position the different types of consumer-good offerings. The marketers of various consumer goods with multiple product offerings have seen a more significant potential among the customers to offer and sell the offerings to the urban consumers and the vastly diverse rural Bangladesh's population. Among such categories of consumer goods include the Fast-Moving Consumer Goods (FMCG) sector of Bangladesh, a significant and one of the most potential product marketing segments for its economy. According to Kotler, Keller, Koshy, & Jha (2014), they have opined that FMCG products are distributed using the Intensive Distribution channels, which refers to distributing the products to as many retail outlets as possible. As the consumers are buying these products frequently and with minimum buying effort, marketers make the products convenient to the consumers by delivering these products to their nearby retail outlets (Kotler, Armstrong, Agnihotri, & Haque, 2010). Therefore, these products sell on the front shelves of the retail outlets. The FMCG products move off the shelves of retail outlets quickly and entail continual replenishment (Law, 2016). Many multinational companies and local manufacturers have served the FMCG sector, supported by a robust distributional network and intense competition among the firms (Dhopatkar, 2011).

The FMCG sector covers household items (toiletries, washing bar soaps, detergents, air fresheners, etc.), personal care products (cosmetics, perfumes, etc.), foods, and beverages (Shamsher, 2014). More than three billion people represent rural markets. They comprise around 40 percent of the world's markets, whose present consumption is projected to be at least four trillion dollars per year (Kashyap, 2016). The FMCG sector in Bangladesh has experienced significant growth and market expansion in the last few years; qualitative and quantitative developments have mounted in the durable consumer goods (Hamid, Akter, & Mazumder, 2008). Bangladesh's rural areas hold a significant measure of the total industry sale generations, making it one of the diverse spheres in the educational attainment, income levels, occupation, socio-cultural factors, psychology, consumption pattern, etc. Thus, Bangladesh's rural markets are considered significant and potential markets for promoting and selling different consumer goods. The rural markets are diverse than urban markets in terms of multiple factors. Hence, different contemporary approaches and market-centered initiatives are necessary for penetrating the rural markets. Based on the market and marketing mix observations, many FMCG companies in Bangladesh are now applying different customer-friendly marketing policies. Attractive communication strategies in the rural markets to make their products acceptable and eventually ensuring their organizations financially profitable. In formulating cosmetic and personal care products, an ancient art, these products originally had ground minerals in an oil or grease. Men primarily used them to exaggerate their features during the battle, conduct tribal ceremonies, and differentiate, unlike tribes or clans, and women in ancient Egypt began to use such cosmetics (Wilmott, Aust, Brockway, & Kulkarni, 2005).

An article published by The United States Food and Drug Administration (U.S. Food & Drug Administration, 2016) stated that certain products that refer to as 'personal care products' are cosmetics. Items include skin moisturizers, perfumes, lipsticks, fingernail polishes, eye and facial makeup preparations, shampoos, permanent waves, hair colors, toothpaste, and deodorants. Skincare, the work of providing maintenance and treatment of the hygienic term of the skin under optimal conditions of sanitation and comfort for or attending to someone or something; "no medical care is included." Consumers can achieve skincare effectiveness through washing, cleansing, bathing, soaps, detergents, oils, etc. In an assortment of disease aspects, therapeutic and protective solutions and ointments are practical. Caring for skin is predominantly significant in various practices, facing sunlight, newborns, and recovering infections (Draelos & Thaman, 2006). The researchers envision skincare products (face cream, face wash, body lotion, talcum powder, and deodorant) for this study.

Previous researches have shown no specific agreement on the overall classification of packaging materials and package elements. There are also disagreements regarding the methods of packaging impact on consumers' purchasing decisions. Some researchers have explored the effects of packaging and its features on the consumers' overall purchase decisions (Underwood, Klein, & Burke, 2001). The packaging is an essential feature of the branding process, as it signifies a vital role in communicating the company's image and unique identity. The packaging design is chosen from the various elements and blended into a holistic strategy to achieve a sensory effect (Orth & Malkewitz, 2008). Nowadays, the packaging is considered an essential component in terms of promoting a product. Durable packaging and stimulating aesthetics can pursue the attention of potential customers, especially in rural areas. Packaging appeals to consumers' responsiveness towards a particular brand, increases its brand image, and stimulates consumers' perceptions about a product (Rundh, 2005). According to Walter, Cleff,

& Chu (2013), the consumer brand experience impacts the customer satisfaction level and, therefore, increases the loyalty towards any specific chosen brand. Manufacturers must understand the company's responses to consumer packages (Nancarrow, Wright, & Brace, 1998). The company should plan the packaging that covers some specific elements, such as the packet size, shape, packaging materials, package colors, writing patterns, use of texts, and brand marks for effectual recognition of any brand that the customers desire to purchase usefulness.

According to Walsh and Elsner (2012), certain areas in which the impact of media messages has been verified is in the goods and services markets. Several studies have shown that market experts significantly influence the behaviors of consumers in the market. These experts have market information regarding different products, especially new products in the market. The market experts have significantly influenced consumers' behaviors through mouth-to-mouth communication (Armelini & Villanueva, 2010). Besides, an essential aspect of trade marketing has been portrayed in this research paper. As mentioned by Cespedes (1993), 'Trade Marketing' practices are to integrate sales and marketing objectives and strategies. Trade marketing designs to ensure that the retailer's needs (e.g., in promotional terms) communicated internally by sales personnel are met by the brand marketing mix coordinated by marketing activities.

This research work is the extended version of a preceding research work conducted by the same researchers presented at an international conference. The researchers had shown previous research work in other study locations in Bangladesh. The key objective was to identify the rural consumers' perception of packaging and labeling to select personal care products (Rodrick, Islam, & Zadid, 2017). The current paper incorporates a new dimension of trade marketing activities to identify the decision-making process for selecting and purchasing different skincare products. Moreover, the researchers have identified four essential objectives, which were eventually analyzed and discussed in the report findings. The first objective was to illustrate packaging and labeling influences on rural consumers' perception and attitude towards their purchase decision for skincare products. Secondly, to measure the relative impact of packaging according to the Age, Education, and Average Income Level of rural consumers. Thirdly, to determine the rural consumers' understanding of the sensitivity towards the brand elements, product information, and instructions communicated on the skincare products' packaging. Finally, to identify their aptitude in identifying the original skincare products compared with the copy products available in the rural markets.

2. Literature

Lavuri & Sreeramulu (2019) have discussed that personal care products are those items that a purchaser utilizes for increasing his/her motivation. Personal care products include different sorts of refreshing and healthy skin items like powder, cold cream, decency cream, toothpaste, toothbrush, aroma, antiperspirant, hair oil, cleanser, cleanser, and all kind of infant care and radiance care items. People of different age groups regularly use personal care products. The products are deodorants, facial moisturizers, and creams (Wu, Bennett, Ritz, Cassady, & Lee, 2010). Few synthetic compounds are utilized in the assembling of personal care products for different purposes. For instance, parabens are used as additives considering their antimicrobial movement, and phthalates are used as solvents and fixative in scents (Soni, Carabin, & Burdock, 2005). According to a newspaper article (Farhin, 2007), in which she mentioned quoting a statement from the 'State of the Global Islamic Economy Report of 2016-17' that Bangladesh is the sixth largest Muslim cosmetics market. It exhibited that the estimated size of Muslim consumers' cosmetic spending in Bangladesh was \$2.5 billion in 2015. Therefore, in promoting any product, packaging plays a significant role in stimulating consumers' behavior and intention to purchase their desired products. In designing the packages, the manufactures can include essential components such as the color, typography, pictures, shape, size, and materials, which can be effectual for consumer inducements for product's purchase (Sonsino, 1990).

A product's shape plays a decisive role in emerging an image in the consumers' mindset and attitude. It enables the offerings into a prominent uniqueness in identity besides the materials used in packaging, affecting the consumers' perspective and inducing its acceptability (Sauvage, 1996). A study by Raheem, Vishnu, & Ahmed (2014), discussed the appropriateness and rich image content, or the attractive package color used on the package label brings the consumers a euphoric feeling and emotion. When the package shapes are easy to handle, it contributes to raising the consumers' attention and interest in purchasing the desired products. Further to a study conducted by Underwood, Klein, & Burke (2001) mentioned that the images on packages amplified the products' learning and measured as more positive inducements than verbal descriptions. Color, pictures, and graphical illustrations support a better interest among the younger members before the older family members; simultaneously, it entices those who cannot read the information represented on the product's packages. Therefore, pictures and images increase the shoppers' attention to the brand and reinforce product purchases. The result presented that the images on the product's packages were suitable for private label brands and less tire national brands whose strategic purposes were to expand the consumers' perceptions of the brand. Hine (1995) had identified that individuals experience the color characteristics in the product's packaging at three different levels: the physiological, the cultural, and the associational. The physiological aspect is universal and involuntary (e.g., the color red moves the pulse, while the color green decelerates it down). The cultural involvement relates to visual agreements recognized over time in various societies (e.g., the color black inducing images of wealth and elegance in Europe and the Americas). The associational involvement reflects the color prospects for a particular product category and product due to marketing efforts over time.

A study by Underwood (2003) supports the significance of pack size in the visibility of packaging and information display. Recent trends have shown that the consumers for the non-durable products are attracted to the packaging, which offers in small-sized packs, especially for the traditional consumer brands available at the marketplace. According to Bone & France (2001), it is evident that the graphical component of the package impacts consumer beliefs even when the verbal factor of the package provides more accurate and precise product attribute information to the customers. The research analysis presented that the label's graphical component could suggestively influence the attribute beliefs and purchase purposes even when the package's verbal part was held continuously and provided accurate product attribute information. Underwood (2003), in his research, has also highlighted that unlike the communication of positioning conducted through advertising, the packaging allows positioning to be transferred live to its prospective consumers much more promptly.

According to Keller, Parameswaran, & Jacob (2015), 'Packaging' is the term for designing and producing containers or wrappers for a product. From the manufacturers' and consumers' viewpoint, packaging must achieve numerous purposes: to identify the brand, convey descriptive and persuasive information, facilitate product transportation and protection, assist in at-home storage, and aid in product consumption. Marketers choose the aesthetic and functional components of packaging appropriately to comprehend the marketing objectives and achieve the consumers' needs more accurately. Aesthetic resemblances administer a package's size and shape, material, color, text, and graphics. Moreover, innovations in printing developments now permit eye-catching and attractive graphics that convey decorative and colorful messages on the package at the "moment of truth"—the point of purchase, eventually increases consumers' attractiveness towards the purchase and use of a brand and its product offerings in the marketplace. Typically, the primary purpose of the package was to hold and protect the product. Still, in recent times, packaging has become an imperative marketing tool to promote the product and the brand. The labels and logos range from modest tags attached to products to complex graphics that are part of the packaging. Thus, a product's label identifies the product or brand and defines multiple features about the product, and provides crucial information about the manufacturer, the location of the manufacturing unit, the manufacturing, and the expiry dates, the product's ingredients, the use directions, and the measures to use it safely. Along with these features, the label also supports to endorse the brand and engage customers. Many labels have become a significant component in broader marketing campaigns (Kotler & Armstrong, 2018).

The influence of packaging and labeling aspects and the elements can affect the consumers' purchase decision. Bassin (1988) has highlighted five essential areas in packaging that deliver value addition to the consumers; these are brand identification, advertisement at the point-of-sale, facilitating the consumers' handling the products, enhancing home storage facilities, and adding value by providing task assistance. When such factors impact consumers, it directly influences their purchase and consumption behavior. Another study projected an evident framework to direct the plan of operative communication in the product's packaging. Underwood & Ozanne (1998) suggested that a set of norms (truthfulness, sincerity, comprehensibility, legitimacy) could direct the compound task of designing good product packaging, and thus creates an optimistic view among the customers for choosing and purchasing their desired products from the markets.

The specific challenges that the manufacturers of skincare products face when they market and distribute their products in the rural markets are the general issues related to fake or counterfeit products available at the retail outlets. The prominent brand manufacturers and their product offerings face such complications in meeting the locally sold counterfeit products. Such a situation arises due to limitations in abridged penetration and insufficient availability of the branded products in many rural locations across Bangladesh. Thus, the local/regional manufacturers take this opportunity to use the original and genuine brands' names and make a counterfeit version of the product offerings to be retailed through the rural outlets. The original brand manufacturer sometimes cannot penetrate these rural markets and eventually deprived of selling the original product offerings to prospective customers, which results in generating fewer profits from the specific markets. Simultaneously, local/regional manufacturers earn more significant revenue by forging, misleading, or deceiving the original manufacturers' brands and products. Research by Lehman & Phelps (2005) defines that the copy or imitation of something as a carefully planned strategy, which is promised as factual and genuine to cheat another, is identified as a counterfeit product.

Kashyap (2016) described counterfeit or fake products into three different classifications: look-alikes, spell-alikes, and duplicates. When examining the look-alikes, it is evident that the color scheme and the package design cautiously resemble that of a popular and recognized brand. The label carries a different name and identity of the manufacturer. While exploring the identity of the spell-alikes, it is apparent that the colors and package designs are identical to that of the original brand; the brand name is precisely and cleverly misspelled. Many rural consumers, especially the consumers who cannot read and understand any foreign languages mentioned on the product's label, will be deceived into purchasing such counterfeit products. The biggest challenge that rural consumers face when they buy duplicate products. Duplicate products are the exact imitations of the original brands, such as the color scheme, package design, name on the wrapper, etc. The product details, such as the ingredients, brand name, manufacturer's name, etc., are also precise on the duplicate products. The price charged on the duplicate products is the same as the price of the original products. Thus, consumers are deceived through such false product offerings available at the rural markets. Rural consumers, when unaware of the consumption of these counterfeit or fake products, may lead to having a lowered product and brand belief towards the genuine original products, as they are not always able to differentiate between the original and copy products.

Manjunatha (2004) had emphasized that rural people's consumption pattern has been increasing in recent years. The rural markets are gradually evolving in terms of greater product acceptance and usage regularly. As rural consumers are now having access to different media and observing the urban lifestyle, they want to obtain urban life patterns in their purchasing behavior. Thus, reflected in their buying choices and products' acceptance in their daily life. There has been a substantial increase in product offerings of different skincare products in Bangladesh's rural markets. The rural consumers are readily consuming such products for themselves and their immediate family members.

3. Methodology

The researchers had developed a structured questionnaire with multiple-choice questions to gather preliminary information from rural consumers and retailers. The rural inhabitants were interviewed by one-to-one home visits, focus group discussions, and through mails. The researchers surveyed the selected localities in the greater Mymensingh Division, covering the Netrokona, Jamalpur, and Sherpur Districts, along with the Mymensingh District's representative areas. These three districts are located at both the eastern (Netrokona) and western (Sherpur, and Jamalpur) end of Mymensingh's Divisional town, with distinctive socio-cultural and economic environments. The researchers initially distributed the questionnaire to 507 potential respondents based on the non-probability sampling frame. A total of 429 respondents (85 percent) participated in the survey and returned the filled questionnaire with their independent opinions. After a comprehensive screening process, the researchers found that a total of 390 responses (91 percent) have correctly filled the given questionnaire with all the required fields required for the survey analysis.

The researchers mostly relied on such a sampling frame due to the feasibility, cost minimization, time constraints, identifying the limited objectives, and generalization. Non-probability sampling has different classifications for ensuring the sampling frame properly. In this research paper, the researchers intended the quota sampling structure, where the population clustered into mutually exclusive subgroups.

The accepted sample size of 390 has been determined as per the sample size determination theory by Krejcie & Morgan (1970). According to Krejcie and Morgan (1970) research findings, if the population size is above 100,000, then the sample size should be at least 384 to attain significant results. Researchers selected the target group based on the Age ranges between '13 to 54' and classified in the range interval of 6 years. The questionnaire was a combination of close-ended questions along with simple dichotomies. The researchers applied a statistical method of the 'Z-test' technique for analyzing the study outcomes to interpret the results. A 'Z-test' technique is a statistical test used to determine whether two population means are dissimilar, the variances identified, and the large sample size. The 'Z-test' Technique is a widely accepted model that is used for hypothesis testing.

4. Analysis and Discussion

To study the impact of the packaging and labeling elements of the different skincare products and assess the rural consumers' behavior pattern. The consumers were divided into three broad clusters based on their socio-economic characteristics such as Age, Level of Education, and Average Monthly Income components. All the components were divided into two broad groups. For the 'Age' component, 'Group-1' was classified from ranges '13 to 40', and subsequently, the Age ranges from '41 to 54' were classified into 'Group-2'. Researchers categorized one group from 'No Educational Attainment to Primary Level (up to the 5^{th} standard) for interpreting the 'Educational' perception. Researchers categorized another group from the 'High School' (6^{th} standard) up to the Masters' Level or with Vocational Educational' attainment degrees.

Finally, to figure out the significance of the average Income Level was further divided into two sets. One group is for the income earners up to Bangladesh Taka (BDT) 15,000/-, another group from Bangladesh Taka (BDT) 15,001/- to BDT 30,000/-. Researchers tested three different hypotheses by using the "Z-test" table to achieve a substantial result. How much these indicators influence rural consumers' buying behavior in terms of purchasing skincare products. Again, as the questionnaire contains both qualitative and quantitative natured questions, and to simplify these issues, it has been categorized into 'Positive' or 'Negative' Responses. Responses that support the statement are counted as 'Positive' Responses, whereas the responses which opposed the statement were counted as 'Negative' Responses. It is to note that the option 'Sometimes' was also counted as 'Positive' Responses. The researchers measured the questions in simple dichotomies containing valuable insights of the respondents as 'Positive' Responses.

Hypothesis: 1

Rural Consumers' 'Age' does not influence purchasing behavior by the packaging and labeling elements of different skincare products.

Table 1: Distribution of the Respondents' Responses based on the 'Age'

Group	Age	Number of Respondents	Positive Responses	Negative Responses
Group-1	13-19	42	30	12
	20-26	87	69	18
	27-33	73	68	5
	34-40	81	70	11
Total (G1)		**283**	**237**	**46**
Group- 2	41-47	55	33	22
	48-54	52	27	25
Total (G2)		**107**	**60**	**47**
Grand Total (G1+G2)		**390**	**297**	**93**

Hypothesis: 2
The Level of Education of rural consumers does not influence the packaging and labeling elements of the different skincare products.

Table 2: Distribution of the Respondents' Responses based on the 'Education' Attainment

Group	Number of Respondents	Positive Responses	Negative Responses
No Educational Attainment-Primary	110	81	29
High School to Masters/Vocational	280	165	115
Total	**390**	**246**	**144**

Hypothesis: 3
The average level of rural consumers' monthly income does not influence their preferences on the packaging of different personal care products.

Table 3: Distribution of the Respondents Responses based on the Average Monthly Income

Average Monthly Income	Number of Respondents	Positive Responses	Negative Responses
Up to BDT 15,000/-	169	125	44
BDT-15,001/ - BDT-30,000/-	221	140	81
Total	**390**	**265**	**125**

[USD 1= BDT 84.45 at the time of the survey]

For all three hypotheses, the Null Hypothesis is, $\mathbf{H_0: \pi_1 = \pi_2}$

If not a true alternative Hypothesis, $\mathbf{H_1: \pi_1 \neq \pi_2}$ **or** $\mathbf{\pi_1 > \pi_2}$

N1 = Population Group: 1
X1 = Positive Responses: 1
∴ P (1) = X (1)/ N (1)
Again,

N2= Population Group: 2
X2= Positive Responses: 2
∴ P (2) = X (2)/N (2)

Hence,
P = (N1P1+N2P2)/ N1+N2
= X1+X2/ N1+N2

"Z-Test Technique"
Z= P1- P2 ⁄ √{P(1-P) (1/N1+ 1/N2)

'Z-Test Technique' Testing for Hypothesis-1
N1 = 283; X1 = 237 P1= X1/N1 = 0.837
N2 =107; X2 = 60 P2= X2/N2 = 0.561
P = X1+X2/N1+N2
= (237+60) / (283+107)
= 297/390
= 0.762

Z = P1- P2 ⁄ √{P(1-P) (1/N1+ 1/N2)
= 0.837 - 0.561/√ 0.762 (1- 0.762) (1/283 + 1/107)
= 0.276/√ 0.762 (0.238) (0.013)
= 0.276/0.049
Z (1) = 5.63

‘Z Test Technique’ Testing for Hypothesis-2

N1 = 110; X1 = 81 P1= X1/N1 = 0.736
N2 = 280; X2 = 165 P2= X2/N2 = 0.589
P = X1+X2/N1+N2
= (81+165)/ (110+280)
= 246/ 390
= 0.631

Z = P1- P2 ⁄ √{P(1-P) (1/N1+ 1/N2)
= 0.736 - 0.589/√ 0.631 (1- 0.631) (1/110 + 1/280)
= 0.147 /√ 0.631 (0.369) (0.013)
= 0.147/0.055
Z (2) = 2.67

‘Z Test Technique’ Testing for Hypothesis-3

N1 = 169; X1 = 125 P1= X1/N1 = 0.740
N2 = 221; X2 = 140 P2= X2/N2 = 0.633
P = X1+X2/N1+N2
= (125+140)/ (169+221)
= 265/ 390
= 0.680

Z = P1- P2 ⁄ √{P(1-P) (1/N1+ 1/N2)
= 0.740 - 0.633/√ 0.680 (1- 0.680) (1/169 + 1/221)
= 0.107 /√ 0.680 (0.32) (0.010)
= 0.107/0.047
Z (3) = 2.28

Z’s critical value at α = 5 percent (0.05) level of significance │z cal 0.025│= 1.96 is the critical value. The calculated value │z cal │>│z cal 0.025│for all three cases calculated that the Null Hypothesis had been rejected. The alternative Hypothesis is accepted; therefore, the test is significant.

As this is a right-tailed test (H: $\pi > \pi_{2)}$ since $z \geq z\infty$, then the Null Hypothesis will be rejected.
Based on the ‘Z-test’ Technique, the result for the Hypothesis (s) stands as-

Hypothesis-1	**5.63**
Hypothesis-2	**2.67**
Hypothesis-3	**2.28**

As a result, the individual Hypothesis is more than 1.96. So, the alternative Hypothesis is accepted, which stands:
H_0: $\pi_1 \neq \pi_2$ or $\pi_1 > \pi_2$

Therefore, all three mentioned indicators, such as Age, Education, and Average Monthly Income of rural consumers, show a strong positive influence on their purchase decisions when buying different skincare products.

- From the study, the researchers have found that packaging strongly influences the purchasing behavior of rural consumers. The research findings evaluated that mostly the ‘Generation Y’ (born in-between 1978-1994) or the ‘Post-Millennials’ (born in-between 1996 and 2010); the age bases ‘13-26’ are attracted by the packaging of a product. The age group ranges from '27-40' consider packaging as a layer of protection. Finally, the last age group, '41-54,' believes that packaging is convenient in carrying the product. Through in-detailed discussions, the researchers have identified that rural consumers do not have comprehensive knowledge regarding the 'eco-friendly' packaging; the fact which allures them is that demolishing polythene packages can only protect the environment. They are unaware of the proper disposal of the packages or containers, which are considered harmful to the environment.

- Based on the responses, rural consumers' top preference is the 'Size' of the packaging. They have a prevailing perception that the greater size of the product develops a sense of quality in their mind, and the shape of the packaging considers as a second preference. The majority of rural women and young adults prefer such features on the product's shape. The in-depth discussions found that the inclination towards transparent packages motivates them towards their purchase action, as they can see the actual product's quantity and physical condition. Moreover, the rural consumers also prefer the packages' aesthetic designs and patterns; sometimes, they keep the empty packets by placing them in any prominent place of their home, easily seen by the others. It is, therefore, considered as a sense of belonging and pride among the same community residents.
- The majority of the respondents do not provide appropriate attention to the product label's instructions. The researchers identified that consumers do not always follow the label's instructions due to varied reasons through the research analysis. In such cases of purchasing different skincare products, they are aware of their frequent usages. Therefore, every time, they do not need to observe and read the mentioned information in detail. Secondly, if the brand is novel, then the other family members, especially the younger family members, help clarify products' usage. Finally, suppose the consumers do not know about the appropriate quantity to apply/use or any other product usage related issues. In that case, they do it by their intuition using their judgment and discretion. When a manufacturer launches a new product in the market, they seek out the retailer's assistance in understanding its proper usage. The rural retailers are often considered a 'Trustworthy' source of the products' information. Therefore, the manufacturers of different skincare products apply the 'Affiliative Selling' approach where there are a friendship and trustworthy relationship between the salesperson/retailer and the individual customer. Therefore, the seller becomes the customer's advisor for making the ultimate product choice (Tanner, Honeycutt, & Erffmeyer, 2009).
- A significant portion of the rural consumers does not read the 'Dates' mentioned on the product's label, such as manufacturing date, best date of usage, expiry date at the time of purchase. It is apparent to a large portion of the female respondents that they are not even aware that the different skincare products even contain an expiry date on the product's label. Moreover, few respondents portrayed that the product's label dates are not visible and readable sometimes. Generally, the younger family members, those who are school going, observe the products' imprinted details out of curiosity. They instantly inform the purchasers about the expiry date issues regarding the products. Therefore, it is evident that rural consumers strongly rely on the retailers' delegation for any information regarding the purchased skincare products' expiry date issues.
- Rural consumers prefer mini packets/sachets. Firstly, they believe they receive the best value for money through such package offerings. Also, most consumers believe that the availability of smaller packet sizes in rural markets eventually minimizes the products' misuse. The rural consumers can buy the smaller package versions, which are cost-effective to purchase and frequently used.
- The rural consumers come to know about the authenticity of a product from the rural retailers' support. The rural retailers maintain essential information about the products and need to share such information with the consumers. Secondly, by comparing the price with the actual products, rural consumers can identify whether the products are genuine. Due to varied purposes, rural consumers visit nearby towns and cities. On such visits, they can differentiate the actual products from the copy products.
- Moreover, it is not always possible for rural females in such a situation. They do not always get the opportunity to compare prices between the offerings available from the nearby towns/cities with rural areas from which they reside. A significant portion of the consumers can identify the differences by reading the manufacturer's name. Only 8 percent of the respondents mentioned that they could locate the copy products after their product usage compared to the original products used earlier. Researchers identified it from the findings; rural consumers find certain complications to distinguish the copy products

from the original products, for those who have not once used genuine original products.

- Around 39 percent of the rural consumers would keep using the copy products despite knowing that it is not an original and genuine product. Due to the multiple factors, sometimes due to the authentic original products' unavailability, the rural consumers would retain themselves using the copy products, which are readily available at the retail outlets in their proximity. Improper distribution of the actual products in the remote areas leads them to make such purchase decisions. Numerous renowned branded products are not always available in rural retail outlets. Thus, even though the consumers desire to use the original and genuine products, due to the brand’s unavailability, they are deprived of authentic branded products.
- Furthermore, the researchers also observed whether rural consumers are satisfied with using copy products. They are merely happy with the subjected benefits they had acquired when compared to their costs. Therefore, it was evident that rural consumers are more concerned about the ‘Affordability’ factor, eventually reinforcing them to use the copy products available at rural retail outlets. Even though they are relatively aware that they are using the copy products, they regularly purchase the copy products from their nearby outlets due to the cost-effectiveness factor in the product’s consumption.
- To identify the rural consumers’ expectations regarding any additional components or factors, they prefer to view their desired skincare products’ package labels. Around 33 percent of the rural consumers stated that they want to see the images of different renowned characters such as television celebrities, film actors, cricketers, national heroes, etc., on the product’s label. A significant portion of the respondents mentioned in favor of the moral messages from the experts and professionals. The middle-aged and the senior segment customers desire to see moral messages that they believe will encourage the young generation for good deeds and righteousness in their daily life. As skincare products are sensitive, experts’ views and suggestions and photographs on the product’s label are useful to make them aware. The rural consumers would be captivated with such inspirational communication approaches undertaken by the manufacturers of different skincare products.
- One of the very insightful investigations for the researchers was to identify the media access to rural consumers. To get a comprehensive idea about the thinking process regarding packaging and labeling aspects, and at the same time to get a sense of the further recommendations for the marketers. The researchers observed that the rural retailers’ ‘Word-of-Mouth’ communication medium impacts the consumers while making any product purchase decision. As rural consumers firmly believe that the retailers have direct correspondence and communication with the company agents and distributors, they will be well informed about any product-related issues and thus possess detailed insights about the product offerings. For such circumstances, rural consumers have developed an embedded reliance upon the retailers and consider them an imperative product information source. Moreover, as the retailer-customer resides from the same locality and knows each other personally, the customers’ patronage in belongingness elevates the belief that the rural retailers will not deceive them with any copy or sub-standard products.
- Further to the researcher’s observation, with the advancement in electrification in Bangladesh’s rural areas and raising the rural consumers’ affordability, they can now consume different electronic home appliances. Among such products is the consumption of Color Television, through which the rural consumers can view and get aware of the different skincare products. As the manufacturers of different skincare products are profoundly promoting their products by the television commercials broadcasted on the Local and International Television Channels, this increases the exposure towards the usage and availability of the different skincare brands in the local market. Consequently, such amplified exposure to the media and brands leads the consumers to try and adapt new and varied skincare products. Such a media exposure level was not evident in the past years, considering that still in rural areas, Generation X (people born between 1965-1977) listens to different radio advertisements. Young adults and educated rural consumers now have direct access to the Internet through smartphones in rural villages and towns. Through such digital platforms and Internet connectivity, many rural consumers have been exposed to usage benefits and brands’ availability of the different skincare products in the Bangladesh market. As internet penetration, mostly in rural areas, had low penetration until recent years, the online platform is progressively getting widespread among the mass people. The users are getting adapted to the usage and benefits of online and digital media.

5. Recommendations

Based on the findings mentioned above, the researchers would like to suggest a few recommendations which can be implemented by the marketers for further development in this category:

- The skincare products' manufacturer should design the packages so that the product contents can be easily visible from the outside. As the rural consumers are attracted and gain the self-assurance to purchase skincare products by observing the external product design and outlook and the products' internal contents from the outside; therefore, increasing their affinity towards the product. Thus packaging should be made transparent. Also, to ensure the consumers' fascinations, a colorful and lucrative packet design having the celebrity images on the product's label can genuinely enhance the consumers' recognition in purchasing their desired skincare products from the rural retail outlets.
- Manufacturers should implement powerful marketing strategies for remote rural areas and localities with multiple and diverse sales and distribution channels for better and effective product availability. Such actions will reinforce the customers to purchase the products at ease and use them as per the requirement. It is perceived that the printed information about the manufacturer, manufacturing and expiry dates, listed price, and other visual illustrations sometimes get faded due to extensive transportation and delivery scratches. The mentioned details and unique holograms provided with proper color coding and in more vivid forms. It does not get easily worn-out, and rural consumers can read the given information appropriately. Simultaneously, the local language or sales instructions in showcasing and merchandising products in the outlets can be made more useful for the diverse rural markets.
- Nowadays, monitoring the sales and marketing of the different copy products in terms of brand name, package and label designs, etc., is a primary concern for marketers, especially in the rural markets. Due to the company's sales supervisors or representative's infrequent store visits, slow delivery process, and supply chain arrangement losses, the original manufacturers cannot adequately contact the sales point. For such a crucial reason, the local or regional companies' unethical practices are taking such an opportunity to market their copy products to rural consumers. Sometimes, they make the salespersons/retailers biased by offering attractive sales commissions and other incentives to pursue rural consumers to purchase their products. The original manufacturers need to ensure more effective sales and distribution networks and regular market follow-ups in rural areas to eradicate this problem. Therefore, the copy products are eventually diluting the original brands of the different skincare products, which is considered a significant threat to the original brand manufacturers. Such initiatives may include the sales representatives to visit the retail outlets at least once every fifteen days for the fresh new stocks to be replenished on the retailers' shelves and thus to make more prominence of the original and genuine skincare products. Regular and constant monitoring of the company's sales representatives can lower the risk of facing the copy products' threats in rural areas.
- For catering to the need of the rural consumers, the marketing of mini-packs or sachets might be the most convenient size options, as the smaller pack sizes will easily adjust with their daily or weekly buying capacity for the multiple family members' diversified requirements. Consequently, marketers should enhance the products' quality and value proposition based on rural consumers' preferences to afford and use their desired products quickly.
- As rural consumers are price-sensitive, the manufacturers must establish sensible pricing points related to the brand and product positioning. For the significant launch of new skincare products in the rural markets, the 'Penetration Pricing' strategy can be more productive to attract rural customers quickly. However, the 'Bundle Product Pricing' strategy can also be considered an effective pricing strategy to attract rural consumers (Kotler & Armstrong, 2018). This concept is also instrumental in utilizing the old stocks or for those not sold as a single piece to clear off the rural retail shelves within the shortest possible time frame.
- Rural Retailers are one of the pivotal marketing intermediaries in evolving the business into their markets. They are selling the products and work as a vital source of information in assisting the rural consumers towards product selection and consumption. Therefore, companies should implement different prolific promotional strategies to entice these rural retailers and persuade them by providing various trade allowances and benefits to promote the original brands to rural consumers. Introducing the 'Quantity Purchase Scheme' (QPS) might be a possible solution to ensure the original products' presence in rural

outlets. The attractive volume incentives or striking sales schemes would motivate the retailers to invest more in keeping and selling the original products' stocks.

- In the rural markets, the packaging and labeling elements of different skincare products are sometimes considered more compelling than the general mass advertisements. It can set a strong brand identification and have a superior positioning in the consumers' minds. According to rural consumers' common psychology, they believe in what they visually see and are not always attracted to the marketers' traditional branding and communication strategies. Live product demonstration sessions, customer engagement programs, free trial campaigns, and other programs induced the marketers are very much beneficial in pursuing the consumers' interest and eventually to promote the products. Therefore, the skincare products' marketers can implement diverse evocative market activation programs to bring the rural consumers and the retail channel members in a common platform. Such initiatives can enhance their mutual agreements and improve customer relationship management practices between the parties.
- Another essential practice to attract rural consumers is through creating 'Opinion Leaders' in rural communities. An opinion leader is a person whose words and actions informally impact others' efforts or attitudes (Kashyap, 2016). In rural schools or colleges, the skincare products' manufacturers can assign campus ambassadors and organizing experience sharing sessions, which can encourage product consumption and promote the usage benefits among the students or the youth community. On different academic and cultural observances, sponsoring such events would enable the manufacturers to arrange various consumer hands-on feel engagements, which will develop credibility among the consumers regarding the skincare products' usage benefits. On such occasions, manufacturers should envision selecting their known and trustworthy faces such as the local school principals, renowned teachers, local sportspeople, community leaders, and professional experts as their spokespersons to disseminate the proper use of the products.
- Another good practice to increase the likeability and promote the products by applying alternative trade marketing activities. Deploying skilled or semi-skilled unemployed rural youths and women for the door-to-door marketing of the products can be an appropriate strategy to receive its highest promotional coverage to the rural consumers. Simultaneously, society is benefitted as the unemployment rate reduces, and people have a substantial income source. The rural youths and the women benefits as such approaches support their livelihood and thus provides a source of income for their family members residing in the rural areas. Among such a popular model in Bangladesh is the concept of the "JITA Bangladesh – A CARE Social Business" model, one of the social project initiatives by CARE in Bangladesh. The project purposes of generating sufficient income for marginalized rural women by establishing key supply-chain associations and developing informal market systems. Utilizing rural women as independent sales agents, JITA supports linking the commercial manufacturers to the under-served customers of the economic pyramid (BoP) segment with enhanced quality health, hygiene, and nutrition products (JITA Bangladesh, 2020). These Rural Salespeople (RSPs) function on door-to-door or store-based selling of different FMCG and other health-related products. They directly interact with other rural women and targeted customer groups with their intended sales approaches. Based on such a basis, the consumers' queries related to the product's usage and brand's information can be answered by these RSPs. Eventually, they will be making spot sales to the prospective customers of skincare and other frequently purchased products.

The researchers can finally conclude the analysis of the data and findings by engulfing the study's objectives. The rural consumers' perception towards packaging and labeling elements are identified and evaluated by the rural consumers' decision-making procedure from the data analysis. The rural consumers from the more significant Mymensingh Division perceive packaging as an essential element of protection simultaneously; they perceive packaging and labeling to promote the product. Packaging and labeling elements of the products induce the rural consumers to be delighted with the new shape and the packages' color. The product's reliability is derived from the packaging of a product and influences the rural consumers to try the product offerings sold in the rural markets.

6. Conclusion

Future researches should incorporate other aspects of packaging, such as encompassing specific shapes and sizes that the consumers prefer for which product category. It can be mentioned that product category wise, rural consumers' preferences regarding their desired shape and size will contrast. The researchers can focus on a detailed understanding of consumers' preferences towards packaging with different product categories and incorporate how packaging helps consumers recall and recognize a brand under multiple circumstances. A significant number of scopes to research on the products' packaging and labeling aspects are yet unexplored and possess a more substantial dimension for the marketers to explore from Bangladesh's rural markets.

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Can Digital Technology Really Contributes to Purchase Power? The Case of Digital Hospitality Application by Finnet Indonesia Corp

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Abstract
Every producer always tries to achieve the goals and objectives through the products they produce. The resulting product can be sold or purchased by the end consumer at a price level that provides long-term corporate profits. It is in this framework that each producer must think about marketing its products, long before the product is produced until the product is consumed by the end consumer. This study aims to find out the effect of Brand Image and Price on the Purchasing Power of Property which is mediated by Digital Technology. This study used 91 respondents who were tenants of the Premium Cluster Apartments who used digital technology applications. This study uses Brand Image and Price as independent variables, Digital Technology as a mediating variable, and Purchasing Power as the dependent variable. Data obtained using a questionnaire and processed and analyzed using path analysis techniques. The results show that Brand Image has a positive and significant effect on Digital Technology, Price has a positive and significant effect on Digital Technology, Digital Technology has a significant effect on Purchasing Power, Brand Image has a positive and significant effect on Purchasing Power, Price has a significant effect on Purchasing Power, Digital Technology has a significant positive effect on mediating between Brand Image on Purchasing Power, Digital Technology mediates between Price and Purchasing Power.

Keywords: Brand Image, Digital Technology, Purchasing Power, Price.

1. Introduction

1.1 Introduction

Every producer always tries to achieve the goals and objectives through the products they produce. The resulting product can be sold or purchased by the end consumer at a price level that provides long-term corporate profits. Through the products it can sell, the company can guarantee its life or maintain the stability of its business and develop. It is in this framework that each producer must think about the marketing management activities of its product, long before this product is produced until the product is consumed by the end consumer.

Marketing management is the process of analyzing, planning, organizing, and managing programs that include conceptualization, pricing, promotion and distribution of products, services and ideas designed to create and maintain beneficial exchanges with target markets to achieve company goals (Suparyanto & Rosad 2015). Then Marketing Management can also be defined as the activity of analyzing, planning, implementing, and controlling programs designed to form, build and maintain profits from exchanges through target markets in order to achieve organizational (company) goals in the long term (Saidani & Ramadhan 2013). Meanwhile, according to Kotler (2005), Marketing Management is referred to as the process of planning and implementing, thinking, pricing promotion, and channeling ideas for goods and services to create exchanges that meet individual goals in the organization. So it can be concluded that Marketing Management is an overall system of business activities aimed at planning, pricing, promoting, and distributing goods and services that satisfy the needs of both existing and potential buyers, and is the result of the work performance of business activities related to flow of goods and services from producers to consumers until the buying process occurs.

This study focuses on the analysis of one of the Telkom Group incubation products represented by Finnet Indonesia Corp., which discusses digital technology service solutions with the Finpay Invoice product brand as a digital technology factor, mediating the variable brand image and price that affects the purchasing power of property which some people use as profitable long-term stock investments. Specifically, the product being analyzed is one of the products of Telekomunikasi Indonesia Corp., namely Digihos (Digital Hospitality) and Finnet Indonesia as a subsidiary of Telkom was appointed to complete the Digital payment system, launched in mid-2017, this product was created as a digital payment technology solution for the property industry for the Apartment & Premium Cluster Segments nationally.

Finpay Invoice service is a digital technology application prepared for the needs of the property sector for the Apartment & Premium Cluster Segments as a payment tool for apartment electricity management fees that are used by managers (building management) and property owners (tenants) as a means of digital payment (online). But the use of the Digihos application is not optimal as can be seen in the following table.

Table 1: Target and Actual Achievements of each Digihos Operational Area

Operasional Area	**Target**	**Q1 2020**	
		Actual	**%**
Sumatra Island	387.897	104.732	27%
Jakarta, Bogor, Tangerang, Banten	820.453	287.159	35%
West Java	155.255	100.916	65%
Central Java	101.325	67.888	67%
East Java	376.128	263.290	70%
Kalimantan	124.100	69.496	56%
Sulawesi	97.837	36.200	37%
Total Nasional	**2.062.995**	**929.681**	**45%**

Sales Marketing report data of Finnet Indonesia can be seen in the table above, Growth Metric Acquisition shows the insignificant growth in achievement during the first quarter of 2020. Only 45% of the potential 100% occupancy target of more than 2 million Apartments and Premium Clusters. Achievement penetration level nationally. Sales Achievement deficiency is calculated based on the potential for residential development.

Digital Payment is moving dynamically towards Digital services with various segments and other changes as a result of developments and is a change in human habits in conducting financial transactions and payments, the existence of payment banking will decrease, the role of payment counters and banking branch offices will gradually be replaced by electronics banking such as text banking, mobile banking, internet banking and payment counters will be replaced by mobile payments or mobile channels. When viewed in terms of efficiency and time effectiveness, people prefer to use digital transactions. In the future, Bank customers will no longer need to come to the bank. All transactions can be done in your hand, transact safely, anywhere and anytime using a mobile phone.

Digital technology is growing rapidly, increasing global competition and the dynamics of market tastes, causing the ability to survive for companies is important so that they can compete in the market and avoid unfair competition (Colgate, 1998). Companies have the opportunity to succeed by creating new products or risk failing in business (Cooper & Kleinschmidt, 2000). New product development is essential to achieving growth and success for any company. This is a critical factor, especially in high-tech industries, such as the telecommunications industry, where technological changes are constant (Barczak, 1994). Meanwhile, a good new product performance will maintain the company's survival (Cooper & Kleinschmidt, 2000).

Calantone (1993) argues that not all products can be successful in the market. In the American market the product success rate is 54%, then 60% in the Japanese market and 55% in the UK market. Every 100 projects developed, 63 of which failed then 37 were launched, of which 25 were successful and 12 failed in marketing (Cooper & Kleinschmidt, 2000). This phenomenon can also be seen in the marketing of the Digihos application, where achievement is only 45% of the 2020 target. This is closely related to consumer behavior in general.

Purchasing power (willingness to buy) is part of the behavioral component in the attitude of consumption. According to Kinnear & Taylor (1995), purchasing power is the stage of consumers' tendency to act before buying decisions are actually implemented. Purchasing power can also be defined as the possible pattern of buyers who intend to buy a product (Doods, Monroe and Grewal: 1991). According to Keller (1998), consumer purchasing power is how likely it is that consumers buy a brand or how likely it is that consumers buy a brand or how likely it is that consumers move from one brand to another. Meanwhile, Mittal *et al*., (1999) found that the function of consumer interest is product quality and service quality. So Assael (1989) and Cobb-Walgren (1995) say that the purchasing power caused by the attractiveness of the product or service being offered is a mentality for consumers to reflect on the plan to purchase a product for a particular brand. In addition, Boyd & Mason (1999) also argues that an increase in the attractiveness of a product that has been determined can increase the level of consumption. In general, consumer purchasing decisions take place in several stages, as follows.

Figure 1. Steps of Buying Process in Consumer Behavior

The buying process begins when the buyer senses a difference between his real state and the desired state. The satisfaction it gets is the main source of information that consumers will seek out afterward purchasing decisions. After that comes an alternative assessment of the selected product. A consumer who will carry out his desire to buy something will make five types of purchasing decisions, including decisions about brands, prices, decisions about quantities, decisions about when to buy and decisions about how to pay. After purchasing a product, consumers will experience a level of satisfaction or consumer dissatisfaction with a product that will influence subsequent behavior. Consumers will also take actions after purchasing and use these products that get marketing attention. Marketing tasks do not end when the product is purchased but continue until the period after purchase (Kotler & Armstrong, 2001).

In addition, price is one of the consumer factors in determining purchasing decisions on products where the price is the amount of money charged for a product or service, or the amount of value exchanged by consumers for the benefits of owning or using the product or service (Kotler & Armstrong: 2001). Purchasing property as an offer of profitable long-term stock investment is inseparable from the brand image factor of the product where brand is a name, term, sign, symbol, or design, or a combination of these which are intended to identify the product or service of one or a group of sellers and distinguish it from other products (Kotler & Armstrong, 2001). The desire to buy from customers is influenced by the perception of the product or it is called the Brand Image itself, research conducted by Moorman (1995) shows that the function of behavioral intention or consumer interest is a function of the quality of the product or service, so consumers will be more interested in the product. Based on the results, the higher the quality of a product, the higher the purchasing power of the product.

1.2 Prior Studies

There are several previous studies, one of which is research which aims to analyze the factors that influence quality and satisfaction in purchasing intention to consumers in the area studied. The problem has been identified that refilling consumer purchases is still low (Sulistyo, 2017). Then further research by Ghanimata & Kamal (2012) shows that Price, Product Quality, and Location have a positive and significant effect on purchasing decisions where location has a very large influence compared to price and product quality. Furthermore, research by Walukow *et al*., (2014) states that Product Quality, Price, Promotion has a positive and significant effect simultaneously on consumer purchasing decisions, but partially location does not affect consumer purchasing decisions. In addition, there is previous research by Dewa (2009) which shows that the model is quite good. And the variables of product quality, promotional attractiveness and price show a positive and significant influence on purchasing power.

1.3 Hypothesis Development

Brand image is what consumers think and feel when they hear or see a brand. Image, in line with technological developments better known as the Internet of Things, companies will find it easier to provide the information needed by consumers to build a positive image. Digitization allows digital processes to encourage stronger opportunities to transform and change business capital, so it is concluded that the influence of digital technology on the brand image of a product has an important role in the success of business mechanisms to be accepted by consumers, so digitization (conversion), digital (process) and transformation digital (effect) accelerates and illuminates what is already there and is taking place horizontally and the processes of global change in society (Khan, 2016; Collin *et al*., 2015).

H_1: Brand Image has a positive effect on Digital Technology.
Digital technology has at least brought about tremendous changes in terms of connectivity, divergence, identity, knowledge, and business and trade, one of which is the property sector and the price of a product packaged in digital technology facilitates access to information received by consumers, so that the company makes it easier to monitor the price set by competitors so that the price determined by the company is not too high or vice versa, so that the price offered can lead to consumer desire to make a purchase.

H_2: Price has a positive effect on Digital Technology.
Purchasing decisions are a problem-solving approach to human activities to buy goods or services in fulfilling their wants and needs which consists of recognizing needs and wants, searching for information, it can be concluded that there is a positive relationship between Digital technology is stronger when new business models are packaged using digital technology so that creating a positive image is considered a strong stimulus for consumers to decide on a purchase.

H_3: Digital Technology has a positive effect on Purchase Power.
Brand image is the consumer's perception of the company or its product. With the brand image of the company for the products produced by the company, it is hoped that it can cause consumers' desire to make purchases.

H_4: Brand Image has a positive effect on Purchase Power.
Cheap or high price of a product is very relative. To say this it is necessary to compare it with the price of a similar product that is produced or sold by another company. Companies need to monitor the prices set by competitors so that the prices set by the company are not too high or vice versa, so that the price offered can lead to consumers' desire to make purchases. Price will influence purchasing decisions if the price of a product is in accordance with quality, affordable, and in accordance with its benefits.

H_5: Price has a positive effect on Purchase Power.
Consumers make purchases of a product after understanding and being interested in what is offered, digital technology is a means for consumers to get information on a product to convey the Brand Image that has been built.

H_6: Brand Image has a positive effect on Purchasing Power mediated by digital technology.
Digital technology is a worldwide method of exchanging information and communicating through a network of connected computer cloud servers). Internet marketing (internet marketing) is marketing that uses Internet technology as a channel for delivering message content to many people simultaneously and instantaneously within a certain period of time.

H_7: Price has a positive effect on Purchasing Power mediated by Digital Technology.

2. Method

This research uses a quantitative approach. The quantitative approach emphasizes meaning, reasoning, the definition of a particular situation (in a certain context), examines more things related to everyday life. A qualitative approach, emphasizes the process compared to the final result, therefore the sequence of activities can vary depending on the conditions and the number of symptoms found. Research objectives are usually related to things that are practical. This study uses primary data, which is data collected by researchers directly from its main source, this data collection uses a questionnaire given to 91 respondents. This study uses Brand Image and Price as independent variables, then Digital Technology as the mediating variable, and Purchasing Power as the dependent variable.

2.1 Research Design

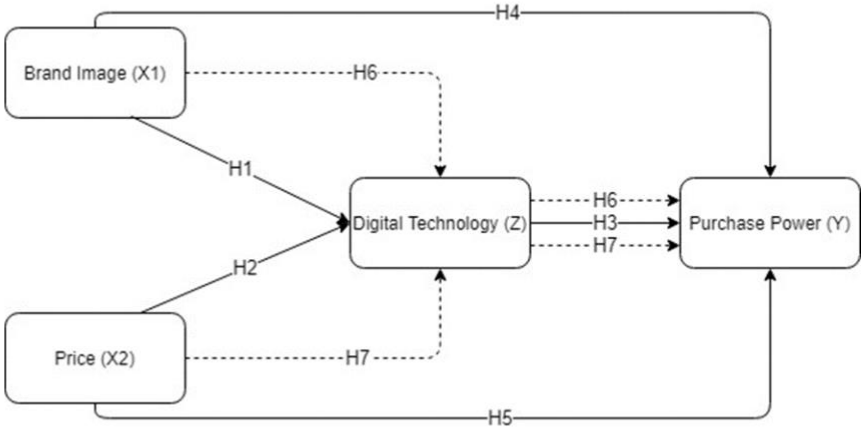

Figure 2. Research Framework

From figure above, the hypothesis 6 and 7 goes through Digital Technology, where in next segment of this study, will be calculated the indirect impact from both independent variables to dependent variable. Figure 2 also represent structural flow of the equation that will be divided further into two separate sub-structure.

2.2 Path Analysis

This analysis is used in examining the magnitude of the contribution shown by the path coefficient on each path diagram of the causal relationship between independent variables on moderation and its impact on the dependent variable. Path analysis is a technique for estimating the effect of the independent variable on the dependent variable from a set of observed correlations, providing a pattern of causal relationships between variables. This path analysis technique will be used in testing the amount of contribution (contribution) shown by the path coefficient on each path diagram of the causal relationship between the independent variable on moderation and its impact on the dependent variable. Correlation and regression analysis which is the basis for calculating the path coefficient.

There are three stages in conducting path analysis, namely formulating hypotheses and structural equations, calculating the path coefficient based on the regression coefficient, calculating the path coefficient individually.

3. Results

3.1 Sub-structure I Test

The sub-structure test 1 consists of Brand Image, Price, and Digital Technology. Where the following are the results of data processing for sub-structure testing I.

Table 1. Model Summary of Sub-structure I

Variables	Unstandardized Coefficients		Standardized Coefficients	t-value	p-value	R-square
	beta	Std. Error	beta			
Constants	1,684	0,169		10,019	0,000	0,401
Brand Image	0,272	0,046	0,482	5,877	0,000	
Price	0,169	0,047	0,297	3,619	0,000	

From table 1 above it could be seen that Brand Image and Price, both have direct and significant impact to Digital Technology by their p-value of 0.000 and 0.000, respectively. Digital Technology is influenced by Brand Image and Price simultaneously by 40% based on the R-square value, and the remaining 60% is influenced by other factors. Every increase in Brand Image by one point, it will influence Digital Technology by 0.272, and vice versa. Every increase in Price by one point, it will also influence Digital Technology by 0.169, and vice versa.

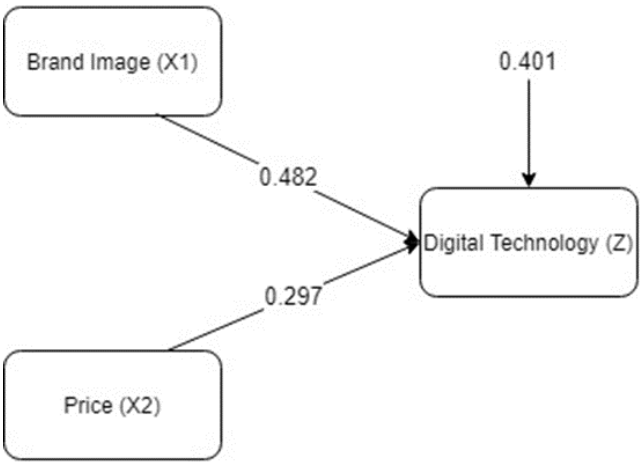

Figure 2. Sub-structure I Framework

Figure 2 shows the complete structural framework for sub-structure I equation. It can be seen on figure 2 as Brand Image and Price have standardized coefficient of 0.482 and 0.297, respectively to Digital Technology. And path coefficient of 0.774 ($\sqrt{(1-0.401)}$). Therefore, the structural equation of sub-structure I testing is as follow:

$$Z = 0.482X_1 + 0.297X_2 + 0.774\varepsilon_1 \quad (1)$$

3.2 Sub-structure II Test

The second sub-structure test consists of the Purchasing Power, Brand Image, Price, and Digital Technology variables. Where the following are the results of data processing for sub-structure testing II.

Table 2. Model Summary of Sub-structure II

Variables	Unstandardized Coefficients		Standardized Coefficients	t-value	p-value	R-square
	beta	Std. Error	beta			
Constants	0,770	0,236		3,266	0,002	0,540
Brand Image	0,180	0,053	0,286	3,400	0,001	
Price	0,170	0,049	0,266	3,466	0,001	
Digital Technology	0,415	0,100	0,372	4,159	0,000	

From table 2 above it can be seen that Brand Image, Price, and Digital Technology have direct and significant impact to Purchasing Power by their p-value of 0.001, 0.001, and 0,000 respectively. Purchasing Power is influenced by three factors as follow, Brand Image, Price, and Digital Technology simultaneously by 54% and the remaining 46% is influenced by other factors. Every increase in Brand Image by one point, it will influence Purchasing Power by 0.180, and vice versa. Every increase in Price by one point, it will influence Purchasing Power by 0.170, and vice versa. Every increase in Digital Technology by one point, it will influence Purchasing Power by 0.415, and vice versa.

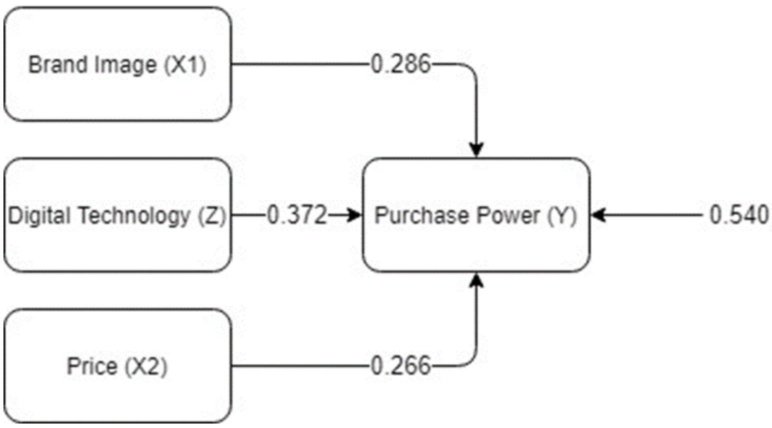

Figure 3. Sub-structure II Framework

Figure 3 shows the complete structural framework for sub-structure II equation. It can be seen on figure 3 as Brand Image, Price, and Digital Technology have standardized coefficient of 0.286, 0.266, and 0.372, respectively to Purchasing Power. And path coefficient of 0.678 (√(1-0.540)). Therefore, the structural equation of sub-structure II testing is as follow:

$$Y = 0.286X_1 + 0.266X_2 + 0.372Z + 0.678\varepsilon_2 \quad (2)$$

3.3 Indirect Impact and Total Impact

If the two structural models are combined, there will be an indirect impact of 0.179 (0.482 x 0.372) and total impact of 0.465 (0.286+0.179) experienced by the Brand Image on Purchasing Power through Digital Technology. There is also an indirect impact of 0.110 (0.297 x 0.372) and total impact of 0.376 (0.266+0.179) experienced by the Price on Purchasing Power through Digital Technology.

4. Discussion

Brand Image (X1) has a positive and significant effect on Digital Technology (Digihos) (Y). The Apartment Premium Cluster which has been developed using digital technology (Digihos) owned by Finnet Indonesia Corporation, which provides convenience and creates various lifestyle changes so as to provide Product Quality, Service Quality, and Brand Image is well received by the public and feels satisfied with the products they have, so that Customer Satisfaction is created which is one of the main keys of success in business. When consumers are satisfied with a product that is sold by the company, the next hope that the company wants is to grow Customer Loyalty, which is the most difficult part of the business world. According to Tjiptono & Chandra (2012), customer loyalty is a re-purchase of a certain product or brand that is the same over and over again.

Price (X2) has a positive and significant effect on Digital Technology (Y) at the Apartment Premium Cluster. There is an increase in the use of technology services that create convenience, especially for young people (millennials), so that the effect of price variables is significant on technology development in determining market strategies and prices to be set by companies so that they can compete with competitors

Digital Technology (Y) has a significant effect on Purchasing Power (Z). According to Grabner-Krauter & Kaluscha (2003) shopping via the internet has its own uniqueness compared to traditional shopping, namely in terms of uncertainty, anonymity, minimal control and potential in taking opportunities. With access to information on products being sold, buyers need not be afraid to make transactions through certain application platforms.

Brand Image (X1) has a positive and significant effect on Purchasing Power (Z). Where this states that a seller who has a high brand image will generate interest in buying from consumers.

Price (X2) has a significant effect on Purchasing Power (Z). This means that if the customer has a good perception of the price and service received by the customer as expected, then the customer will make a repeat purchase.

Digital Technology (Y) has a significant positive effect on mediating between Brand Image (X1) and Purchasing Power (Z). The results of the study state that the recommended brand image through technology will have an impact on purchasing power, especially in the consumer market, where there are direct and indirect effects of digital technology as a means of information media that can provide convenience and knowledge about products where consumers can be solicited by simply accessing digital information needed and easily understood by market consumers.

Digital Technology (Y) mediates between Price (X1) and Purchasing Power (Z). The ease of obtaining information through digital media technology is one of the keys to the success of a product brand image, reaching the consumer market. Meanwhile, there is a management principle that the ease of obtaining product information and the strategy for reducing profits applies to higher quality, because the number of buyers who are willing to pay for higher quality is decreasing. So that the company should not rush to the conclusion that the company needs to design the highest quality. Thus it can be concluded that price, ease of access to product information and product quality have a relationship with Purchasing Power.

5. Conclusion

Brand Image has a positive and significant effect on Digital Technology. Price has a positive and significant effect on Digital Technology. Digital technology has a significant effect on purchasing power. Brand Image has a positive and significant effect on Purchasing Power. Price has a significant effect on Purchasing Power. Digital technology has a significant positive effect on mediating between Brand Image and Purchasing Power. Digital technology mediates between Price and Purchasing Power.

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The Ramifications of the Treasury Single Account, the Ifmis Platform, and Government Cash Management in Developing Economies in the Wake of the Covid-19 Pandemic: Ghana's Empirical Example

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Abstract
In recent years, the combined effects of inflation, recession, high-interest rates, new investment media and technological advances in information processing have made "Cash Management" an increasingly important and complex subject (IMF, 2001; Ter-Minassian and Parente, 1995). At times, the desire and effort to squeeze out the most from every dollar and to minimise idle cash balances has become an obsession with many organisations and countries. Therefore, effective and efficient Cash Management has become a "sine qua non" for the success of any business organisation (Horcher, 2006a; White, 2006). And Countries, "as Corporate Entities", are no exceptions to this basic fundamental business principle (Wood & Sangster, 2012). The Theoretical Framework of this study was underpinned by the Stakeholder Theory (Freeman, 1984), the Financial Management Theory (Hayes and Nolan, 1974; Kingston, 1973), and the Modern Money Theory (Friedman, 1964; Keynes, 1930; Mitchell-Innes, 1914). We conducted a cross-sectional research through non-probability and purposive sampling with 200 respondents. Our face-to-face interviews, structured closed-ended and open-ended Questionnaires which were administered online through email application via Google Forms (as a result of the novel, dreaded, and disruptive Covid-19 pandemic), coupled with PETS (Khan and Pessoa, 2010; Reinikka and Svennson, 2006) resulted in startling revelations. Our major finding was that a government lacking an efficient and effective control over its cash resources will definitely pay for its institutional deficiencies in multiple ways (Ahmed, 2016).

Keywords: Treasury Single Account (TSA), Public Financial Management (PFM) System, Modern Money Theory, Ministry, Department, and Agencies (MDAs), Metropolitan, Municipal, and District Assemblies (MMDAs), Covered Entities, Appropriation Act, Consolidated Fund, Zero-Balance Accounts (ZBAs), Integrated Financial Management Information System (IFMIS), Ghana Integrated Financial Management System (GIFMIS), Bank of Ghana (BoG)

1. INTRODUCTION

Governments all over the world continue to face intense pressure on their cash flows in the face of dwindling revenues, and the need to meet ever-increasing statutory and social responsibilities (Fitzsimons, 2009; White, 2006). Several developing and low-income countries have fragmented systems for handling government cash receipts and payments. In these countries, the ministry of finance/treasury lacks a unified view and centralised control over government's cash resources. As a result, this cash lies idle for extended periods of time in numerous bank accounts held by "revenue collecting agencies", while the government continues to borrow to execute its budget (Central Bank of Nigeria, 2014; Horcher, 2006b).

Government banking arrangements are an essential factor for an effective and efficient management for the control of government's cash resources. According to Ter-Minassian and Parente (1995), such banking arrangements should be designed to minimise the cost of government borrowing, and maximise the opportunity cost of cash resources. This requires ensuring that all cash received is available for carrying out government's expenditure programmes, and making payments in a timely manner (Akande, 2015; CBN, 2015).

As already indicated earlier, a government lacking effective and efficient control over its cash resources can pay for its institutional deficiencies in multiple ways (Pattanayak and Fainboim, 2010). This is because firstly, idle cash balances in bank accounts often fail to earn the requisite market-related interest. Second, the government, not being aware of these idle cash resources or balances, incurs unnecessary borrowing costs in raising funds to cover a "perceived cash shortage". Thirdly, idle government cash balances in the commercial banking sector "are not idle for the banks themselves", but are often used by them to extend credit to potential borrowers. Draining this unknown government cash balances through open-market operations by the commercial banks, also imposes costs on the central bank (Oguntodu et al, 2015).

Establishing a unified structure of government bank accounts via a "Treasury Single Account (TSA)", should minimise all these problems and improve government cash management and control. The Treasury Single Account initiative is the operation of a unified structure of Government Bank Accounts, in a single bank account or a set of linked bank accounts for ALL Government receipts and payments (Ekubiat and Ime, 2016; Lienert, 2009).

In 2007, the establishment of the Treasury Single Account could not be successful by the Government of Ghana due to the lack of the required legal framework in the Financial Administration Act, 2003 (Act 654). For the next nine years, the government of the day did not find it necessary to pursue that agenda. It was not until the passage of the Public Financial Management Act, 2016 (Act 921) that gave impetus to the establishment of the operation of the Treasury Single Account in Ghana. Section 46 of the PFM Act, 2016 (Act 921), established the Treasury Single Account (TSA) as a unified structure of Government of Ghana (GoG) bank account that enables the consolidation of government cash resources, and into which all government cash receipts, and from which all government cash payments shall be made to Covered Entities (MDAs/MMDAs).

The covered entities as stated in the PFM Act, 2016 (Act 921) includes the Executive, Legislature and Judiciary, MDAs/MMDAs, and constitutional bodies. Launching the TSA in Accra (Graphic Online, 2017), the Minister of Finance, Ken Ofori-Atta said there was an estimated GHC5 billion government money (US$I billion) which was literally locked up with the various commercial banks strewn across the length and breadth of the country. The Minister retorted rhetorically that "I keep my money with you, and I get a return of 5% bank interest; but you turn round to use my own money with you to buy my own Treasury Bills, and I pay you 20% treasury bill interest; something has got to change (Graphic Online, 2017)".

The novel, dreaded, disruptive, and disastrous Covid-19 Pandemic took the world by storm in January, 2020. The Covid-19 pandemic in Ghana is part of the worldwide pandemic of coronavirus disease 2019 caused by "severe acute respiratory syndrome (SARS-CoV-2)". On 12th January, 2020 the World Health Organisation (WHO) confirmed that the novel coronavirus was the cause of a respiratory illness that affected a cluster of people in Wuhan City, Hubei Province, China. This was reported to the WHO on 31st December, 2019. On 11th March, 2020 the World Health Organisation (WHO) declared the novel Covid-19 a global pandemic (Graphic Online, 2020).

This research was conducted to fill the academic gap by examining the ramifications of the Treasury Single Account (TSA) vis-à-vis the Integrated Financial Management System (IFMIS) and the GIFMIS Platforms, and Government Cash Management in the wake of the novel, dreaded, and disruptive Covid-19 Pandemic. The primary objectives of the study were:

- To examine the relevance of the IFMIS and GIFMIS Platforms
- To assess the effectiveness and efficiency of the TSA.
- To compare and contrast the government daily cash position pre and post TSA regimes.
- To make recommendations for the successful and continuous operation of the TSA in the face of the novel, dreaded, and disruptive Covid-19 Pandemic.

The rest of the paper is presented sequentially according to literature review, with particular reference to the conceptual and theoretical framework, empirical studies, methodology, discussion of result and major findings, conclusion and recommendations.

2. LITERATURE REVIEW: CONCEPTUAL FRAMEWORK

2.1. The Concept of Treasury Single Account (TSA)

Ter-Minassian and Parente (1995), define Treasury Single Account (TSA) as a public accounting system under which all government revenue, receipts, and income are collected into one single account, usually maintained by the country's Central Bank, with all payments executed through the same single account as well. The purpose, according to Schmitz and Wood (2006), is primarily to ensure the accountability of government revenue, enhance transparency, and avoid the misapplication of public funds. The maintenance of a Treasury Single Account (TSA) will help to ensure proper cash management by eliminating idle funds usually left with commercial banks, and in a way enhance monitoring and control over government revenue collection and payment.

Garbade et al (2004), also define Treasury Single Account (TSA) as a unified structure of government bank accounts that gives a consolidated view of government cash resources. Based upon the principle of unity of cash and the unity of treasury, a Treasury Single Account is a set of linked bank accounts through which the government transacts all its receipts and payments. The principle of unity follows from the fusion of all cash, irrespective of its end-use. While it is necessary to distinguish individual cash transactions for control and reporting purposes (Pattanayak and Fainboim. 2010), this purpose is achieved through the accounting system, and not by holding or depositing cash in "transaction-specific bank accounts". This enables the treasury to delink the management of cash from control at the transaction level (Pattanayak and Cooper, 2011).

The International Monetary Fund, through a working paper dated 2010, said TSAs should be part of the public finance management reform agenda of countries that prioritise prudent management and use of public funds. According to Iroegbu (2015), establishing a unified structure of government bank accounts ensures that no other government agency operates bank accounts outside the oversight of the Treasury. According to the IMF (2007), at least four key issues need to be addressed in designing a TSA system: (i) coverage of the TSA; (ii) government bank accounts structure; (iii) transaction processing arrangements and associated cash flows; and, (iv) roles of the central and commercial banks in managing the TSA, and provision of banking services.

The TSA coverage should be comprehensive by including all government-funded entities, including the autonomous and statutory government bodies as well as extra-budgetary funds (EBFs) and special accounts (Ibietan, 2013). This is to ensure that the TSA covers, as far as possible, all relevant cash resources of the government. All cash flows related to government revenue, expenditure, donor financing, debt issuance and amortization (including those associated with external debt) should be fully integrated into the TSA system. Including EBFs within the TSA may be difficult to achieve in some cases where it has a separate legal status or has a public standing (e.g., education and health funds). However, a balance needs to be struck between such EBF's legitimate claim to operational autonomy on the one hand and the potential costs risks arising from fragmented management of public funds on the other (Yusuf and Chiejina, 2015). The donors should be encouraged to integrate their funds with the TSA or, as a minimum, to route final payments through the TSA. The latter arrangement enables the government to account for and report on donor-funded transactions passing through the TSA before payments are made to suppliers/beneficiaries from the donor bank accounts (Williams, 2010).

Inclusion of social security funds and other trust funds in the TSA could be considered, provided that the accounting system is well developed and adequate safeguards exist to prevent the abuse of trust fund resources. It has become international good practice to include as many government-managed trust funds within the TSA as legally possible. To achieve this, the government accounting system should be fully reliable and capable of accurately distinguishing trust assets in the ledger accounts (Hendriks, 2013). As the resources of these trust funds are managed by the government only as a trustee, it is also necessary that the government does not use their cash reserves to finance its budget deficits by overlooking the respective trust funds' short-term liquidity needs, long-term liabilities, and statutory obligations (e.g., to make pension payments). In practice, the trusts should notify the treasury of their future cash outflows.

Unless a public corporation is discharging a government function, it should not be included in the TSA (Onwuka et al, 2007). Public corporations usually provide market-based goods and services and including them in the TSA could hamper their autonomy to implement commercially oriented strategies. However, if a public corporation is discharging a government function, it should be designated as a government unit (in line with the definition in the *GFSM* 2001) and its activities and resources should be integrated with the budget and TSA, respectively.

The government bank accounts structure under a TSA system could be either "Centralized" or "Distributed", or it could have features of both (Central Bank of Nigeria, 2015).

- In a fully "Centralized" structure, the TSA is composed of a single bank account—with or without sub-accounts—usually at the central bank. This is operated either by a centralized authority (e. g., a centralized treasury with or without regional units), or by individual line agencies/spending units (see the discussion below on transaction processing arrangements). In either case, all transactions passing through this single account are tracked, accounted for, and managed through a well-developed accounting system.
- Under a "Distributed" bank accounts structure (e.g., Sweden), there are several independent bank accounts (generally ZBAs opened with commercial banks) operated by line agencies/spending units for their own transactions, with positive and negative balances in these accounts netted into the TSA main account. Money is transferred (usually at the beginning or end of the day) to these accounts as approved payments are made, and the central bank, which manages the TSA, provides the consolidated cash balance position at the end of each day.
- While the "fully centralized" and "fully distributed" structures are the two ends of the possible continuum of bank account structures, there could be several combinations of the two. In all these arrangements, it is important that any balances left with the banking system are swept overnight back into the TSA.

According to Horcher (2006b), there are different options as to how a TSA interacts with government transaction processing systems for revenue collection and payment disbursement. A transaction processing system, *inter alia*, is based on the distribution of responsibilities for budget execution, accounting control, and administration of the revenue collection and payment systems. In some countries, all expenditure transactions are approved centrally in the ministry of finance/treasury and paid from the TSA.

Alternatively, individual spending units/agencies may be responsible for payments and they may have transaction accounts in the banking system for this purpose (Economist Intelligence Unit, 2005). Several countries operate a hybrid system under which major receipts and payments flow directly through the TSA, but smaller transactions rely entirely on the commercial banking system. In these arrangements, however, the use of cash is minimized if any balances left with the banking system are swept overnight back into the TSA. It is then for the government cash managers to decide how to manage any net balance, including, for example, investing any temporary surplus with the banking system.

In some countries the treasury pays to the central bank a fixed monthly fee for all of its services independently of the number of transactions delivered, a practice that should be avoided (Williams, 2010).

2.2. THEORETICAL FRAMEWORK

A number of different theories of socio-economic accounting were borrowed to form a sound foundation to substantiate the adoption and implementation of the Treasury Single Account. These theories include the Stakeholder Theory, Financial Management Theory, and the Modern Monetary (Money) Theory (MMT).

2.2.1. The Stakeholder Theory

The first person to define stakeholder theory was organizational theorist Ian Mitroff in his book *Stakeholders of the Organizational Mind*, which came out in 1983. Shortly thereafter, an article about stakeholder theory was released in 1983 in the California Management Review by philosopher and professor of business administration R. Edward Freeman. Freeman did not cite Mitroff as a source; rather he attributed his stakeholder theory to discussions at the Stanford Research Institute. He went on to publish his book, *Strategic Management: A Stakeholder Approach*, shortly after the article. In Freeman's book, he identified and modelled stakeholder groups within a corporation, describing and recommending ways to manage their interests and determine who really counts from the perspective of the company.

The Stakeholder Theory, is a theory of organizational management and business ethics that accounts for multiple constituencies impacted by business entities such as employees, suppliers, customers, local communities, and others. The theory addresses morals and values in managing an organization, such as those related to corporate social responsibility, market economy, and social contract theory (Hill and Jones, 2012; Howlet and Ramesh, 2003).

Stakeholder theory is a view of capitalism that stresses the interconnected relationships between an organization and its customers, suppliers, employees, investors, communities and others who have a stake in the organization. The theory argues that a firm should create value for "all stakeholders", not just its "shareholders (Freeman, 1984)"

The theory of the Stakeholder has fundamentally become a basis of knowledge for businesses (and by extension, countries), to secure their relationship with their stakeholders through a corporate social responsibility, and a social contract. Free, fair, and transparent multi-party democratic elections at periodic intervals is considered as a strategic approach by which countries denote stakeholders' participation and reduces information asymmetry (Hobbes, 1985; Quentin, 1978). It has been recognized that organizations taking into account stakeholders' requirements tend to show better performance than those that do not.

The "Stakeholder Theory" was assumed to be a bulwark against the unbridled corruption-craze by public officials against the state. But the stakeholder theory notes that there are several interested parties that must be included under the umbrella of stakeholder, such as the company's employees, customers, suppliers, financiers, communities, governmental bodies, political groups, trade associations, trade unions and even competitors, as they too can impact the company. The list of who the stakeholders are is not universally agreed upon, and even the definition of a stakeholder remains contested by some (Suchman, 1995). Even the academic literature is in conflict. There are many books and articles on the subject and most cite Freeman as its father (Lindblom and Woodhouse, 1993).

Freeman says he stood on the shoulders of giants, such as building from research in strategic management, corporate planning, systems theory, organization theory and corporate social responsibility (Hill and Jones, 2012). More recently, in 1995, ethicist Thomas Donaldson has argued that stakeholder theory has descriptive, instrumental and normative aspects that are mutually supportive. Stakeholder theory posits that a company is only successful when it delivers value to its stakeholders, and those values can come in many forms beyond financial benefits. One of the values produced by stakeholder theory includes greater productivity across the organization. Stakeholder theory drives more than profits and productivity. There are ethical benefits of practicing it as well.

Some critics say the stakeholder theory is problematic because the interests of various stakeholders cannot be balanced against each other. This is because stakeholders represent such a large and diverse group. According to

Quentin (1978), you cannot please every stakeholder. One or more stakeholders will have to take a backseat to other, more dominant ones, which is likely to create discord. This will disrupt the benefits associated with stakeholder theory. Also, who will wield the most influence? Some stakeholders might find that they are not impacting decisions as much as another group. The different power levels and spheres of influence can be a problem. Even those with seemingly more influence might not feel that they are getting what they want.

2.2.2. Financial Management Theory

Following Anthony's Five (5) typology of managerial decision processes, this study is concerned with financial decisions which are strategic, rather than operational, in their content. The antecedents of a financial management theory are found in the classical economic theory of the firm. A managerial theory of finance which is emerging in the literature can be briefly stated as follows: Management requires a framework which facilitates the modelling of three principal components of the problem, namely the demand for funds, the supply of funds, and the criterion by which demand and supply of funds are to be brought into consistent relationship (Krugman and Wells, 2018). The Financial Management Theory assumes that all aspects of financial resources (its mobilisation and expenditure), should be well managed by the government for the benefits of the citizenry (Bower, 1970). This includes resource mobilisation, the prioritisation of programmes, the budgetary process, the effective, economic, and efficient management of the scarce resources, and the exercise of rigorous control mechanisms to guard against the threats of embezzlement, misappropriation, and misapplication of public funds.

According to Carleton (1970), there are five overall principles for managing the financial transactions of corporate, social or community funds. The five principles are consistency, timeliness, justification, documentation, and certification.

With regards to consistency, the overriding principle is that all transactions must be handled in a consistent manner. With regard to timeliness, all transactions must be handled within a reasonable period of time, consistent with programmed time frames. In the case of justification, there must be a reason for the transaction that supports the projects or programmes' goals and objectives in tandem with the vision of the central government. Sufficient documentation to support the transaction must exist. The documentation must be retained, organised, and complete enough to stand up to an audit. Certification simply implies that all transactions must be authorised and authenticated.

2.2.3. Modern Monetary (Money) Theory

Modern Monetary (Money) Theory (MMT) is a heterodox macroeconomic theory (Mitchell-Innes, 1914) that describes currency as a public monopoly and unemployment as evidence that a currency monopolist is overly restricting the supply of the financial asset needed to pay taxes and satisfy savings desires. In his "General Theory of Employment, Interest, and Income, Keynes (1936), drew attention to the causes of the "Great Depression" of the 1930s. The position of the Keynesian school of thought was later amplified by Samuelson (1992). Thus, MMT became one of the mainstream macroeconomic theory. But the Keynesian macroeconomic view was soon to be contested and criticised by the leading monetarist, Friedman and Schwartz (1964). Friedman won the Nobel Peace Prize in Economics in 1976.

The Modern Monetary (Money) Theory (MMT) argues that governments "create new money" by using fiscal policy (Edwards, 2019; Keynes, 1930). According to its advocates, the primary risk once the economy reaches full employment is inflation, which can be addressed by gathering taxes to reduce the spending capacity of the private sector. MMT's main tenets are that a government that issues its own fiat money:

1. Can pay for goods, services, and financial assets without a need to collect money in the form of taxes or debt issuance in advance of such purchases;
2. Cannot be forced to default on debt denominated in its own currency;
3. Is only limited in its money creation and purchases by inflation, which accelerates once the real resources (labour, capital, and natural resources) of the economy are utilised at full employment;

4. Can control demand-pull inflation by taxation which removes excess money from circulation (although the political will to do so might not always exist);
5. Does not compete with the private sector for scarce savings by issuing bonds.

These five tenets challenge the mainstream economic view that government spending is funded by taxes and debt issuance (Chohan, 2020). The first four MMT tenets do not conflict with mainstream economic understanding of how money creation and inflation works. For example, as former Chair of the Federal Reserve, Alan Greenspan said, “The United States can pay any debt it has because we can always print money to do that; so there is always a zero probability of default (Edwards, 2019)”. However, MMT economists disagree with mainstream economics about the fifth tenet, on the impact of government deficits on interest rates (Larson, 2007).

The “Modern Money Theory (MMT)” examines how monetarily sovereign governments operate, and their impact on the economy (Mansfield, 1997). It shows that it is relevant to amalgamate the central bank and the treasury into a government sector that finances itself through monetary creation such that the financial position of the treasury and the central bank are so intertwined that both of them are constantly in contact, in order to make fiscal and monetary policy coexist and run smoothly (Chohan, 2020; Krugman, 2007).

2.3. How the Treasury Single Account (TSA) Works

For the Treasury Single Account (TSA) to work effectively and efficiently, there must be daily clearing and consolidation of all cash balances into a “Single Central Account”, even where an MDA’s/MMDA’s accounts are already held at the “Central Bank (Deloitte, 2012; Dener, 2007)”. The various bank accounts held by MDAs/MMDAs must operate as “Zero-Balance Accounts” where any closing cash balances are swept to the TSA at the Bank of Ghana on a daily basis “to give the government one consolidated cash position”. Two main types of TSA were identified, namely a “Centralised” and a “Distributed” systems. Both systems have their individual architectures, advantages and disadvantages (Ahmed, 2016).

With regards to the coverage of “Donor Funds” within a TSA, it is still quite common, especially in low-income countries, for donors and external loan providers to require the government to manage their funds through separate commercial bank accounts, and not through a TSA (Akande, 2015). Although this practice has contributed to a fragmentation in the management of government cash resources, this concern has been addressed by the “Paris Declaration of 2005 to use country-specific Public Financial Management (PFM) systems”. Therefore, Donor Funds and external loans or borrowings are always converted, denominated in the local Ghanaian currency on transfer into the TSA main account.

According to Oguntodu et al (2015), the main purpose of TSA implementation is to maximise the use of cash resources through the concentration and reduction in float cost. The ability to accurately forecast cash inflows and outflows, and the resultant balances on the TSA is very essential in improving cash management. This is where the Ghana Integrated Financial Management System (GIFMIS) comes into play (PFM, 2016).

2.4. What is IFMIS?

The Integrated Financial Management Information System (IFMIS) are computer-based systems that automate and store key financial information in large organizations like governments, multinational corporations, and large non-profit organisations (Hendriks, 2013). The goal of these systems is to increase access to information, while decreasing long-term costs. The initial investment of time and money to implement IFMIS is high, but the improved financial transparency and information access usually offsets its initial expense. An IFMIS can be off-the-shelf software or a custom-made system, depending on the size and needs of the organization using the system (Hendriks, 2013; Khan and Pessoa, 2010).

2.4.1. IFMIS Modules

IFMIS consists of a number of modules which support the different functional processes associated with Government Fiscal Management (GFM). These include modules for:

- ✔ Macroeconomic forecasting;
- ✔ Budget preparation;
- ✔ Budget execution (including cash management, accounting and fiscal reporting);
- ✔ Managing the size of the public service establishment (HR) and its payroll and pensions;
- ✔ Assets management;
- ✔ Debt management;
- ✔ Tax administration, and
- ✔ Auditing.

2.4.2. How different is IFMIS from other Computer-Based Systems?

The primary features that distinguish IFMIS from other computer-based systems include:

- ❖ IFMIS can integrate accounting-related information, or larger organizational data management systems;
- ❖ The standardization of data classifications for financial events;
- ❖ The reduction in duplicate data entry;
- ❖ Implementation of internal controls for transactions; and the generation of a
- ❖ Multitude of Reports

The antecedent of IFMIS in Ghana was evidenced by (a) weak budget formulation, preparation and lack of ownership; (b) weak expenditure monitoring and budgetary control; (c) lack of proper accounting and monitoring system; (d) lack of quality and timely data on Government resources; and (e) an outmoded regulatory framework.

2.4.3. The Advantages of IFMIS

There are several advantages of IFMIS which includes:

- ❖ IFMIS allow a central authority to regulate security access that increases overall data integrity and security;
- ❖ With all information in a single location, financial fraud is harder to perpetrate and easier to catch;
- ❖ It enhances the management of cash, debt and liabilities;
- ❖ It has the ability to use historical information to provide better budget modeling processes and increased decision-making efficiency; and
- ❖ It results in reduced cost for financial transactions

The two major disadvantages of IFMIS is that it requires continuous support and maintenance to ensure integrity and functional use of the system, and it is laden with high switching cost

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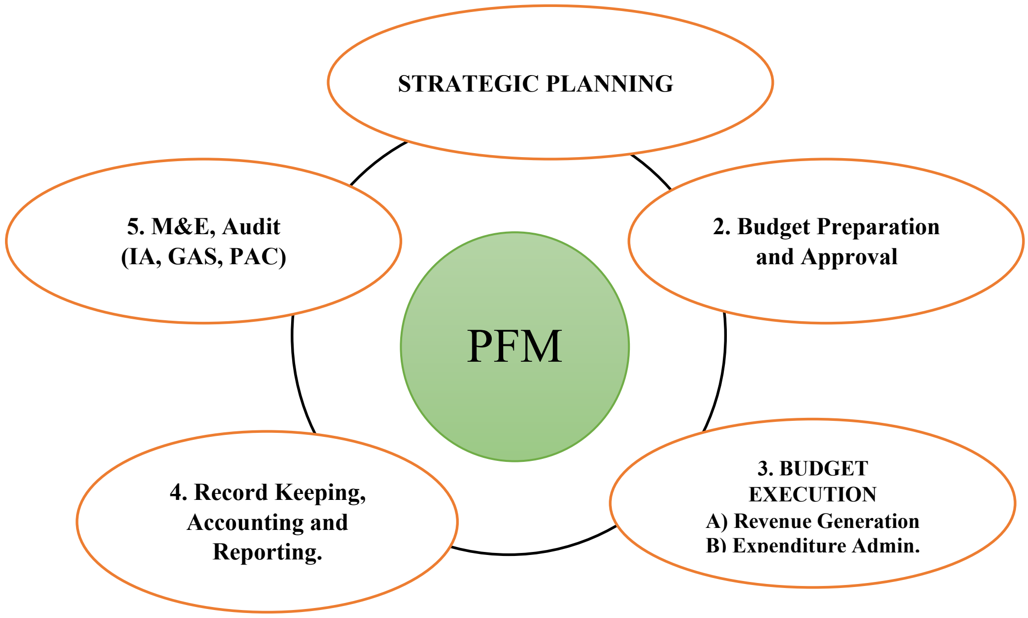
2.4.5. The PFM Cycle in Ghana and IFMIS



KEY
1. M&E: Monitoring and Evaluation
2. IA: Internal Audit
3. GAS: Ghana Audit Service
4. PAC: Public Accounts Committee

2.5. GIFMIS

GIFMIS stands for Ghana Integrated Financial Management Information System. It is an integrated computerized financial management Platform of Government of Ghana for:

- Budget Preparation;
- Budget Execution;
- Revenue Management;
- Expenditure Management;
- Cash Management;
- Human Resource and Payroll Management;
- Assets Management;
- Public Debt and Investment Management; and
- Accounting and Financial Reporting

The aim of GIFMIS is to establish an Integrated ICT-based PFM Information Systems in Ghana at the MDAs located at National, Regional, and District levels and MMDAs to improve efficiency and effectiveness in public financial management. The specific PFM Problems addressed by GIFMIS include:

- Lack of interface/integration between various PFM Systems;
- Inadequate budgetary controls over public expenditure;
- Lack of transparency in budget execution;
- Poor record-keeping on public financial transactions;
- Undue delays in processing transactions due to cumbersome manual processes;

- ❖ Lack of reliable data for effective fiscal planning due to weak accounting and fiscal reporting systems; and
- ❖ Delays in financial reporting, especially at the National level

2.5.1. GIFMIS Financial Modules

The GIGMIS Financial Modules consist of:

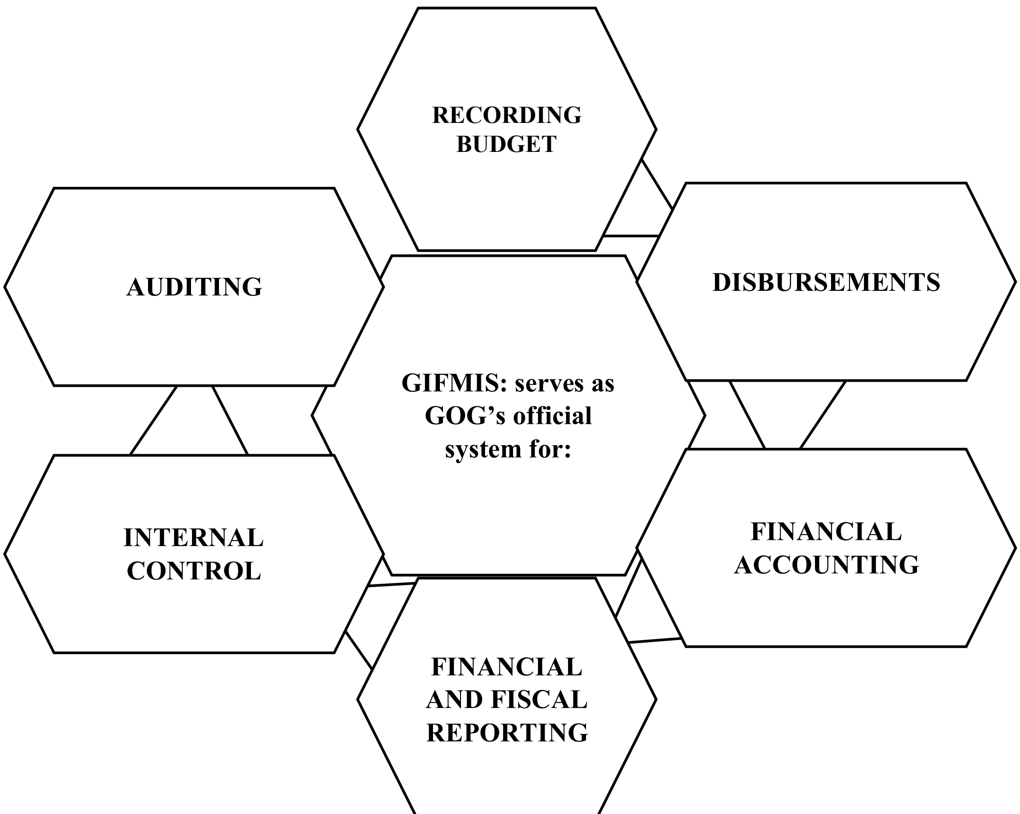
- ❖ Purchasing: For Purchase Requisition, Purchase Order, Store Receive Advice;
- ❖ Accounts Payable: For preparing PVs, creating accounts (i.e. Debits and Credits), and tracking liabilities;
- ❖ Cash Management: For making Payments, Bank Reconciliation, and Cash Forecasting;
- ❖ Accounts Receivable: For recording and tracking of revenue and income;
- ❖ Fixed Assets Module: For managing fixed assets register through recording, tracking and accounting for fixed assets;
- ❖ General Ledger: The repository of all accounts which holds the budget, and facilitates financial reporting

2.5.2. GIFMIS HRMIS Modules

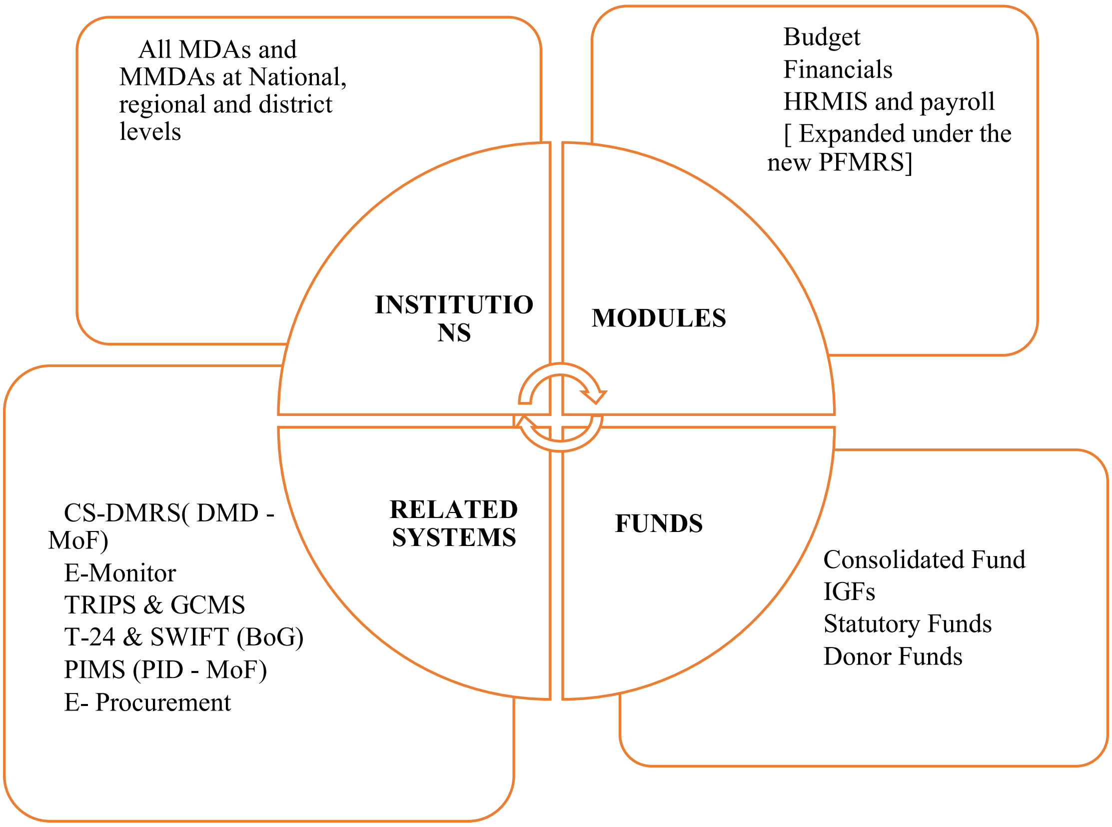
The GIFMIS HRMIS consist of:

- ➢ Employee Profile Management;
- ➢ For maintenance of the main biodata of employees from appointment to attrition in the areas of Employee Appointment, Employee record maintenance and Employee promotion;
- ➢ Establishment Management
- ➢ For the management of Organizations, Locations, organizational hierarchies, Grades, Jobs, Positions and position hierarchies. This facilitates position control at the Public Services Commission level where no MDA/MMDA on the HRMIS will exceed the established/approved staffing levels without approval from their appointing authorities and the Public Services commission
- ➢ Employee Cost Management
- ➢ For managing compensation of employees at all MDAs/MMDAs to ensure budgetary control over payroll cost

2.5.3. GIFMIS as a Flagship System



2.5.4. The Scope of GIFMIS



2.5.5. Key Users of GIFMIS

The Key Users of GIFMIS includes:

- Budget Officers
- Accountants
- Procurement Officers
- Store Officers
- Internal Auditors (Internal Audit Agency)
- Treasury Officers
- Administrators and HR Managers
- Spending Officers (Coordinating Directors, Heads of Departments, etc.)
- Vote Controller (Political Heads of MDAs/MMDAs)
- External auditors (Ghana Audit Service)

Once the Appropriation Act is passed by Parliament and assented to by the President, the Vote Allocations of all MDAs/MMDAs and other Covered Entities (as indicated in the PFM Act, 2016 (Act 921), are uploaded into the GIFMIS Platform for all future processing of claims and payments

2.5.6. Areas for Improvement by GIFMIS

The new Public Financial Management Reform Strategy of Ghana offers a lot of business opportunities for consultants and service providers. The reform areas include:

- Accounting and Financial reforms at Controller and Accountant General's Department;
- Budget reforms at Ministry of Finance;
- HR Management reforms at Public Services Commission and Head of Civil Service;
- Payroll reforms at Controller and Accountant General's Department;
- Procurement reforms at Public Procurement Authority;
- Revenue reforms at Ghana Revenue Authority;
- Financial Sector reforms within the Banking Sector
- Internal Audit reforms at Internal Audit Agency;
- External Audit reforms at Ghana Audit Service; and
- Parliamentary Oversight reforms at Parliament

2.6. EMPIRICAL EVIDENCE

2.6.1. From the Manual to the Online Electronic TSA Receipt and Payment Platform

Since the establishment of the Gold Coast Treasury in 1896 by the Colonial British Government, the receipts into, and payments from the Consolidated Fund had been done through a "manual system" at the "local management unit levels". What happened in practice was that after the passage of the Appropriation Act, the Votes of all MDAs/MMDAs and other Covered Entities were released to the various Vote Controllers/Spending Officers at the Headquarters in Accra. The Votes were broken down into "Recurrent Expenditure (Items 1-5)", and "Capital Expenditure (Items 6-8)".

Vote Controllers/Spending Officers of the various MDAs/MMDAs and other Covered Entities at the Headquarters in Accra would then prepare "Financial Encumbrances/Financial Encumbrance Adjustments (FEs/FEAs) to the respective Regional/District Heads of Department. This meant that not a single pesewa of Recurrent Expenditure, including the 'Votes for Wages and Salaries' were kept at the Headquarters. Only the 'Votes for Capital Expenditure' were kept at the Headquarters in Accra. As a result, the Chief/Regional/District Treasury Offices of CAGD were responsible for all payments for Recurrent Expenditure, including Wages and Salaries at the Regional/District level.

Thereafter, all payments at the Headquarters/Regional/District level were done via the "manual type-written Payment Vouchers" prepared by the Management Unit, and submitted to the Chief/Regional/District Treasury Offices of the CAGD (as the case might be). New employees were recruited and paid by the Management Units through "Establishment Warrants", while old employees on transfer were paid using their "Last Pay Certificates" from their previous Management Units. Thus, there was no "Payroll Processing Unit at the CAGD Headquarters in Accra". Budget implementation/execution was done through the releases of General and Specific Warrants, plus Expenditure Authorisations, all issued by the Ministry of Finance.

2.6.2. Determining the Government Cash Position through the Pre-TSA System.

The Executive Summary to: "The Status Report on Bank Reconciliation Statement for the Government of Ghana Consolidated Fund as at 31st December, 2002", clearly revealed that this was the "first time in the history of the CAGD that such an exercise had ever been done. The statement went on to say that: "The Status Report followed weeks of analytical thinking, several rounds of Adjusted Cash Book and Bank Reconciliation Statement Format Redesigning (deep into the night and on weekends), all spearheaded by no less personalities than the Controller and Accountant General himself (in the person of Mr John Prempeh), and the Deputy Controller & Accountant General in charge of Treasuries, Audit & Investigations (in the person of Mr Eugene A. Ofosuhene).

The Reconciliation Section of the CAGD compiled on a monthly basis, "A Consolidated Bank Reconciliation Statement on All Uncommitted Government Drawings Account at the Bank of Ghana". These GoG Drawings

Balances were compiled by the Bank of Ghana on a daily basis, and was known as the "Government Cash Position". The data for the compilation of these Monthly Bank Reconciliation Bank Statements came from the Ghana Revenue Authority, the Ministry of Finance, and the CAGD itself. At the time of the Status Report in 2002, the CAGD had 19 Treasuries in Accra, 10 Regional Treasuries (at the 10 regional capitals), and 120 District Finance Offices (corresponding with the 120 MMDAs at the time). As at 31st December, 2002 the Cumulative Balance on the Uncommitted GoG Drawings Account stood at ₵11,808,859,390,863.08. Out of this amount, the Reconciliation Section was able to "reconcile ₵11,425,935,290,241.10, representing about 93.95%. The outstanding 6.05% consisted of the Cashiering Unit of the Treasury Headquarters in Accra, and the 10 Regional and 120 MMDA Finance Offices across the country.

2.6.3. Operation of TSA in Other Countries.

Ekubiat and Ime (2016), studied the Adoption and Implementation of the Treasury Single Account (TSA) by the State Governments of Nigeria: Benefits, Challenges, and Prospects. According to the study, Nigeria's Public Funds at all levels have been wrongfully accounted for by previous administrations. But in order to avert this continuous threat, coupled with the country's dwindling economy, the Federal Government of Nigeria adopted and implemented the TSA. Ahmed (2016), studied the Treasury Single Account (TSA) as an "Instrument of Financial Prudence and Management Prospects and Problems". According to the study, the Treasury Single Account was implemented in order to ensure prudence and probity in the management of Nigeria's dwindling financial resources, in the face of rising unemployment, abject poverty, and the escalating crime wave.

Oguntodu et al (2015) carried out "An Assessment of the Treasury Single Account and Nigeria's Economy between 1999 and 2015. The Central Bank of Nigeria (CBN) Statistical Bulletin (1999 – 2015) was analysed using the OLS Estimator. To this end, an empirical analysis of the Treasury Single Account (TSA) and economic performance of Nigeria was carried out. The result showed that the TSA has a significant impact on the country's economic growth. The East African Community partner states have agreed to close down multiple bank accounts operated by their ministries, departments and agencies and keep their revenues in a single account each as part of efforts to increase transparency and accountability in the use of public funds. The partner states agreed on the Treasury Single Account (TSA) to ensure proper oversight of government cash flows and to reduce the cost of keeping public money in several commercial banks. Tanzania set the pace, when Finance Minister Dr Phillip Mpango was tabling the 2018/2019 budget.

In Kenya, the Public Finance Management Bill 2017 set the stage for the creation of the single government account. All public funds will be deposited into the single account and all payments will be executed from the same account, enabling the government to monitor its finances. The creation of the TSA is part of the Public Finance (Administration and Management) Regulations 2013, which were formulated to boost the effectiveness of the Public Finance Management Act (2012). But the project had to be deferred for two years to pave the way for the implementation of other forms of electronic payments such as the Integrated Financial Management Information System (IFMIS) and Internet banking.

It is not clear whether the proposed single account will be operated by the central banks of the various countries or a commercial bank on behalf of the central bank, but in many Latin American countries, large publicly owned banks operate the TSA. In Malawi, Finance Minister Felix Mlusu has said the Tonse Alliance administration has resolved to consolidate multiple bank accounts operated by their ministries, departments and agencies and keep their revenues in Treasury Single Account each as part of efforts to curb abuse of public funds.

Delivering a budget statement for 2020/21 in Parliament on Friday, 20th September, 2020 the "Treasury Czar" said, "A Treasury Single Account would provide a consolidated cash position with a clear overview of all cash flows in and out of the accounts." The minister said if a country has a fragmented system for handling government receipts and payments through the banking system, it is a critical Public Finance Management weakness that needs to be addressed. Mlusu also reported to Parliament that as part of strengthening Public Finance Management (PFM) Systems, the government through the Department of Accountant General rolled out the new Integrated Financial

Management and Information System (IFMIS) on 1st July, 2020. "Its full rollout is expected to be done by 1st July, 2021."

3. METHODOLOGY

The study was cross-sectional, and we adopted the non-probability quota sampling method to select the management units for the survey (Denzin, 2017). The study also used the Public Expenditure Tracking Survey (PETS) as developed by Reinikka and Svennson (2006), in conjunction with the Appropriation Acts for the data collection. This was because after the first successful implementation of PETS in Uganda in 1999 (Olken and Pande, 2012), it has now become a standard practice for financial data measurement analysis in the public services. A total of 200 respondents were sampled by the researchers. From the virtual interviews and structured questionnaires, some data (inadequate, though) were obtained on the following:

- Budgetary Allocations of the various MDAs/MMDAs were obtained through the Appropriation Acts for the relevant years.
- Data on the Treasury Single Account (Main), and the Sub Accounts at the Bank of Ghana and some commercial banks were also obtained.
- Data on Tax Revenues from the Ghana Revenue Authority (GRA) and Non-Tax Revenue from MDAs/MMDAs were also obtained.
- Data on Donor Funds, and External Loans and Borrowings were obtained from the CAGD (Public Debt & Investment), and the Ministry of Finance.
- Data on payment processes and some audit reports on MDAs/MMDAs were obtained and reviewed.

From thence, data collection instruments were used to capture both primary and secondary data relevant to the objectives of the research. The information collected were analysed and discussed both qualitatively and quantitatively.

4. RESULTS AND DISCUSSION OF FINDINGS

Since COVID 19 sprung a surprise on the world after lingering on in China for the last quarter of 2019, nations have reacted differently in their response to this menace. It was observed how the government, political parties, citizens, scientists and academia, corporate entities, faith based organisations, traditional rulers, etc. have risen up to the occasion to be counted with varied forms of interventions to combat the scourge. It is worth mentioning that, some of the public etiquette that Ghanaians acquired during the outbreak of Ebola between 2014 and 2016 has lingered on though Ghana never registered a case during that epidemic.

The President of the Republic, Nana Addo Dankwa Akufo-Addo, on Sunday, 29th March, 2020, inaugurated the Board of Trustees of the COVID-19 National Trust Fund, at a brief ceremony at Jubilee House, the seat of the nation's Presidency. The Board of Trustees, which is chaired by former Chief Justice, Sophia Akuffo, will receive contributions and donations from the public to assist in the welfare of the needy and the vulnerable. The other members of the Board are Archbishop Justice Ofei Akrofi, Mr. Jude Kofi Bucknor, Gifty Afenyi-Dadzie, Mrs Elsie Addo-Awadzie, Dr. Ernest Ofori-Sarpong, Dr Tanko. Mr. Collins Asare will act as Secretary to the Board.
Inaugurating the Board, President Akufo-Addo noted that, since the outbreak of the virus in Ghana, organisations and individuals have made donations, with others wanting to find out how they can also contribute to the cause. "I felt that the best way was to establish a "Public Trust Fund", so that the monies that come do not get intermingled with Government money and all of those problems. A Public Trust Fund that is to be managed by an independent body of Trustees, so that people will see that these monies are being properly accounted for and properly deployed," he said.

The President added that the work of the Board will complement the efforts being made by the State in catering for the poor and vulnerable, stressing that "whatever money we raise, that is the target". Not being a "financial expert", the President did not know that ALL PUBLIC MONIES WILL END UP IN THE TREASURY SINGLE ACCOUNT. Pledging the full support of the Government for the work to be undertaken by the Board, the President said "I have full confidence in the integrity of all the people around this table, and of your dedication to the public welfare of our country. That is why I have chosen you to stay on this committee."

It was observed that although there are several variants of the TSA structure, they can be broadly grouped into two categories, namely a "Centralised", and a "Distributed" TSA architecture (Schmitz and Wood, 2006). The TSA systems established in most countries fall somewhere in between these two models, and involve various types of bank accounts (Central Bank of Nigeria, 2014). It is worthy to mention that the Government of Ghana has chosen and implemented the "Distributed" (and invariably, the best) Option. A "Distributed TSA" arrangement is one in which all revenue and expenditure of government pass through a single TSA Main Account, which is maintained at the Bank of Ghana (with an interface on the GIFMIS Platform), and TSA Sub Accounts for all the MDAs/MMDAs or Covered Entities.

Under the "Distributed" TSA architecture, line agencies down to the lowest level in the hierarchy are allowed to retain separate transaction accounts in the banking system. However, balances in all transaction accounts are swept into the TSA Main account at the Central Bank at the end of each working day. It was noted that the degree of decentralisation of a TSA structure is linked to the authority of various covered entities to access and operate their respective bank accounts. Although there were two transaction processing models, each of which could be associated either with the Centralised or the Distributed TSA architecture, the Government of Ghana adopted the latter. Under this structure, requests for payments are prepared by individual covered entities at their respective levels on the GIFMIS Platform for processing, control and payment. Thereafter, the GIFMIS Platform then processes and records all inflows and outflows and cash balances to the appropriate ledger account.

Technological advancement have played an important role in changing governments' banking practices over recent decades (Horcher, 2006a; Williams, 2010). It was observed that in most countries, commercial banks are used for revenue collection purposes on a remuneration basis. A computerised TSA system such as an IFMIS (GIFMIS in Ghana), and an advanced communication infrastructure allow "Electronic Fund Transfers (EFTs) from the TSA to the recipients' account, eliminating payment delays and idle cash balances, and thereby reducing operational risks.

With the abolition and closure of over 20,000 MDAs/MMDAs bank accounts held at the Bank of Ghana and various commercial banks (Bank of Ghana Bulletin, 2016), the operationalisation of the Treasury Single Account has resulted in the following:

4.1. TSA Main Account

This is the Consolidated Fund (PFM, 2016; FAA, 2003) bank account at the Bank of Ghana which consolidates the government's cash position. It is the Main TSA Account into which all cash balances of linked accounts of MDAs/MMDAs are swept into on a daily basis. It is the central pool or watershed into which all government cash receipts flows, and from which all government disbursement are made from.

4.2. TSA Subsidiary Accounts (Sub-Accounts)

These are not separate bank accounts per se (in the sense of holding individual cash balances), but are special sub-accounts within the Main TSA Account. This is basically an accounting arrangement to group together a set of transactions, and allows the government to maintain the distinct accounting identity or ledgers of the various MDAs/MMDAs. A cash disbursement ceiling for each covered entity is then entered and enforced against these ledgers. Balances in these accounts are netted off with the TSA Main Account for cash management purposes.

4.3. TSA Transit/Collection Accounts

The TSA Transit or Collection Accounts are not meant for day-to-day transaction banking operations of government entities. A Transit/Collection Account simply serves as a "transit" for the eventual flow of cash into the TSA Main Account. Transit/Collection Accounts are operated by the three (3) main Revenue Agencies which are supervised by the Ghana Revenue Authority (GRA), namely: the Customs, Excise and Preventive Service (CEPS); the Internal Revenue Service (IRS); and the Value Added Tax (VAT).

4.4. TSA Transaction Accounts

TSA Transaction Accounts are satellite accounts that are opened for covered entities that need transaction banking services, but do not have a direct access to the TSA main account or a subsidiary account. Such a transaction account could be for a "special fund (such as the Covid-19 Trust Fund)", and could take the form of a zero-balance account, or an imprest account.

4.5. TSA Zero-Balance Accounts (ZBAs)

Where transactional accounts are necessary, they are generally opened on a zero-balance basis. Which implies that on a daily basis, cash balances in these accounts are swept into the TSA main account. These accounts which are opened by covered entities in the commercial banks are used mainly for a "one-off disbursement", or for the collection of government revenue (particularly, non-tax revenue).

4.6. TSA Imprest Accounts

TSA Imprest Accounts are transaction accounts that can hold cash up to a maximum authorised amount, and are recouped from time to time as, and when, necessary. These imprest accounts are necessary for some petty office expenses, fuel, travelling and transport expenses, and vehicle maintenance.

4.7. TSA Correspondent Accounts

With regards to TSA Correspondent Accounts, a separate ledger account is opened for each correspondent bank. As a result, each correspondent entity has real-time information on the balances it maintains in the TSA.

4.8. The Benefits of Treasury Single Account

Several benefits were identified with the operationalisation and implementation of the Treasury Single Account (TSA) in Ghana and these included:
4.8.1 It allows complete and timely information about government cash resources. As a result of the Ghana Interbank Payment and Settlement System (GhIPSS) and GIFMIS, and an interface with the banking system, an updated balances of the government cash position is available on daily basis, and within real-time
4.8.2 The TSA has improved Appropriation control because when separate bank accounts were maintained pre-TSA, the result was a fragmented budgetary control system.
4.8.3 The TSA has improved operational control during budget implementation in an efficient, effective, transparent and reliable manner.
4.8.4 The TSA has enabled an efficient, reliable, and regular monitoring of government cash balances, facilitating variance analysis by distinguishing causal factors from random variations in cash balances.
4.8.5 The TSA has reduced bank charges, transaction and reconciliation costs considerably.
4.8.6 The TSA has facilitated an efficient revenue collection and payment mechanism by ensuring that there is no ambiguity regarding the volume or location of government funds, leading to a precise measurement of government cash position in real-time on daily basis.
4.8.7 The TSA has improved real-time bank reconciliation through the government accounting system, and the timeliness and quality of cash flow statement and fiscal data.
4.8.8 The TSA has improved the volatility of cash flows through the Consolidated Fund, thereby allowing it to maintain a lower cash reserve/buffer to meet unexpected fiscal volatilities and contingencies.

5. CONCLUSION AND RECOMMENDATIONS

Many developing and low-income countries have fragmented government banking arrangements that hinder effective cash management and control over cash balances (Horcher, 2006). It is common to find multiple bank accounts in commercial banks belonging to MDAs/MMDAs, with idle cash sitting in there. The primary objective of a TSA is to ensure an efficient and effective aggregate control over government cash balances. The consolidation of cash resources through a TSA arrangement is meant to optimise government cash management, avoid the menace of unnecessary and excessive government borrowing, and paying exorbitant interest charges to finance public expenditure (Obinna, 2015).
One major concern about the TSA (by uninformed public servants and other critics), was the question about the regular and effective preparation of bank reconciliation statements in a TSA architecture (Oguntodu et al 2015). However, it was noted that the TSA has rather facilitated a full and real-time bank reconciliation between the government accounting systems and cash flow statements from the central bank, and the commercial banks, usually through automated mechanisms on a daily basis.

One of our major recommendations is that a TSA regime must be supplemented by a proactive cash management system (Ekubiat and Ime, 2016). Government should try to minimise the level of cash balances in the TSA by actively targeting a minimum cash balance. Once a TSA has been established and its target cash balance has been set, a strategy needs to be developed for investing the available surplus cash, and funding temporary cash shortfalls (Lindblom and Woodhouse, 1993).

The implementation of the TSA in Ghana has facilitated a better fiscal and monetary policy coordination, as well as a better reconciliation of fiscal and banking data, which in turn has improved the quality of fiscal information (Bank of Ghana Bulletin, 2020). The establishment of an effective and efficient TSA infrastructure has significantly improved the country's primary cash balance for the first time in a decade, resulting in a Budget Surplus (Tax Revenues exceeding government expenditure) for 3 consecutive years (2017, 0.5%; 2018, 1.4%; and 2019, 0.9%). Due to an increase in liquidity, it has also reduced the Lending Rate of the commercial banks from a high of 32% of pre-TSA in 2016, to a low of 24% in 2019 post-TSA (Government Budget Statement, 2020).

Moreover, the operation of the TSA has resulted in a decrease in the rate of the debt stock increases from GHS9.5 billion in 2009 to GHC122 billion in 2016; and to GHC225 billion in 2019. This is evidenced by the country's debt stock increases as follows: 2009 to 2012, 267%; 2012 to 2016, 243%; and from 2017 to 2019, 76%. Finally, the debt to GDP ratio has also decreased as a direct consequence of pre and post TSA implementation as follows: 2009 to 2012, 49%; 2013 to 2016, 19%; and from 2017 to 2019, 3.9%. The fiscal deficit has also been 6.8% in 2016; 3.8% in 2018; and 4.8% in 2019 (Government Budget Statement, 2020).

Due to the unbridled spending on the part of ALL governments, the Fiscal Responsibility Act to cap the budget deficit not to exceed 5% for any fiscal year was passed in 2018. However, the Act's applicability remains to be seen in fiscal year 2020 as the International Monetary Fund (IMF) in its October, 2020 Fiscal Monitor Publication, has predicted that Ghana's fiscal deficit will reach 16.4 percent of GDP this year (up from the initial government projection of 4.7 percent of GDP), the largest in the country's history. This projection is not only the highest in Ghana's history, but will also become the biggest deficit in sub-Saharan Africa.

There is also the need to constantly and regularly engage the users and managers of the TSA in their capacity training and development in this era of electronic information and the high levels of well-organised and coordinated computerised crime and corruption (Trumpeter et al, 2012; Onwuka et al, 2009). Finally, it is recommended that a government lacking an efficient and effective control over its cash resources will pay for its institutional deficiencies in multiple ways. Therefore, the establishment of the TSA in Ghana must be jealously protected and enhanced (Zhang, 2012) through the digitisation programme and paperless systems, in order to constantly and consistently improve the government's cash management system, budgetary and liquidity controls in this era of the novel, dreaded, and disruptive Covid-19 Pandemic.

As at the time of submitting this research for publication on 30th November 2020, Ghana had 51,667 positive cases, with 50,547 recoveries, 323 deaths, and 797 active cases. The global figure was 63,691,642 positive cases, 1,476,277 deaths, and 44,079,695 recoveries. The three leading Countries on the infamous Covid-19

Pandemic Table were the USA, India, and Brazil. Indeed, the USA had clocked 13, 920,038 positive cases, with 274,332 deaths (http://corona.tuply.co.za/).

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Optimization of Heavy Equipment Capabilities in The Framework of Productivity and Coal Mining Business Sustainability: Case Study of East Kalimantan Mining Area

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Abstract
Coal mining business is now faced with various challenges such as export restrictions policy, an increase in value added products, and the decline in market prices of products. To be able to compete, mining companies are expected to increase productivity and efficiency and make continuous improvements in the production process. In the mining process, the availability of equipment and dump truck unloading tool will determine the sustainability of production that have an impact on productivity and efficiency. The purpose of this study was to optimize the production of coal mining in the context of the efficient use of equipment using the match factor, queues, and linear programming. The research location is in the area of the mining concession contractor KTD Corp is in the village of Embalut, District Tenggarong Seberang, Kertanegara Kutai Regency, East Kalimantan in October-November 2015. Unloading equipment used backhoe excavator is 5 units and 32 units of dump trucks. The simulation results match factor generated by the method optimal dump truck needs 26 units, while the queuing method and linear programming as much as 25 units of dump truck. The results of production optimization with linear programming method produced mining productivity of 1,208 BCM of overburden per hour with the optimum cost of $ 0,909/BCM.

Keywords: Linear Programming Method, Match Factor Method, Production Optimize, Queuing Method

1. Introduction

1.1 Introduction

The coal mining industry has been an industrial sector that has played a major role in supporting national development. The coal mining sector supports regional economic development, creates jobs, contributes to state revenues, brings in foreign exchange through exports, and supports electrification and national energy security.

However, the role and sustainability of the coal mining industry is very vulnerable to the volatility of commodity prices and also global economic developments (APBI, 2012).

On the other hand, since the enactment of the Minister of Trade Regulation No. 39/M-DAG/PER/7/2014 regarding restrictions on coal exports in the 2015-2030 period, a maximum of 425 million tons per year has an impact on the sustainability of companies in the coal mining sector. Therefore coal mining companies are required to increase productivity and efficiency, increase the use of technology and make innovations, especially those related to operational processes. Optimization of production is one of the fundamental things in order to achieve optimal production results (Susanti, 2012).

As one of the owners of coal mining concessions in East Kalimantan, Kitadin Corporation (KTD Corp) must achieve the planned overburden and coal production targets. The achievement of overburden production for the January-September 2015 period was 5,353,458 Bank Cubic Meters (BCM) from the planned total production of 6,009,000 BCM or only 89%. The failure to achieve this production target is due to the inadequate utilization and productivity of the main mining equipment, namely heavy equipment excavators and dump trucks in supporting the mining process. This can be seen from the water flow lost opportunity in Figure 1, lost opportunity can be seen in productivity and utilization. Lost opportunity from productivity was -455,983 BCM while from utilization was -328,308 BCM, while the gained opportunity in availability was +128,748 BCM (RML's Internal Report, 2015).

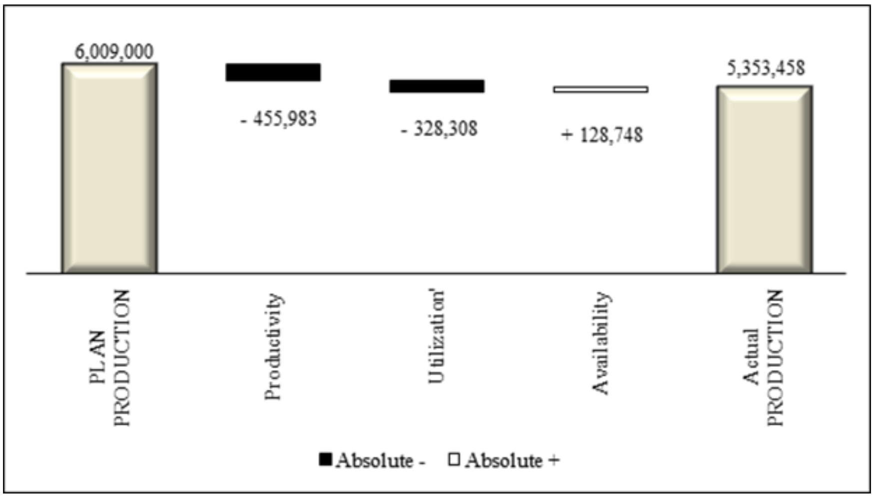


Figure 1: Water flow loss opportunity overburden production during January-September 2018

Less than optimal heavy equipment productivity can hurt the company. Heavy equipment productivity depends on bucket capacity, bucket factor, cycle time, and production correction factors (Sujatmiko, 2015). Optimization of production in mining can be done in various ways, namely optimizing the production capacity of heavy equipment, working time efficiency, and so on (Ilahi *et al*., 2014). Optimization of heavy equipment production capability is the most important factor considering the costs incurred in mining operations are mostly generated by heavy equipment operational activities (Rahadian, 2011). According to Burt (2008), optimization of production in mining can increase productivity. Among the various optimization methods and equipment selection and increasing productivity of the mining industry are match factor methods, queuing theory, linear programming, and simulation (Burt, 2008).

The most popular linear programming method used by researchers to optimize production schedules (Adadzi, 2013; Franik & Franik, 2009; Kumar, 2014; Morley, 2013; Nel *et al*., 2011; Newman *et al*., 2010; Shawki *et al*, 2009) and minimizing production costs (Adadzi, 2013; Bascetin & Ercelebi, 2009; Franik & Franik, 2009; Morley *et al*., 2012; Savic & Jancovic, 2006). Some researchers propose the use of the queuing method to evaluate the dump truck cycle for optimization of production schedules (Alkass, 2003; Cetin, 2004; Coronado, 2014; May, 2012). The match factor method is used by several researchers to determine the optimal number of trucks (Caccetta & Burt, 2013; Choudhary, 2015; Morley, 2012; Nageshwaraniyer, 2013). A match factor value of more than one indicates that the truck is inefficient and unproductive because of the queue time for the dump truck, on the other hand, the match factor of less than one makes the excavator wait for the dump truck for a long time (Caccetta & Burt, 2013). Some researchers try to combine linear programming and queuing methods (Bascetin & Ercelebl, 2009; Cetin, 2004; Coronado, 2014; Sahoo, 2012) or linear programming and match factors (Morley, 2012; Nel, 2011).

This study try to analyze the optimization of overburden production in coal mining in the mining area of PT.X Samarinda, East Kalimantan using the match factor method, the queuing method and the linear programming method. The objectives are 1) determine the optimal dump truck requirement planning for coal mining at PT.X Jobsite KTD, 2) determine optimal production at coal mining at RML CORP Jobsite KTD, and 3) determine minimum production costs for coal mining at PT.X Jobsite KTD.

2. Theoretical Review

2.1 Cycle Time

Cycle time is the time required for a device to perform a certain activity from start to finish and be ready to start over. In any mechanical earth moving activity, mechanical tools work according to a certain pattern, which in principle consists of several cycle time components, movements in one cycle time (Choudhary, 2015).

Excavator cycle times consist of digging, swinging loaded, spilling, swinging empty. The dump truck cycle time consists of time to be filled to the full by the excavator, transporting it to a full body, taking a position for spilling, spilling material, returning to the front with an empty load and taking a position to be refilled. The following is the calculation equation for the excavator and dump truck cycle times.

$$CT_E = DgT + SLT + DpT + SET \quad (1)$$

Where:
CT_E : Cycle Time Excavator (second)
DgT : Digging Time Excavator (second)
SLT : Swing Load Time Excavator (second)
DpT : Passing Time Excavator (second)
SET : Swing Empty Time Excavator (second)

$$CT_{DT} = LT + HLT + SDT + DT + RT + QT + SLT \quad (2)$$

Where:
CT_{DT} : Cycle Time Dump Truck (second)
LT : Loading Time Dump Truck (second)
HLT : Hauling Load Time Dump Truck (second)
SDT : Spotting Dump Time Dump Truck (second)
DT : Dumping Time Dump Truck (second)
RT : Returning Time Dump Truck (second)
QT : Queueing Time Dump Truck (second)
SLT : Spotting Load Time Dump Truck (second)

2.2 Excavators and Dump Trucks Productions

Information on production targets and production of heavy equipment per unit will determine the number of equipment needed according to capacity, the type of material to be handled, and the level of ease of operation and maintenance. The excavator's production capability can be calculated using the following formula:

$$P_E = 60/CT_E \times BC \times BFF \times WE \times SF \quad (3)$$

Where:
P_E : Excavator Production (BCM/Hour)
CT_E : Cycle Time Excavator (minute)

BC : Bucket Capacity (m^3)
BFF : Bucket Fill Factor (%)
WE : Work Efficiency (%)
SF : Swell Factor

The production capacity of a dump truck can be calculated using the following formula:

P_{DT} = 60/CTDT x n x BC x BFF x WE x N x SF (4)

Where:
P_{DT} : Dump Truck Production (BCM/Hour)
CT_{DT} : Cycle Time Dump Truck (minute)
n : Bulk Amounts
BC : Bucket Capacity (m^3)
BFF : Bucket Fill Factor (%)
WE : Work Efficiency (%)
N : Number of Dump Trucks (unit)
SF : Swell Factor

2.3 Production Costs

According to Mohutsiwa and Musingwini (2015), mining production costs are costs incurred from mining operations which are divided into fixed costs and variable costs. Fixed costs include depreciation, interest and taxation. Variable costs include fuel costs, repair costs, and labor costs. In general, production costs can be measured by the total cost divided by the production produced, which is usually in USD / BCM.

The production costs can be divided according to the activities in a company's business processes. According to Lind (2001), the production cost per activity is often referred to as Activity Based Costing (ABC). In coal mining, Activity Base Costing is also commonly used. Some examples of Activity Base Costing in coal mining, especially in operations such as at PT. X (Engineering RML, 2018).

2.4 Match Factor (MF)

The compatibility factor is usually used to determine the number of dump trucks that are suitable (compatible) in serving one excavator unit (Burt, 2008). The compatibility factor of the excavator and dump truck can be formulated as follows (Morgan & Peterson, 1968 in Burt, 2008):

$$MF = \frac{\text{NDT x CTDT}}{\text{NE x CTE}} \quad (5)$$

Where:
MF : Match Factor
N_{DT} : Number of Dump Trucks (unit)
CT_{DT} : Cycle Time Dump Truck
N_E : Number of Excavators (unit)
CT_E : Cycle Time Excavator

If the results of the calculation are obtained MF less than 1, means the excavator will often be idle, if MF equal to 1 then no excavator and dump truck are idle, and if MF larger than 1 means the dump truck will often idle.
The number of dump trucks needed to serve one excavator unit can be found using the compatibility factor formula above, with several assumptions that must be made, namely the number of digging tools is 1 and the value of MF equal to 1. So the above formula can be simplified to become:

$$N_{DT} = \frac{\text{CTDT}}{\text{CTE}} \quad (6)$$

Where:
N_{DT} : Number of Dump Trucks (unit)

CT_{DT} : Cycle Time Dump Truck
CT_E : Cycle Time Excavator

2.5 Queueing Method

The queuing theory can be used to statistically analyze the cost of dump trucks and loading equipment required for a number of trucks so that the optimum number of trucks can be determined. In addition, the queuing theory can also provide an overview of the optimum production that can be achieved with the least cost. The application of queuing theory can take the example of a loading device used to serve several trucks, where this truck will transport the cargo to the destination, dump it, and return to the loading place for further loading (May, 2012). The queuing model in dump truck services can be described as follows:

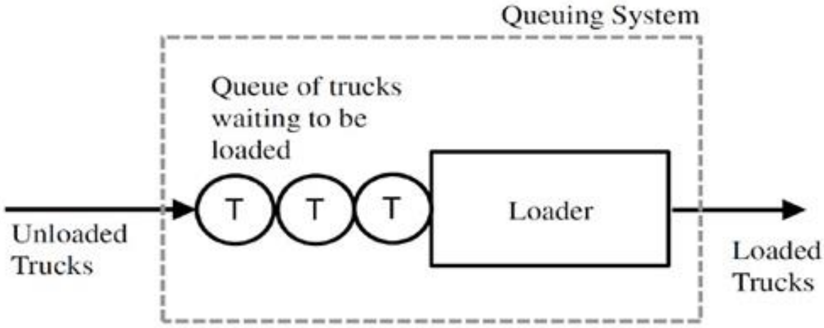


Figure 2: Loader and Dump Truck queueing system

Based on the queuing theory, it can be calculated the probability value of no dump trucks in the queue with the following equation (May, 2012).

$$Po\,(Na,x) = \frac{\frac{e^{-x}x^{Na}}{Na!}}{P\,(Na,x)} = \frac{p\,(Na,x)}{P\,(Na,x)} \qquad (7)$$

Where:
P0 (Na, x) : Zero trucks queueing probability
r : Average truck arrival time, r = 1/Ta
e : Natural logarithm constant (2,71828)
m : Average service per hour, m = 1/Ts
Na : Amount of Truck in a fleet
Ta : Truck cycle time, exclude loading time (hour), 1/r
x : Amount of Trucks required in a fleet, x = m/r
Ts : Truck loading time (hour), 1/m
p : Poisson Cummulative Distribution

In open pit mining operations, the dump truck moves from the loading point to the dumping location and back, sometimes stopping for a short break at the waste dump or regularly going to the fuel station and to park up for shift change. In other conditions, you have to wait at the loading point or waste dump and queue at the fuel station. This situation is due to variations in load times, loading running time, waste dumping time, return time and various time intervals between trucks arriving in the area. The existence of road repairs and work by other tools along the route also affects this variation (May, 2015).

This waiting time will reduce production capacity. This will increase if a dump truck unit is added to an existing system and no changes are made to the system. For example, if there is no change in truck mileage, the addition of these units will cause the productivity of the dump truck to decrease and the productivity of the excavator to increase. This estimated waiting time is important in designing and selecting equipment for new pits as well as estimating the travel time of trucks both loaded and empty (May, 2015). The amount of waiting time can be calculated using following equation:

$$W = (TL + STD + DT + TE) - (N-1)(STL + LT) \quad (8)$$

Where:

W : Waiting Time
TL : Travel Time Charged
STD : Positioning time at the material dump site
DT : Material dump time
TE : Empty time travel
N : Required amount of trucks
STL : Positioning time at loading location
LT : Material charged travel

3. Research Design

The research location is located in the mining contractor working area in the KTD Corp concession, namely in Embalut Village, Tenggarong Seberang District, Kutai Kertanegara Regency, East Kalimantan. This location can be reached by road from Balikpapan ± 2.5 hours' drive. PT. KTD - Embalut covering an area of 2,973 hectares. The boundaries of the area with latitude 0o18'25,8 " LS - 0o22'30 "LS to longitude 117o5'0" East Longitude - 117o7'49,9 "East Longitude. In the north it is bordered by Bangun Rejo Village and to the west it is bordered by Embalut Village.

Mining activities carried out are in an open pit system, usually this type is applied to coal deposits that have thick layers and is carried out by making benchmarks. The stages in coal mining activities at PT. X are (1) land clearing, (2) top soil removal, (3) ripping and dozing, (4) stripping the overburden (overburden removal), (5) excavating and transporting coal, (6) transporting overburden to overburden to disposal, (7) transporting coal to stock pile/crusher (coal hauling to crusher/stockpile), (8) coal transportation to port and shipment, and (9) reclamation as can be seen in Figure 3.

The data used in this study consisted of primary data and secondary data. Primary data in this study are excavator cycle times and dump truck cycle times obtained from direct observations in the field. Secondary data in the form of a map of the location of the activity, the target volume of coal overburden removal work, dump truck rental prices, and other supporting data related to this study were obtained from companies and other relevant agencies.

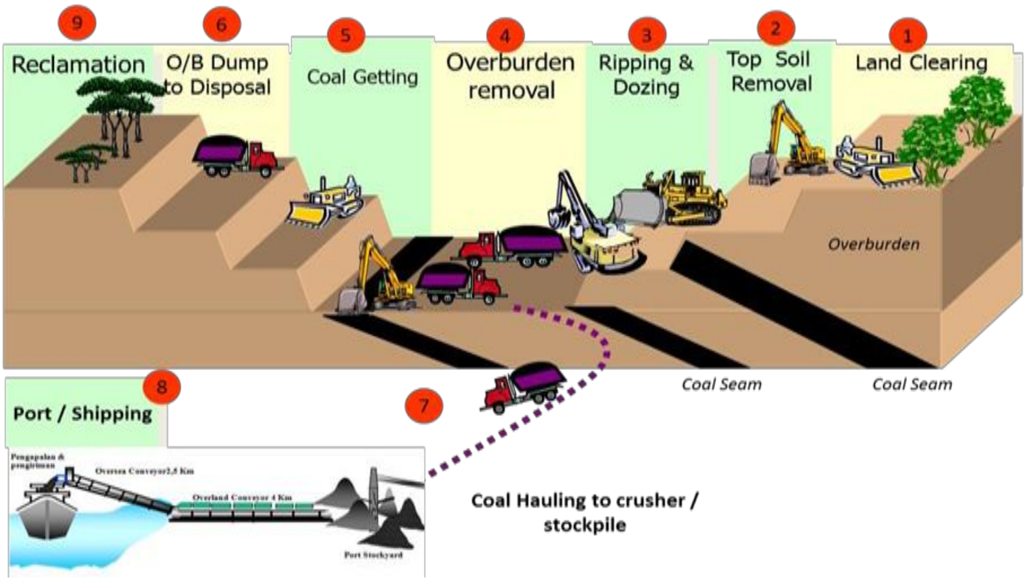


Figure 3: Mining activity

In the initial stage, data suitability testing (Poisson distribution), data adequacy test, data normality test, and data uniformity test were carried out with the help of Minitab 16 and IBM SPSS Statistics 24 software. If the data test results are declared feasible, the next step is data processing and data analysis using following steps.

1. Determine the optimal number of dump trucks in the following manner:
   a. Calculating dump truck needs with the Match Factor method.
   b. Calculating the need for dump trucks with the queuing method with the following stages:
      - The queue model used is a single service (M/M/1), the population is assumed to be unlimited and only served by 1 excavator with first come first served service discipline.
      - Calculating the optimization of the number of dump trucks using the queuing theory (M/M/1) according to equation (7), while the calculation of the excavator waiting time is used equation (8).
   c. Counting the number of dump trucks using the linear programming method. Data processing steps are carried out by determining the decision variables, limitations, and objectives. Furthermore, the data is processed in the POM for Windows software program.
2. Determine the optimal amount of production
   a. Calculating the optimal amount of production using the match factor method. Based on the optimal number of dump trucks using the match factor method, the total production amount can be calculated using equations (3) and (4).
   b. Calculating the optimal amount of production using queuing and linear programming methods. Based on the optimal number of dump trucks using queuing and linear programming methods, the total production amount can be calculated. The ideal production can be determined by calculating the productivity of the dump truck multiplied by the number of units.
3. Determining the minimum production costs
   Based on the calculation of the number of dump trucks and production using the match factor, queuing and linear programming methods, the dump truck production costs can be calculated according to the cost of the equipment per hour for each method.

This analysis is used in examining the magnitude of the contribution shown by the path coefficient on each path diagram of the causal relationship between independent variables on moderation and its impact on the dependent variable. Path analysis is a technique for estimating the effect of the independent variable on the dependent variable from a set of observed correlations, providing a pattern of causal relationships between variables. This path analysis technique will be used in testing the amount of contribution (contribution) shown by the path coefficient on each path diagram of the causal relationship between the independent variable on moderation and its impact on the dependent variable. Correlation and regression analysis which is the basis for calculating the path coefficient. There are three stages in conducting path analysis, namely formulating hypotheses and structural equations, calculating the path coefficient based on the regression coefficient, calculating the path coefficient individually.

4. Results and Discussion

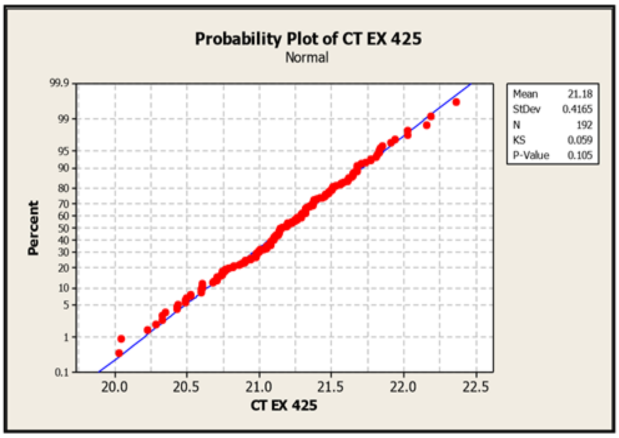
4.1 Main Mining Equipment

All materials are loaded by the excavator (loading tool) with the Komatsu PC 400 type loader. The material is then transported by a dump truck with the Volvo brand FM 370 type. The excavator and dump truck are the main mining equipment in RML Corporation's operational activities. A total of 6 units of excavators with 5 units of ready status (ready to work) 1 unit of breakdown status (damaged in repair), 32 units of dump trucks with 27 units ready and 5 units breakdown.

The capacity of the PC 400 bucket is 2.0 BCM, while the vessel is 10,8 BCM. The excavator tool costs USD 60,8/hour and the dump truck costs USD 30,5/hour. The productivity target for Komatsu PC 400 units is 240 BCM/hour with a total production target per hour of 1200 BCM. The target production cost for loading activities is 0,256 USD/BCM and for hauling costs 0,677 USD/BCM so that the total production cost of loading and transporting is 0,933 USD/BCM. Based on data obtained from Engineering RML CORP, the assumption that the filling factor for the Komatsu PC 400 bucket is 90%, the vessel by the excavator is 100%, and the excavator and dump truck work efficiency factor is 0,75.

4.2 Excavator and Dump Truck Cycle Time calculations

Cycle time for excavators and dump trucks is obtained from direct observations in the field. Cycle time data were collected and validated through data sufficiency test, data uniformity and data normality (Wignjosoebroto, 2008 in Noor, 2011) with the help of Minitab 16 software. The test results showed that the data used was sufficient, uniform and normally distributed (Figure 4). The average excavator and dump truck cycle times are presented in Table 1 and Table 2.



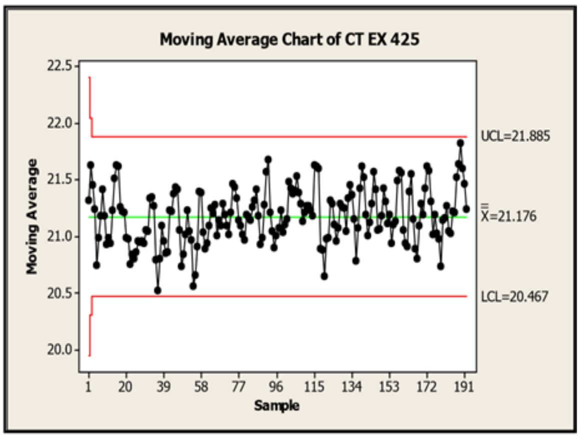


Figure 4: Normality and uniformity test result of cycle time data EX 441 with Minitab16

Table 1: Average Excavator cycle time

Unit	Digging (seconds)	Swing Load (seconds)	Passing (seconds)	Swing Empty (seconds)	Total (seconds)
EX 441	5,70	5,01	4,94	5,53	21,18
EX 442	5,91	5,82	4,11	4,62	20,47
EX 443	5,61	5,27	5,05	5,79	21,71
EX 444	6,05	5,34	3,36	4,32	19,07
EX 445	6,53	5,81	4,48	4,31	21,12

Table 2: Average Dump Truck cycle time (in seconds, unless stated otherwise)

Unit	Distance (meter)	Queueing Time	Spotting Load Time	Loading Time	Hauling Load Time	Spotting Dump Time	Dumping Time	Returning Time	Total Cycle Time	
									With Queueing	Without Queueing
EX 441	1800	39,62	10,81	127,06	276,86	18,80	29,63	227,03	729,80	690,19
EX 442	1200	21,68	15,43	122,80	220,19	22,81	39,14	146,10	588,14	566,46
EX 443	1400	15,19	27,60	130,30	266,04	33,16	35,76	168,82	676,86	661,68
EX 444	1300	15,49	35,78	114,42	199,19	20,78	41,12	201,53	628,31	612,82
EX 445	1300	27,84	23,22	127,20	195,24	17,92	39,22	207,01	628,31	609,81

4.3 Excavator Waiting Time and Dump Truck Queue Time

Distribution of data on the number of dump truck arrivals in each excavator in the field is tested by means of a suitability test (goodness of fit) with the help of IBM SPSS Statistics 20 software. The test results show that the data for dump truck arrivals is Poisson distributed (Table 3). All significance values are greater than 0,05, so it can be concluded that all the truck arrival data for each excavator have a Poisson distribution.

Table 3: Poisson distribution test result

		EX 421	EX 442	EX 443	EX 444	EX 445
N		32	35	31	31	31
Poisson Parametera,b	Mean	1,500	1,371	1,032	1,000	0,9032
Most Extreme Differences	Absolute	0,191	0,225	0,227	0,239	0,212
	Positive	0,191	0,160	0,115	0,135	0,132
	Negative	(0,152)	(0,225)	(0,227)	(0,239)	(0,212)
Kolmogorov-Smirnov Z		1,081	1,332	1,265	1,330	1,179
Asymp. Sig. (2-tailed)		0,193	0,057	0,082	0,058	0,124

Based on the calculations and simulations carried out (formula 13), the amount of optimum waiting time for each dump truck fleet that is placed at each location is presented in Table 4. When the condition of the dump truck excess unit conditions, it allows queues to occur at each excavator. The queuing time for dump trucks can be seen in Table 5.

Table 4: Excavator EX 441 wait time (in minutes, unless stated otherwise)

Transport Time	Loading Time	No. of DT (Unit)	Excavator Waiting Time
9,21	2,298	1	9,21
9,21	2,298	2	6,91
9,21	2,298	3	4,61
9,21	2,298	4	2,31
9,21	2,298	5	0,01
9,21	2,298	6	(2,28)
9,21	2,298	7	(4,58)

Table 5: Actual dump truck EX441 queueing time

Excavator Unit	DT Queueing Time	DT Cycle Time with Queueing	DT Cycle Time without Queueing
425	0,66	12,16	11,50
429	0,36	9,80	9,44
430	0,25	11,28	11,03
431	0,26	10,47	10,21
432	0,46	10,63	10,16

The comparison of overburden production by dump trucks with queues and without queues can be seen in Table 6. This potential for increased production can be optimized by reducing queuing times.

Table 6: Dump Truck (DT) production with and without queueing

Excavator Unit	Vessel Capacity	DT Efficiency	Number of DT	DT Production (minute)	
				With Queueing	Without Queueing
EX 441	10,8	0,75	6	39,96	42,25
EX 442	10,8	0,75	5	49,58	51,48
EX 443	10,8	0,75	6	43,08	44,07
EX 444	10,8	0,75	5	46,41	47,58
EX 445	10,8	0,75	5	45,73	47,82

4.4 Determination of the Optimal Number of Dump Trucks

Optimal Determination of the number of dump trucks is evaluated by the match factor method, the queuing method and the linear programming method. The optimal number of dump trucks is expected to provide optimal production at the most efficient cost possible.

4.5 Match Factor (MF) Method

Based on the calculation of the number of excavators, the number of dump trucks, excavator cycle time and dump truck cycle time, the match factor can be calculated. By using the assumption of match factor equal to 1, the number of dump trucks needed is 25 units, while the actual number is 27 units, which means that it can reduce dump trucks by 2 units.

Table 7: Number of dump truck simulation with Match Factor equal to 1

Excavator Unit	Actual number of DT (unit)	Actual MF	DT requirement unit	
			MF Simulation = 1	Rounding
EX 441	6	1,100	5,43	5
EX 442	5	1,080	4,61	5
EX 443	6	1,180	5,08	5
EX 444	5	0,930	5,35	5
EX 445	5	1,040	4,80	5
Total	**27**		**25,27**	**25**

4.6 Queueing Method

The calculation of the number of dump trucks using the match factor method does not take into account the possibility of queuing time or ideal waiting time, so to find out more about the optimal number of dump trucks at each excavator it is also necessary to optimize production based on the occurrence of queuing times and waiting times that occur. , by using the queuing theory, the optimal number of tools will be obtained.

The waiting time for EX 425 is shown in Table 8, the condition without waiting time is shown in the number of dump trucks 6 units. Thus, based on the waiting time, the optimal number of dump trucks is 6 units. When calculating the waiting time for all excavators, the number of dump trucks for each excavator can be determined and the total dump trucks as a whole. The results of the calculation of the optimal number of dump trucks based on waiting time can be seen in Table 9. Therefore, based on the waiting time, the optimal number of dump trucks is 26 units.

Table 8: Queueing time for excavator EX 441

Number of DT	P_0	$1-P_0$	Waiting time (minute)	Production (BCM/hours)
0	1,000	0,000	0,00	0,000
1	0,792	0,208	9,21	47,78
2	0,616	0,384	6,91	88,15
3	0,457	0,543	4,61	124,60
4	0,320	0,680	2,31	156,05
5	0,209	0,791	0,01	181,56
6	0,126	0,874	(2,28)	200,68
7	0,069	0,931	(4,58)	213,69
8	0,034	0,966	(6,88)	221,63

Table 9: Optimal DT with queueing time

Excavator Unit	DT Optimal Amount
EX 441	6
EX 442	5
EX 443	5
EX 444	5
EX 445	5
Total	**26**

4.7 Linear Programming Method

Determining the optimal number of dump trucks with the aim of increasing production with minimum costs can also be done by the Linear Programming (LP) method. The following is the objective function and the constraints for optimizing the number of trucks:

The objective function is the minimization of dump truck production costs.

$$Z = 0{,}7219\ X_1 + 0{,}5925\ X_2 + 0{,}6921\ X_3 + 0{,}6410\ X_4 + 0{,}6378\ X_5 \quad (9)$$

With boundaries as follow:

$X_1 + X_2 + X_3 + X_4 + X_5 \leq 27$
$42{,}25\ X_1 \geq 240$
$51{,}48\ X_2 \geq 240$
$44{,}07\ X_3 \geq 240$
$47{,}58\ X_4 \geq 240$
$47{,}82\ X_5 \geq 240$
$X_i \geq 0$
$P_j \geq 0$

Where:

C_i : Cost per Dump trucks (i = 1, 2, 3, 4, 5)
X_i : Sum of DT EX (i = 1, 2, 3, 4, 5)
P_j : Dump truck production unit (j = 1, 2, 3, 4, 5)

The optimal solution for the calculation results with the linear programming method using POM for Windows can be seen in Table 10, the result is the total number of DT is 26 units.

Table 10: Number of Dump Trucks as a result from LP program POM for Windows

Variable	LP simulation unit POM for Windows	LP simulation unit POM for Windows (integer)
X_1 (441)	5,681	6,0
X_2 (442)	4,662	5,0
X_3 (443)	5,446	5,0
X_4 (444)	5,044	5,0
X_5 (445)	5,019	5,0
Optimal Value (Z)	**17,066**	**26,0**

4.8 Optimal Dump Truck Needs Planning

The results of the optimization of dump truck needs with the match factor method, the queuing method and the linear programming method are not much different. The optimal number of dump trucks with the match factor method is 25 units with the distribution of each excavator getting 5 dump trucks. Whereas with the queuing method and the linear programming method, a total of 26 dump trucks were obtained with the spread of 1 excavator unit (EX 425) getting 6 dump trucks, and other excavators (EX 429, EX 430, EX 431, EX 432) got 5 dump trucks. The number of dump trucks which originally actually totaled 27 units can be reduced by 2 units from the results of the analysis using the match factor method or as much as 1 unit by the queuing method and linear programming. Thus, 1 dump truck unit should be allocated to another work area.

The factors that influence the planning of dump truck needs include 1) excavator productivity, 2) dump truck productivity, 3) excavator and dump truck conditions, 4) number of excavators, and 5) number of dump trucks. The productivity or production per hour of this excavator has an effect in determining the productivity of the dump truck which ultimately determines the number of dump trucks. The excavator's productivity is influenced by the excavator's cycle time, work efficiency, bucket fill factor, and bucket capacity.

Dump truck productivity has the most influence on the number of dump trucks, where with the same excavator production volume, the higher the productivity of the dump truck, the less the number of dump trucks needed, and vice versa. The condition of the availability of excavators and dump trucks that are ready to work will affect the calculation of the optimization simulation. The actual number of excavators has an effect on the number of dump trucks serving it to determine the distribution of each dump truck with a limited number, while the actual number of dump trucks has an effect on the optimization of the limited allocation of dump trucks.

4.9 Productivity Comparison

The results of dump truck productivity calculations can be seen in Table 11. Based on this table, it can be seen that all methods produce the same total productivity of 233 BCM/hour, the amount of production is able to exceed the actual production, which is 225 BCM/hour.

Table 11: Productivity comparison of each dump truck

Excavator Unit	**Actual**	**Dump Truck Total Productivity (BCM/Hour)**		
		Match Factor	**Queueing Method**	**Linear Programming Method**
EX 441	40	42	42	42
EX 442	50	51	51	51
EX 443	43	44	44	44
EX 444	46	48	48	48
EX 445	46	48	48	48
Total	**225**	**233**	**233**	**233**

From the results of the productivity of each dump truck then multiplied by the number of dump trucks per method. The comparison of the production volume of each method can be seen in Table 12. Based on this table, it can be seen that the total production volume that exceeds the production target of 1200 BCM/hour is the queue method and linear programming, which is 1208 BCM/hour, the production volume simulation method the match factor did not reach the target. When compared with the previous actual production increased by 1 BCM/hour, from 1207 BCM/hour to 1208 BCM/hour.

Table 12: Total production volume Dump Truck comparison

Excavator Unit	**Production Target**	**Actual**	**Dump Truck Total Production (BCM/Hour)**		
			Match Factor Method	**Queueing Method**	**Linear Programming Method**
EX 441	240	240	211	253	253
EX 442	240	248	257	257	257
EX 443	240	258	220	220	220
EX 444	240	232	238	238	238

EX 445	240	229	239	239	239
Total	**1200**	**1207**	**1165**	**1207**	**1207**

4.10 Determination of Minimum Production Costs

Based on the calculation of the number of dump trucks and overburden production, the dump truck production costs can then be calculated so that the minimum production costs are known. The calculation of the production cost of transportation activities (hauling cost) based on the number of DT and DT production using the Match Factor method can be seen in Table 13. As an illustration, the cost of DT EX 425 per unit is 30,5 USD / hour with a production of 211 BCM/hour and the number of DT of 5 units will result in a production cost of 0,72 USD/BCM. The total production cost for the EX 425 excavator is the hauling cost plus the loading cost of 1.01 USD/BCM.

The calculation of the production cost of transportation activities (hauling cost) based on the number of DT and production of DT for the queuing method and the linear programming method is the same as in Table 14. The efficient production cost (loading and hauling cost) is 0,909 USD/BCM.

Table 13: Production cost using Match Factor method

Excavator Unit	**Excavator Cost per unit (USD/BCM)**	**DT Cost per unit (USD/BCM)**	**Total Hauling Cost**			**Loading Cost (USD/BCM)**	**Total Cost (USD/BCM)**
			DT Amount		**DT Production (USD/BCM)**		
			Unit	**BCM/Hour**			
EX 441	60,8	30,5	5	211	0,72	0,29	1,01
EX 442	60,8	30,5	5	257	0,59	0,24	0,83
EX 443	60,8	30,5	5	220	0,69	0,28	0,97
EX 444	60,8	30,5	5	238	0,64	0,26	0,90
EX 445	60,8	30,5	5	239	0,64	0,25	0,89
TOTAL			**25**	**1165**	**0,657**	**0,262**	**0,919**

Table 14: Production cost using Queueing Method and LP Method

Excavator Unit	**Excavator Cost per Unit (USD/BCM)**	**DT Cost per Unit (USD/BCM)**	**Number of DT (unit)**	**DT Total Production (BCM/Hour)**	**Hauling Cost (USD/BCM)**	**Loading Cost (USD/BCM)**	**Total Cost (USD/BCM)**
EX 441	60,80	30,50	6	253	0,720	0,240	0,960
EX 442	60,80	30,50	5	257	0,590	0,240	0,830
EX 443	60,80	30,50	5	220	0,690	0,280	0,970
EX 444	60,80	30,50	5	238	0,640	0,260	0,900
EX 445	60,80	30,50	5	239	0,640	0,250	0,890
TOTAL			**26**	**1207**	**0,657**	**0,252**	**0,909**

4.11 Minimal Production Costs

The ultimate goal of production optimization is to optimize limited resources by achieving production optimization in accordance with the efficiency of production costs. Thus the main factor to consider is the production cost factor for each calculation method. Based on the number of dump trucks and the production produced by each method, the production costs for efficient or minimal hauling costs can be determined. The comparison of the production costs of each method can be seen in Table 17. Based on the results of the comparison, it can be seen that the most efficient cost is shown by the linear programming method and the queue, which is 0,909 USD/BCM or has succeeded in reducing production costs (hauling cost and loading cost) from 0,935 USD/BCM to 0,909 USD/BCM or a decrease of 2.69% of the actual production cost, while the initial target was 0,933 USD/BCM.

Table 15: Dump Truck (hauling) production cost comparison

Excavator Unit	Hauling Cost (USD/BCM)				
	Plan	Actual	Match Factor Method	Queueing Method	LP Method
EX 441	0,677	0,763	0,722	0,722	0,722
EX 442	0,677	0,615	0,592	0,592	0,592
EX 443	0,677	0,708	0,692	0,692	0,692
EX 444	0,677	0,657	0,641	0,641	0,641
EX 445	0,677	0,667	0,638	0,638	0,638
TOTAL	**0,677**	**0,682**	**0,657**	**0,657**	**0,657**

Table 16: Excavator/loading production cost comparison

Excavator Unit	Loading Cost (USD/BCM)				
	Plan	Actual	Match Factor Method	Queueing Method	LP Method
EX 441	0,256	0,254	0,288	0,240	0,240
EX 442	0,256	0,245	0,236	0,236	0,236
EX 443	0,256	0,235	0,276	0,276	0,276
EX 444	0,256	0,262	0,256	0,256	0,256
EX 445	0,256	0,266	0,254	0,254	0,254
TOTAL	**0,256**	**0,252**	**0,262**	**0,252**	**0,252**

Table 17: Production total cost (USD/BCM) comparison (loading & hauling)

Plan	Actual	Match Factor Method	Queueing Method	LP Method
0,933	1,017	1,010	0,962	0,962
0,933	0,860	0,829	0,829	0,829
0,933	0,943	0,968	0,968	0,968
0,933	0,919	0,897	0,897	0,897
0,933	0,933	0,892	0,892	0,892
0,933	0,935	0,919	0,909	0,909

Based on the above analysis, the linear programming method is better for use in production optimization simulations with optimal use of transportation equipment. This can be seen from the production that is close to the target and efficient production costs. Thus the linear programming method can provide better results in optimizing the use of conveyances, so that linear programming can be used as an alternative in determining the most optimum number of conveyances to achieve production targets.

This research succeeded in reducing the cost of transportation equipment by reducing the number of transportation equipment from 27 units to 25 units using the match factor method and 26 units using the queuing method and linear programming, in addition to reducing the production costs (hauling cost and loading cost) of originally 0,935 USD/BCM became 0,909 USD/BCM or a decrease of 2,7% of the actual production cost, while the initial target was 0,933 USD/BCM. The application of the results of this analysis will benefit the mining industry, especially mining contractors, because it can reduce the production costs of operational activities in the mine.

5. Conclusion

Planning for the optimal number of dump trucks needed for the removal of overburden material based on the match factor method for excavators is 25 units, based on the queuing method for each excavator, 26 units are needed, while with the linear programming method for each excavator there are 26 units. Thus, if the previous actual unit used 27 units, efficiency can be made as much as 1-2 units of DT which can be allocated to other work areas.

The optimal production for overburden material removal based on the match factor method is 1,166 BCM/hour, with the queuing method is 1,208 BCM/hour, and based on the linear programming method is 1,208 BCM/hour. Thus the optimal production is the queuing method and the linear programming method with 1,208 BCM/hour which best fits the production target of 1,200 BCM/hour.

The efficient production cost for the removal of overburden material based on the match factor method is 0,919 USD/BCM, based on the queuing method is 0,909 USD/BCM, and the linear programming method is 0,909 USD/BCM. Thus, the efficient production cost with the linear programming method with 0,909 USD/BCM is still below the target production cost of 0,933 USD/BCM.

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Competitive Intelligence and Corresponding Outcome in a Strategic Management Process: A Review of Literature

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Abstract
The strategic management literature has put a lot of emphasis on the role of intelligence in the strategic management process. However, the available literature has not been thorough in outlining the role and the potential outcome of the deployment of business intelligence. Majority of the researchers have looked at the direct relationship between business intelligence with specific reference to competitive intelligence with performance. The purpose of this paper is to review the extant literature on competitive intelligence so as to highlight its role in the different phases of strategic management process as well as the emerging phenomenon of the adoption of competitive intelligence in a firm. The authors have integrated the extant literature on competitive intelligence with that on strategic management process. The paper reviews extant conceptual, theoretical and empirical literature and raises diverse issues that present a case for a new theoretical model suitable to extend the current understanding of the phenomenon brought about by the deployment of competitive intelligence. The paper raises implications for theory and practice and suggests a theoretical model suitable to guide future research.

Keywords: Competitive Intelligence, Precision for Strategic Action, Firm Performance, Environment Business Factors, Firm Context

1. INTRODUCTION

The desire for business success has led to the business environment experiencing an increased competition both globally and domestically. The marketing environment has been portrayed as very competitive and as such, firms must be aware of their competition, competitive moves executed through products, strategic advances and competitive posture in order to succeed in turbulent environments (Johannesson, 2010). In the face of an unpredictable, volatile and competitive market place, it has been noted that a capacity for strategic thinking is needed at different levels in the organization's strategic management process (Liedtka, 1998). Strategic thinking is an important orientation within the strategic management process contributing to the achievement of the goal of strategic management of exploiting and creating new and different opportunities for the future (Branislav, Mihailovic & Marjanovic, 2014) and enhancing the organization's strategic fit in its environment. A key factor within the strategic thinking realm contributing to this aspect of fit is that of information quality. Information quality contributes to this by simply influencing the quality of strategic thinking capacity of an organization's leadership and eventually supporting organizations' decision making process for enhanced performance. This information therefore has to be supported by some intelligence and as a consequence, businesses have been forced to establish a mechanism for intelligence gathering about the whole business environment (Gračanin, Kalac, & Jovanović, 2015).

Competitive intelligence has been indicated as that business intelligence that can be adopted by a firm. Botha and Boon (2008) have reinforced the above position by holding that competitive intelligence has come in to support the strategic management process in companies mainly by acting as a sensor to indicate to decision makers whether the organization is still competitive or not. Because of the changing nature of business environment, the subject of competitive intelligence has gained prominence in the strategic management literature as it informs the process in a way that enhances not only the quality of strategic management practices but also the quality of the outcomes of the practice in terms of the results that the management desires to achieve. Calof, Richards and Smith (2015) have held on the same observation by noting that organizations have turned to competitive intelligence in order to understand their environment and consequently develop strategies. As this happens, there has been an increased concern for more concerted efforts to integrate the construct of competitive intelligence into the strategic management process as an integral practice that entrenches strategic thinking into the firm's strategic management process. This has been emphasized by the competitive intelligence's vision which Calof *et al* (2015) have summarized as that of asking questions about an organization's plausible future as well as the choice on strategies that can be used to build resilience, create an adaptive capacity to anticipate and thrive in turbulent business environment. It therefore follows that, scholarship in this area has generated an important case for efforts to be made to entrench this practice into strategic management consequently raising a point of interest among scholars to enhance its nature, role and contribution to the process of strategic management and its outcome.

As earlier indicated, organizations today are grappling with the need to enhance and sustain their performance. This need has been attributed to what has been referred to as 'not so sure business environment' characterized by high volatility, competitiveness (Tahmasebifard, 2018), uncertainty, complexity and ambiguity (Kimani & Kilika, 2019). This has led to firms wanting to outdo each other in all spheres and therefore calling for establishment or enhancement of strategic management process in order for the organization to sustain their competitive advantage (Omalaja & Eruola, 2011). Strategic management has been positioned as a way of developing a strategic position for an organization, making strategic choices for the future and eventually implementing the corresponding plan which comprises the main phases of the strategic Management process (Omalaja & Eruola, 2011). In undertaking the relevant activities across the phases, it is important for a firm to have knowledge about its market and competition since these are projected to impact greatly on the performance of an organization. Competitive intelligence comes in handy to sift information received to meet the strategic needs of a firm. Different scholars have positioned competitive intelligence as that kind of intelligence that firms need and use to gather information about their business environment (Rapp, Agnihotri, Baker, & Andzulis, 2014) and consequently use it in the formation, choice and implementation of strategies. Calof *et al* (2015) citing support from the Global Intelligence Alliance pointed that there is growth on the number of organizations that adopt and implement a competitive intelligence function, thus confirming that there is a connection between strategic management process and activities that management undertakes in order to understand their competitive environment (Johannesson, 2010). This has become an important pillar upon which calls have been made for integration of competitive intelligence processes into the strategic management processes in organizations.

2. STATEMENT OF THE PROBLEM

Even though there have been calls to integrate competitive intelligence in strategic management, such a call faces a number of challenges due to the state of extant literature that affects both conceptualization and theory formulation. Specifically, it is observed that there are issues regarding the scope of the current understanding of competitive intelligence; the role of competitive intelligence (CI) in the strategic management phenomenon in organizations; the integration of competitive intelligence into the mainstream strategic management literature; and the theoretical justification for its adoption in strategic management (Botha & Boon, 2008).

With regard to the scope of the current understanding of CI, it is observed that most scholars and practitioners have experienced dilemmas cutting across the definition and usage of competitive intelligence. Historically, competitive intelligence has been viewed as that activity whose aim is to provide an input to a competitive strategy (Mehmet, Koseoglu, Ross & Okumus, 2015). It has done this by consistently alerting firms of changes in their competitive environment (Muller, 2005). This generic view has either been contested or improved by different scholars who have suggested different perspectives of competitive intelligence; from an individual or a joint perspective. From the individual perspective, competitive intelligence has either been looked at as a process or as a product. As a process, competitive intelligence has been summarized as a process of gathering intelligence with regards to information about the business environment with the aim of guiding the management in strategic decision making in a firm (Bulley, Baku, & Allan, 2014). Some scholars have come to critique the process perspective by observing that if competitive intelligence is a process, then how would one explain the data collected by competitive intelligence process? This has brought a new angle of viewing data collected from competitive intelligence process as a product. As a product, competitive intelligence has been expressed as that kind of information that is achieved from the competitive intelligence process (Calof et al, 2015). Some scholars however, have chosen a joint outlook of competitive intelligence. That is, they have defined competitive intelligence as both the process and the product and that, they complement each other. We therefore suggest the need for integration of the different conceptualizations of the construct to consolidate the understanding so far generated.

Secondly, there exists a dilemma on how competitive intelligence has been applied and expressed by different scholars. Tarek, Adel and Sami (2016) have summarized the whole idea of competitive intelligence usage into two forms as either offensive or defensive. That is, for constant alerting or for conducting risk analysis to identify threats to the organization. In line with the same, Mehmet, Ross and Okumus (2015) have given their perspective on competitive intelligence usage as either direct or indirect usage. That is to say, directly, competitive intelligence has helped in risk management while indirectly, competitive intelligence has been used in providing an organization with an ability to elicit business strategies consequently enhancing survival and business success. Botha and Boon (2008) have observed that competitive intelligence has been used to support the strategic management processes in companies in order to indicate to management whether the organization is still competitive or not. Competitive intelligence has also been used in gathering information about the business environment (Gracanin, Kalac & Jovanovic, 2015) and in making different kinds of decisions on market entry, competitor analysis, product development as well as technological developments (Calof et al, 2015). Tarek et al (2016) have summarized all these by observing that competitive intelligence mainly corresponds with the environment to provide a better response to decision needs whether offensive or defensive. Despite all these usages of competitive intelligence, it has been noted that not all interventions of competitive intelligence have led to success in strategic management process in organizations. Majority of the scholarship in this area has looked mainly at the positive relationship between competitive intelligence and performance with scanty information on the alternative (Ion & Natalia, 2013).

Thirdly, there is an issue regarding integration of competitive intelligence in strategic management. While the study takes note of the potential brought about by competitive intelligence in strategic management, there has been limited attention put wholesomely on how to integrate competitive intelligence into the strategic management process by business strategists and scholars. This has indicated that there is still much to be explored as to how this concept can be integrated into the business strategies in order to improve the competitiveness of businesses and consequently achieve sustainable competitive advantage. It is therefore important to put in much attention since the major attraction of competitive intelligence is that of providing actionable foresight regarding competitive dynamics (Du Toit, 2015). In addition, if competitive intelligence has to be embraced as a viable practice in strategic management process, the question then would be; what will be the value proposition for management to invest in its requirements? From a strategic thinking standpoint, competitive intelligence may be construed as an investment into by organizations. It is therefore, the interest of management to find what the relative contribution it will bring to the bottom line of each firm. Over and above integrating competitive intelligence into the strategic management process, another concern closely tied to the issue of integration has been on how to fit this understanding into the main stream strategic management literature. The point of interest is the fact that strategic management literature has majorly focused on the various stages in the process which can be split into three; strategy formation, choice and implementation (Omalaja & Eruola, 2011). There is therefore need for scholarship to integrate the competitive intelligence process with the process and practice of strategic management and situate it appropriately to enhance the value of the essence of the strategic management process not only in theory but also in practice.

Lastly, there is an issue regarding the role of competitive intelligence in strategic management. There has been a lot of information on competitive intelligence within the strategic management discipline. However, business strategists and scholars have put limited attention on the integration of competitive intelligence into the strategic management process. The study has observed that firms within the developed countries appear to appreciate the need to monitor competition. This has led to realization of the ability of the business to act precisely consequently realizing successful strategic management process (Nasri, 2011). On the other hand, it has been observed that if organizations in developing countries were to embrace competitive intelligence, they would be able to gain market share (Pelliser & Kruger, 2011) as well as win economic wars (Maune, 2014) hence emphasizing the necessity of introducing competitive intelligence system into the strategic management process of a firm. Integration of competitive intelligence in strategic management process has a potential of ensuring success since the intermediate action has been seen to bring about proficiency hence leading to successful implementation of strategic management process. In addition, Sewdass (2012) found out that strategic planning activities such as environmental scanning and analysis, resources analysis, strategy formulation among others requires huge internal and external data which can only be collected through competitive intelligence.

In view of the above, the study seeks to extend and add value to the current state of knowledge on the concept of competitive intelligence by exploring how integrating competitive intelligence system into the strategic management process of organizations brings about successful strategic management in organizations. Given the limited nature of literature and glaring inconsistencies, the study has identified the need to consolidate the extant literature with a view of suggesting a relevant model that seeks to demonstrate how deployment of competitive intelligence system in strategic management process may yield desirable outcomes in the process. Thus, the paper has addressed three objectives: to review the conceptual, theoretical and empirical literatures to provide an understanding of the construct of competitive intelligence; to establish the implication of importing competitive intelligence system into the strategic management process of an organization; and to propose a suitable theoretical model indicating the relationships among the identified constructs in the emergent phenomenon.

This undertaking will be of great value to the strategic management scholarship and practitioners. First, the paper recognizes the immense potential of competitive intelligence from the practitioners' view point. Organizations will be able to enhance their strategic management process by importing competitive intelligence systems with the view of succeeding in the strategic management process. Consequently, literature is needed to inform the practice of how such strategic moves can be adopted from the understanding of the organizational leadership. Secondly, given the current state of theoretical and empirical literature, the paper recognizes the need to enhance the scholarship on competitive intelligence in order to exhibit the potential of importing competitive intelligence into the strategic management process. From this basis, the paper sees a benefit accruing to both researchers and theorists interested in identifying the gaps that may be conceptually, contextually, and methodologically explained. Lastly, the paper proposes a potential structure consisting of an intermediate and ultimate outcome within the context of operation of an organization. This goes a long way to not only provide a new theoretical model but also offer a stepping stone for the direction for future research.

3. LITERATURE REVIEW

In response to the objectives highlighted, the study has reviewed extant conceptual and theoretical literature on the construct of competitive intelligence, its adoption in strategic management and the connected phenomenon. The study has sought to provide an understanding of competitive intelligence, its perspectives, its role in strategic management, how it has been described, how it has evolved, its dimensions as well as the situations in strategic management process that require its involvement.

3.1. Perspectives and application of competitive intelligence

This section has looked at competitive intelligence perspectives, dimensions and the situations that it has applied in strategic management process. The study has observed that competitive intelligence process begins with environmental scanning activities (Nemutanzhela, 2011), and advances towards becoming complex and dynamic due to continued globalization, public accessibility of data and technological advancements (Bulger, 2016). This has brought about two views of competitive intelligence. That is, the original competitive intelligence which concentrated on data management process and the current version of competitive intelligence which has concentrated on delivery of strategic global decisions due to markets going global (Bulger, 2016).

From the reviewed literature, competitive intelligence has been expressed in three perspectives: competitive intelligence as a process, competitive intelligence as a product, and an integrated perspective. Scholarship has been developed on competitive intelligence as a process, competitive intelligence as a product and a joint approach of competitive intelligence as both a process and a product. As a process, competitive intelligence has been seen as that step of legally and ethically gathering and analyzing information about competitors and the operational markets with the aim of making better decisions (Nehenzelele, 2016a; Bulley, Baku, & Allan, 2014; Nehenzhele, 2016b; and Tahmasefibard, 2018) with regards to management concerns. It therefore suffices to point out that competitive intelligence as a process has brought in a systemic approach requirement in its operations. Du Toit (2015) has pointed out that this systemic approach includes; planning to collect information, collecting information, analyzing using several analytical tools and finally packaging the information and communicating it to the management. The data collected through competitive intelligence process has been viewed as competitive intelligence by other scholars who support the product perspective. In summary, upon successful administration of competitive intelligence as a process; the collected data is what is being considered as product and consequently coming in to support the second perspective of competitive intelligence as a product. This data has helped executives to understand their competitive market and hence make strategic decisions for the firm (Priporas, 2005).

In addition to the above discussed perspectives, it is important to point out that competitive intelligence is an old and a well-established function in organizations (Maune, 2014). Its application has been traced in organizations in developed and developing countries whereby, in developed countries, competitive intelligence activity has been positioned as a well-established function simply because; the management in these organizations are alive to the fact that if they fail to monitor the market and the competition, they will have their plans fail (Maune, 2014). The study has also noted that despite it being a well-established function, there has been a reduction in its contribution due to bureaucracies (Muller, 2005). Bureaucracy has made competitive intelligence to be viewed as a market research capability or knowledge management function hence nothing much to offer. On the other hand, in the developing countries, it has been observed that competitive intelligence system has not yet been widely known and should be introduced (Nasri, 2011) in order for the firms to increase their market shares (Pellissier & Kruger, 2011), win economic wars (Maune, 2014) and attain superior performance (Nasri, 2011).

While organizations seek to invest in competitive intelligence, the study has also observed that they can make or buy a competitive intelligence system and operate it formally or informally (Johannesson 2010). This need for competitive intelligence has been aggregated by the organization’s need to perform business analysis. Business analysis has been proven to play a key role in the strategic management process and hence the need for more intelligence on the same. From the previous literature, competitive intelligence system has been projected as a very important inclusion in the strategic management process simply because it is this collective information about the organization and its environment that comes in to influence the strategic management process within the organization. The gained knowledge has been used to enhance the organization’s own competitiveness through the strategic management process (Weiss, 2002); and develop a business strategy to counter competitors’ plans (Nzewi et al., 2016).

In view of the above arguments, it is observed that a number of things stand out of the discussions on the perspectives to competitive intelligence. First, competitive intelligence aims at providing input to a competitive strategy (Muller, 2005), competitive intelligence has great relevance to strategic thinking as well as contributing greatly to the entire strategic management process. Secondly, competitive intelligence comes in to enhance scenario planning by influencing the development of assumptions with regards to the organization’s future considering the dynamism in the business environment. Schoemaker (1995) observed that Scenario planning stands out for its ability to capture a whole range of possibilities by simplifying an avalanche of data into a limited number of possibilities. Thirdly, competitive intelligence has also been projected to aid in solving organization's strategic issues. These strategic issues involve those unresolved questions that are projected to have major impact on the course and direction of the business and as such, decisions should be made on them (Bahareh, Asadolah, Hasan & Seyed, 2015). Fourthly, competitive intelligence has also been projected to support organizational strategic moves which entails taking an out of the norm action in order to gain a strategic advantage. Over and above the already highlighted significance, competitive intelligence has also been seen to impact on an organizational competitive attacks and competitive defense. Hauser and Shugan (1983) observed that attacking and defending organizations must determine the need of any response by knowing the position of its products in the market. Competitive attack entails the options available for attacking a competitor while competitive defense has to do with those strategies developed by an organization in order to retain valuable customers that can be taken away by competitors. All these are decisions geared towards success in the strategic management of an organization.

Over and above these observations, a good question at this stage to address would be; how does competitive intelligence deliver the strategic benefits that it promises to the strategic management process? This can be answered by the observation that an investment in competitive intelligence has been viewed to be of great value addition to an organization with regards to scenario planning, strategic issues identification, establishment of strategic moves, and identification of competitive attacks as well competitive defense actions. It therefore follows that there is a need to dissect it into various dimensions reflecting the various operational needs of any organization such as the market, competition, technology and the general internal aspects of an organization. These converge into the various dimensions of competitive intelligence.

3.2. Dimensions of competitive intelligence

The literature review has established that competitive intelligence has varied usage which is geared towards success in strategic management process. This usage has been viewed from two perspectives. The first perspective is that adopted by Waithaka (2016) in which competitive intelligence is seen to come in to support the development of strategy, tactics, technological and target achievement. The second perspective of the usage of competitive intelligence is about social and organizational development. This perspective is supported by various scholars such as Tahmasefibard (2018) and Petrisor and Strain (2013).

These varied usages and understandings of competitive intelligence have led to the varied dimensions of competitive intelligence such as market intelligence, competitor intelligence, economic intelligence, customer intelligence, technical intelligence (Bulger, 2016), strategic and social intelligence (Tahmasefibard, 2018); organizational intelligence (Petrisor & Strain, 2013) and Waithaka's view as strategy oriented, tactic oriented, technological oriented and target oriented competitive intelligence (2016). The study has established that there is limited scholarship with regards to the collective impact of these dimensions. Some scholars have observed that each dimension has its role towards the overall organization's outcome while other scholars such as Tahmasefibard (2018) have pointed out that dimensions such as competitor intelligence, marketing intelligence, and technological intelligence are the ones which have positive effect on the ultimate organization's outcome. However, other dimensions such as structural and social intelligence and organizational intelligence have also been projected to impact on the success of strategic management process (Petrisor & Strain, 2013; Tahmasefibard, 2018).

It is worth noting that all these dimensions have been observed to base their foundation from environmental scanning activities. Nemuntazhela (2011) lists these environmental scanning activities to include; data, information and knowledge transformation into intelligence. This information is about products, market, competition, the organization and technology among other business environment activities. This study will therefore discuss the various dimensions of competitive intelligence to revolve around the areas of market, competitors, technology and organization.

3.2.1 Market Intelligence:

This study has observed that when organizations engage in strategic management, there is need for gathering and disseminating information on the market behavior. These market behaviors include; knowledge of customer needs, preferences, and future trends in consumer behavior, new market opportunity, new and creative segmentation among others that relate to the market (Tahmasefibard, 2018). This process of gathering this information as well as the gathered information is what this study has called market intelligence or better said, it is that competitive intelligence dimension that is adopted by an organization to acquire information and necessary knowledge required to formulate current and future plans related to the organization's strategic interests within the market (Mirkhan & Abdullah, 2017). Market intelligence is important to the strategic management process as it has been projected to help in providing necessary and important information to the management by carrying out analysis about the business, its competitors and its markets. Today, this activity is being done through the help of highly developed software tools and analytical skills of highly trained people to provide and interpret the market knowledge. This dimension of the competitive intelligence enables a firm to find out information regarding its performance and that of the competition within the market. Marketing intelligence will be indicated by market analysis and market research.

3.2.2 Competitor intelligence

Occurs and is used when the focus is on competitor behavior and the general competition. For Tahmasefibard (2018), competitor intelligence implies the extent that the firm gathers and disseminates knowledge of competitor strategies, competitor structures, new products and services as well as the substitutes and new industry entrants. Need for competitor analysis has brought about this dimension. Bulger (2016) supports this by observing that competitive intelligence is all about the competitor landscape. This landscape includes; competitor's abilities, current activities, plans and intentions. This dimension is used when there is need for competitor analysis since it is the one that affects the managers of products and operations and those involved in the development of products, business, integration and acquisitions (Ngugi, 2012).

The study has observed that organizations adopt this kind of competitive intelligence with the aim of strengthening their position and performance in the market. This has been done by carrying out analyses about the business, its competitors and its markets (Mirkhan & Abdullah, 2017). It has been observed that competitor intelligence comes in to impact on the whole three phase of strategic management process. The disadvantage of not having this dimension during strategic management is that of not knowing what your competition is doing or not doing within and without the market. This dimension has the potential of guiding the business leadership in knowing how to behave in a competitive market in order to gain competitive advantage. The role of this intelligence is mainly to help the managers within strategic business units to make strategic business decisions. Competitor intelligence has been expressed in terms of; sales win report, brand awareness and competitive differentiation feedback.

3.2.3 Technological intelligence

It is important to keep up with the industry requirements with regards to technological trends. Technology will come in to help a firm gain competitive advantage through efficiency in business management. The interest of this dimension is on gathering and disseminating knowledge on current and future technologies (Tahmasefibard, 2018). This knowledge could be on costs-benefit assessment and future technological discontinuities (Tahmasefibard, 2018). Technological changes have had great impact on all businesses and their broad environment. Technological intelligence mainly looks at the technological trends and as a result portrays to the management that broad picture with regards to the latest technological trends in the industry. Technological intelligence has often been used by strategic planning processes or by the operating managers within the business or the strategic business units. Technological intelligence has been projected to affect the managers most of whom are in charge of development of products, business, integration and acquisitions (Ngugi, 2012). Technological intelligence activities come in to enable a firm to respond fast to threats and to identify the opportunities resulting from technical or any other scientific innovation and development within the business environment. Therefore, technological intelligence will be manifested through identification of business risks, product innovation and reduction of business expenses as a result of technological advances.

3.2.4 Organizational Intelligence

This dimension has been introduced by Petrisor and Strain (2013) who envisioned the importance about collective assemblage of benefits from organization's intangible assets like knowledge from employees, management, stakeholders and customers; that is, human capital. Organizational intelligence has been portrayed as an important necessity for an organization. It mainly enables an organization to increase its capabilities by increasing knowledge and awareness (Shahram & Sepideh, 2012). It does this through organizations analyzing their surrounding quickly and meticulously and enabling them to share the results in a useful way in order to make information available to the decision makers in appropriate times (Shahram & Sepideh, 2012). Organizational intelligence has been positioned to help an organization to recognize its weak points and to strengthen its positive points. Organizational intelligence has been observed to depend on human intelligence, hence human capital. While at this, several scholars including Calof et al (2015), Nenzhelele (2016a) and Tahmasebifard (2018) who have chosen to marry both perspectives competitive intelligence, that is, as a process and a product have brought into perspective a new concept of foresight in order to enhance their discussion of competitive intelligence. They have positioned foresight as a future intelligence due to its complementing role with competitive intelligence. For them, foresight asks what the future environment will look like while competitive intelligence looks at how the environment will affect the strategic management of the organization (Calof et al, 2015). This is important because organizations need to project their future environment in order to ready itself for the projected dynamism.

In the literature on the understanding of competitive intelligence, there seems to be varying opinions about competitive intelligence with various perspectives being highlighted. However, all these opinions have been seen to converge at complementing the understanding of competitive intelligence. One of the complementarity includes competitive intelligence's role of being a critical success factor for organizations amidst fierce competition. This is as well indicated by the below scholars; Nenzhelele (2016a) in his study on competitive intelligence practice and challenges; Petrisor and Strain in their study on the approaches of competitive intelligence conducted in 2013 have stressed on competitive intelligence's role as a key element for the success of any business especially during economic and financial turbulence period. In addition to the same, DuToit (2015) has observed that competitive intelligence has value to all the business activities of an enterprise with its major attraction being to provide actionable foresight regarding competitive dynamics. As a build up to the previous study, Nenzhelele (2016b) emphasized the need for ethical and legal factors in the practice of competitive intelligence in order to differentiate it from industry espionage.

The other complementarity has come in the form of competitive intelligence's implementation process. Scholars such as Tarek, Adel and Sami in 2016 observed that despite the various dimensions of competitive intelligence; there are only two implementation aspects; that is, the offensive aspect and the defensive aspect. This has further been enhanced by Montserrat, Alsina and Morales (2016) who have noted that within the implementation of competitive intelligence, there are contingent factors which include the size of the organization, industry, organizational culture among others that cut across the dimensions of competitive intelligence. One would therefore conclude that this complementarity can be summarized to include among others; process of collecting data, aim of competitive intelligence, and implementation of competitive intelligence as well as the usage of competitive intelligence.

3.3. Import of competitive intelligence on the strategic management process

This study has established that competitive intelligence practice can be formally or informally applied (Johannesson, 2010), it can be made or bought hence managers have a role to play in its advancement. Badaoui and Chettih (2019) while studying the role of competitive intelligence in the strategic management of small and medium enterprises found out that it is very valuable to integrate competitive intelligence systems with the overall managerial systems since intelligence has a positive structural effect on strategic management. Further to the above, the reviewed literature has pointed out emerging issues as indicated by the nature of competitive intelligence. This can be seen in the works of Nenzhelele (2016a) who found out that competitive intelligence is very difficult to implement but those organizations which implement it manage to acquire a competitive advantage. This study proposes that, the deployment of competitive intelligence system in strategic management process of firms can be observed to raise three potential implications. These include; the intermediate outcomes, the ultimate outcomes and the role of the context of operation. To understand the emergence of these outcomes and the role of the context, we propose a resource based lens in identifying the effect of the import of competitive intelligence in the contexts in which firms operate.

3.3.1 The Intermediate outcome

From the resource based lens, competitive intelligence is a strategic asset; it has been projected to impact the systems of an organization consequently producing capability related outcomes. Valuable resources are termed as strategic assets (Barney, 1991). Upon the deployment of competitive intelligence into the strategic management process, there is an expectation of achieving success in strategic management. It has been observed that whenever competitive intelligence system is deployed into the strategic management process, there is an intermediate outcome that is achieved (Baker, 2014). The study has explained this outcome to touch on the ability of the organization to develop a precise ability for action. This study has called this ability the precision for strategic action, whose consequence is to enhance the organizational ability to form, choose and implement strategies. This importance of competitive intelligence has been documented by several scholars such as Rapp, Agnihotri and Baker (2014) who have emphasized on its ability to shape the strategic decision making process in organizations. In addition, some scholars have emphasized that competitive intelligence is a tool that enables competitive advantage by influencing organizations on dimensions such as customer, financial, human resources as well as the overall organizational effectiveness (Sepahvand, Nazarpoori & Veisi, 2016).

This study has indicated this construct to include; attainment of proficiency, ability to control the markets and consistently and strategically position the organization. It is therefore projected that this outcome will lead to the organization's ability to be precise in its strategic action within the strategic management process. In conclusion, the study has shared the same view with Barney (1991) that competitive intelligence will lead to a firm achieving proficiency and consequently creating, choosing and implementing a strategy that will lead to achieving success in the strategic management process. Well said, proficiency has been indicated by knowledge, competence and capability; market control has been indicated by distribution and supply; and positioning has been indicated by ownership and control of assets.

3.3.2 The ultimate outcome

Strategic assets have a greater role in the realization of sustainable competitive advantage and superior performance (Kyengo & Kilika, 2017). This importance has been seen and expressed in various scholarly articles. For example, Carmen, Fernando and Ramon (2003) have argued that the outcomes in an organization are dependent on the match between organization's capabilities and the multiple challenges faced in the business environment. This study has introduced competitive intelligence as a strategic asset due to its ability to fit into the VRIN perspective (Kyengo & Kilika, 2017).

In the current global competition, firms are investing in strategies in order to gain competitiveness. Firms are doing this through continuously seeking to improve their competitive advantage. With the injection of competitive intelligence which the study introduces as a strategic asset into the strategic management process, the ultimate expectation is attainment of competency that leads to attainment of sustainable competitive advantage. Barney (1991) has defined sustained competitive advantage as a non-duplicable advantage. Competitive intelligence has emerged as a viable strategic option that organizations can adopt and deploy as a source of competitive advantage in the strategic management process. This is mainly due to its ability to influence the making of different kinds of decisions including market entry, product development, and research and development (Calof et al, 2015). These decisions have enabled a capability for strategic actions. This has justified the thinking that competitive intelligence is the connection between the strategic management process and those activities undertaken by management in order to understand their competitive environment (Johannesson, 2010).

A realization of the intermediate outcome has been projected to enhance the organization's ability to formulate, choose and implement strategies. Successful administration of competitive intelligence system into the strategic management of an organization has been projected to lead to the achievement and implementation of strategic management process. Success in strategic management has been indicated by superior performance of the organization. Performance has therefore come in as the ultimate objective of any strategic action in a firm. Performance has however been understood differently. Majority of studies have been seen to incline towards the financial perspective (Chenhall & Kim, 2007). The same scholars however have advised firms against overreliance on the financial perspective and called for employment of other non-financial indicators when measuring performance. These have been projected to provide better predictors to the organization's long term goals other than the short term goal of profit and financial measures as well as clarifying a broader role of performance measures in organizations (Chenhall and Kim, 2007). This study therefore projects the indicators of non-financial perspective of performance to include; market understanding, sustainability, environmental understanding and responsiveness.

This has been reinforced by scholars such as Gatibu and Kilika (2017) who have looked at the responsiveness understanding from the level in which individuals fulfill the expectations concerning their expected behavior, situation, context, circumstance or job; Tahmasebifard (2018) has explained market performance in form of sales growth, market share, profitability and customer retention rate. Burca, Ali and Cemre (2013) reviewed papers on performance and specifically, strategic performance measurement and observed that it is a means to: implement and reformulate strategy; communicate key objectives; provide strategic alignment; support process improvement; and encourage incremental innovation. In conclusion, this study has observed that the deployment of competitive intelligence system into the strategic management process, leads to increased capability of the organization to realize success in strategic management process indicated by achieving and sustaining superior performance.

3.3.3 The role of the Organizational context

With the deployment of competitive intelligence into the strategic management process in firms, the main projection has been the attainment and enhancement of the organization's competitive advantage and eventual superior performance. While pursuing success through deployment of competitive intelligence system, the study has observed certain factors that have enabled or disabled the adoption of competitive intelligence into the strategic management process. The study has observed that for competitive intelligence to succeed, both internal and external environmental factors have to be considered (Nenzhelele, 2016a; Ahmad, Wright & Pickton, 2004). The internal factors consist of; the size of the organization which influences the kind of resources to be allocated towards the competitive intelligence system, individual factors which influence how the organization collects and interprets information, employee dispositions and organizational culture (Montserrat et al, 2016 and Maune, 2014). The external factors have been indicated to include; operating environment where the organization operates has majorly got to do with the degree of changes in the environment. This study has observed a mixed concern with regards to the role played by these contingent factors. This study has observed that these contingent factors as indicated by the organizational context either come in to enable or disable the implication of integrating competitive intelligence system into strategic management process. This has been seen on how these factors influence the degree of information needed and used within development and deployment of competitive intelligence system in strategic management process (Montserrat et al, 2016).

The study is of the view that since adoption and deployment of competitive intelligence in strategy formation, choice and implementation leads to phenomenon of interest to scholars and the practitioners; developing a theory based on deployment of competitive intelligence in the strategic management process reflecting its intermediate and ultimate outcomes as well as the contingent factors that condition the behavior of the phenomenon is necessary. It is also very necessary to validate the proposed theorem through an empirical approach. Hence, proposing a new theoretical model goes a long way in not only informing future empirical work but also in advancing authentic scientific knowledge in the area of strategic management involving the deployment of competitive intelligence. Therefore, there is a theoretical implications arising from the conceptualization and operation of competitive intelligence systems in organizations. Competitive intelligence can be considered as part of the organization's management information system and knowledge management system. Therefore, its integration into knowledge management system so as to derive its promised benefits raises theoretical implications on the set of suitable theories to anchor its phenomenon in an organization's strategic management process.

3.4 Theoretical Review

The previous discussion on the conceptual review has attempted to provide a comprehensive understanding of the construct of competitive intelligence highlighting its historical path and the possible outcome from its deployment in an organization's strategic management process. Strategic management requires theories meant to explain the emerging issues from the deployment of competitive intelligence system. Some of the issues that have been documented to have emerged from the conceptual review include; an emerging need for knowledge generation and management, competitive intelligence system has come out as a resource whose investment in is necessary, managerial role on strategic thinking and finally those factors that have influenced the interaction between strategic management process and competitive intelligence. Therefore, it is important to take note of some of the common bases for strategic management theories; consequently, it is needful to underpin this understanding on the appropriate theoretical grounding (Omalaja & Eruola, 2011). This paper has advanced a case for a study based on competitive intelligence and its role in the strategic management process in firms. This is because of the idea that business organizations have as their main objective the achievement of competitive advantage and profit maximization (Omalaja & Eruola, 2011). To support this, this paper will borrow much from profit-maximizing, competition and resource-based theories.

3.4.1 Resource based view

Developed by Penrose in 1959 and later initiated in mid-1980, by Wernerfelt in 1984 and Barney in 1986, this theory provides a thinking to unravel causal links among resources, capabilities and competitive advantage. The whole of competitive intelligence is aimed at collecting information necessary for strategic management whose consequence will have a lot to do with the firms' resources. Therefore, for this theory, organizations gain competitive advantage through accumulating valuable resources and capabilities at the firm's disposal (Wernerfelt, 1984) which lead to the differences in organizations' outcome could be as a result of the variances in their resources. This perspective stresses on resources of the company which could be tangible or intangible assets such as brand name, customer loyalty, reputation, research and development capabilities, managerial capabilities and skills among others (Wernerfelt, 1984). Competitive intelligence is a managerial capability system that can enable a firm to be a step ahead of the competition through enhancing the different phases of strategic management.

Competitive intelligence system is a resource that when incorporated into the strategic management process would lead to formation and implementation of a value creating strategy not simultaneously being implemented by any current or potential competition (Barney, 1991). It is this value creating strategy that will lead to an organization attaining a competitive advantage and the eventual outcome of superior performance. This is so because when an organization develops knowledge, it is able to offer competitive advantage due to it being valuable, rare, inimitable and non-substitutable (Barney, 1991). Barney, (1991) has pointed out that a resource must meet the VRIN criterion in order to provide competitive advantage. The VRIN criterion means that a resource must be valuable; this happens when it provides a strategic value to the firm. A resource must be rare; when the resource is difficult to find among the existing and potential competitors of the firm. The resource must be inimitable, meaning that it's not easy to copy or imitate it. And finally, the resource has to be non-substitutable. Gary, Wood, and Pillinger, (2009) point out that recent research suggests that managers often make strategic choices in novel situations by utilizing their knowledge derived from past learning and experiences. With competitive intelligence being a resource, it has been anchored and supported by this theory.

3.4.2 Knowledge based theory

This is a theory that was brought to perspective by James Grant in 1996 as growth from resource based view. This theory holds that knowledge is a strategic resource in an organization (Kaplan, Schenkel, Krogh & Weber, 2001) and Sveiby (2001). This is justified from its non inimitability quality of resources from the resource based view. The competitive intelligence perspective of a product defines data collected as knowledge which is therefore accumulated and protected by the management for strategic management processes (Nickerson & Zenger, 2004). It therefore follows that competitive intelligence as a system has come in to support organizations with their strategic management by increasing the potential of an organization's performance through knowledge management and improvement (Gisela, Gomez, Fernandez & Palomo, 2019). From the perspective of competitive intelligence as a product, the data produced by the process has been positioned as kind of knowledge that is strategic in an organization due to its inimitability quality. The gathered knowledge plays an important role towards the success of strategic management in an organization. In summary, competitive intelligence can be used to create knowledge which will enable an organization to highlight its strengths and improve the weakness of their competitor (Johannesson, 2010). It is this usage of competitive intelligence that brings in the relationship between competitive intelligence and knowledge based theory. This knowledge comes in to enhance an organizational capability and hence an organizational ability to be precise in action.

3.4.3 Managerial Cognition Theory

The Human resource component is very important in the administration of competitive intelligence system in the strategic management process. It is so because; the success of this activity is dependent on the managers and their managerial cognition. Strategic management is a managerial function and hence factors such as the executive's personalized interpretation, personal interpretation of a function, their values and personalities cannot be ignored. The essence of managerial characteristics within the strategic management process is seen in its influence on the intermediate and ultimate outcome of the firm. As the role of knowledge in organizations has dramatically expanded, the focus has turned on the ways on how we interpret our surroundings. This has led to the studies focusing on the way managers in organizations interpret both external and internal organizational environment (Uotila, 2015). Managerial cognition is all about how managers attend and interpret the business environment to determine their strategic actions. Buyl, Boone, and Matthyssens, (2011) have pointed out that managerial cognition refers to cognitive structures such as the top management team's beliefs about environment and strategy and cognitive processes such as scanning, sense making and interpretation. The knowledge developed by the organization will enable the management to be able to make strategic decisions with the aim of succeeding in the strategic management process. Because managers devise strategies based on their cognitions and perceptions, it is critical to understand how such managerial cognition leads to actual outcomes of environmental strategies (Yang, Wang, Zhou, & Jiang, 2018). To Sucheta and Narayanan, (2004) managerial cognition is one of the drivers of strategic actions. Managerial cognition can therefore be explained to be all about how managers notice and interpret changes in their organizational contexts, greatly shapes a firm's strategic decisions and actions. This theory has been positioned to support strategic management process.

3.4.4 The open systems theory

The open systems theory was introduced by Ludwig Von Bertalanffy. According to Bertalanffy (1950), open systems theory states that firms are strongly influenced by their environment. Strategic management process borrows a lot from the influence of the business environment. The environment consists of all players that exert forces that are economic, political, technological and social in nature. Harcourt and Cornell, (2015) observe that, for a successful strategic management process, a firm should operate in open system and not closed system. This is to say that, management should be cognizant of the environment in the strategic management process. It therefore follows that it is necessary for any firm to interact with its external environment in order to survive and succeed. During the administration of the competitive intelligence system into the strategic management process, there are various factors within the context of operation that influence the achievement of competitive advantage and the ultimate outcome. These factors come from the open system and as such, this theory will come to have the operational context of administration of competitive intelligence anchored on it.

3.5 The case for new theoretical framework

In view of the discussions so far advanced, scholarship in strategic management needs to respond to the calls made by the observations emanating from the literature to address the emerging issues. One way of doing this is by pointing to the direction for future research in which new models would be investigated to study a phenomenon involving deployment of competitive intelligence in a firm context. Taking this route would require scholars to confront two implications arising namely; providing a philosophical justification for such a move and; identifying the specific components of the phenomenon.

In terms of the philosophical justification required, we point out the role of theorizing in knowledge advancement in a discipline. Omalaja and Eruola (2011) describe a theory as a set of principles on which the practice of an activity is based; or better said, an idea used to account for a situation. Thus, a theory plays an important role in the advancement of knowledge in spite of the raging debates as to its exact place whether it should inform empirical research or should be informed by empirical research. In proposing a new theory, the study needs empirical evidence to support the flow of the logic proposed in the conceptual and theoretical literature. This study therefore will aim at playing a key role towards advancing knowledge in strategic management with regards to the administration of competitive intelligence. In terms of the philosophy of knowledge, we need to import the role of the constructs of ontology and epistemology. Ontology entails the object of investigation while epistemology entails the stance toward the meaning and process of obtaining knowledge (Hathcoat, Meixner & Nicholas, 2018).

Research philosophy can embrace a positivism paradigm which has a deductive view and a theory testing approach. This philosophy embraces an objectivism ontology; whose objective is to explain how things happen (Moon & Blackman, 2013). That is, what could happen with the introduction of competitive intelligence system in the strategic management process? This will be contrary to the interpretivism philosophy which embraces subjectivism ontology in which an inductive and theory building approach is taken by a study (Moon & Blackman, 2013). Thus, we find a reliable basis that ontologically and epistemologically stand justified to propose a new model based on: Clear emergence of constructs associated with competitive intelligence in the context of an organization; Supporting conceptual and theoretical reasoning and Supporting empirical evidence.

3.5.1 Clear emergence of constructs

This literature has identified several concepts associated with the phenomenon brought out by the deployment of competitive intelligence. In this phenomenon, competitive intelligence has been expressed as the antecedent construct being introduced as a strategic asset whose integration into the strategic management process has been proposed to lead to unobservable action which the literature has introduced as intermediate construct. This study has identified this unobservable action to entail precision for strategic action and has been expressed as proficiency with the ability to bring in a capability into the firm. While at this, there are those factors which have been observed to have a contingent effect on the relationship between the antecedent construct and the intermediate construct; the relationship between the intermediate construct and the ultimate construct as well as the relationship between the antecedent construct and the ultimate construct. This gives the study a clear path with regards to the constructs associated with competitive intelligence within an organization.

3.5.2 Supporting conceptual and theoretical reasoning

Competitive intelligence has been positioned as a strategic asset and hence a resource whose import is bound to introduce a proficiency brought by the knowledge gained from the competitive intelligence itself and the information collected through the competitive intelligence process. Resource based view theory has been positioned to anchor the antecedent construct of competitive intelligence with the knowledge based view theory anchoring the intermediate construct of precision for strategic action. The study has also established that there is a major role played by the organizational context with regards to the whole model of importing competitive intelligence system into an organization. This has been observed to be guided by the fact that businesses learn from each other through influencing each other in order to enhance their performance. Therefore, this contingent construct has been anchored on the open systems theory with the ultimate construct of performance being supported by the managerial cognition theory.

3.5.3 Supporting empirical evidence

In addition to the extant conceptual and theoretical literature that supports the existence of a phenomenon involving competitive intelligence, there are diverse empirical attempts that add support to the conceptual and empirical literature. These studies may generally be categorized into three streams that cut across understanding competitive intelligence, adoption of competitive intelligence into strategic management and the environmental impact on the adoption of competitive intelligence.

3.5.3.1 Understanding competitive intelligence

This stream has reviewed studies done by Nenzhelele (2016a), (2016b) and Petrisor and Strain (2013). The studies focused on competitive intelligence and the understanding of it as an intervention within the strategic management process. The studies established that competitive intelligence is a critical success factor for all businesses amidst fierce competition and economic and financial turbulence. In a study on competitive intelligence practice and challenges; Nenzhelele (2016a) noted that competitive intelligence is a critical success factor for all businesses amidst fierce competition. Further to the same, Petrisor and Strain in their study on the approaches of competitive intelligence conducted in 2013 stressed on competitive intelligence and viewed it as a key element for the success of a business especially during economic and financial turbulence period. As a build up to the previous study, Nenzhelele (2016b) emphasized the need of ethical and legal factors in the practice of competitive intelligence in order to differentiate it from industry espionage.

3.5.3.2 Adoption of competitive intelligence into the strategic management

Studies done by Adidam, Banerjee, & Shukla, (2012) and DuToit (2015) were also reviewed. Adidam, Banerjee, & Shukla, (2012), while studying the relationship between competitive intelligence practices and market performance of firms and DuToit (2015) while looking at the historical development of competitive intelligence had their focus on the potential brought about by the deployment of competitive intelligence system into the strategic management process. DuToit (2015) found out that performance is not the immediate outcome of competitive intelligence. For this scholar, the immediate outcome could only be indirectly captured as indicated by an ability to enhance performance. The scholar supported this argument by pointing out that competitive intelligence system is a valuable venture with its major attraction being that of providing actionable foresight regarding competitive dynamism. On the other hand, Adidam et al (2012) found out that there is a direct outcome with the deployment of competitive intelligence system into the strategic management process. This study indicated the role of competitive intelligence as that of ensuring performance. For these scholars, upon the deployment of competitive intelligence, organizations should expect a direct and measurable outcome.

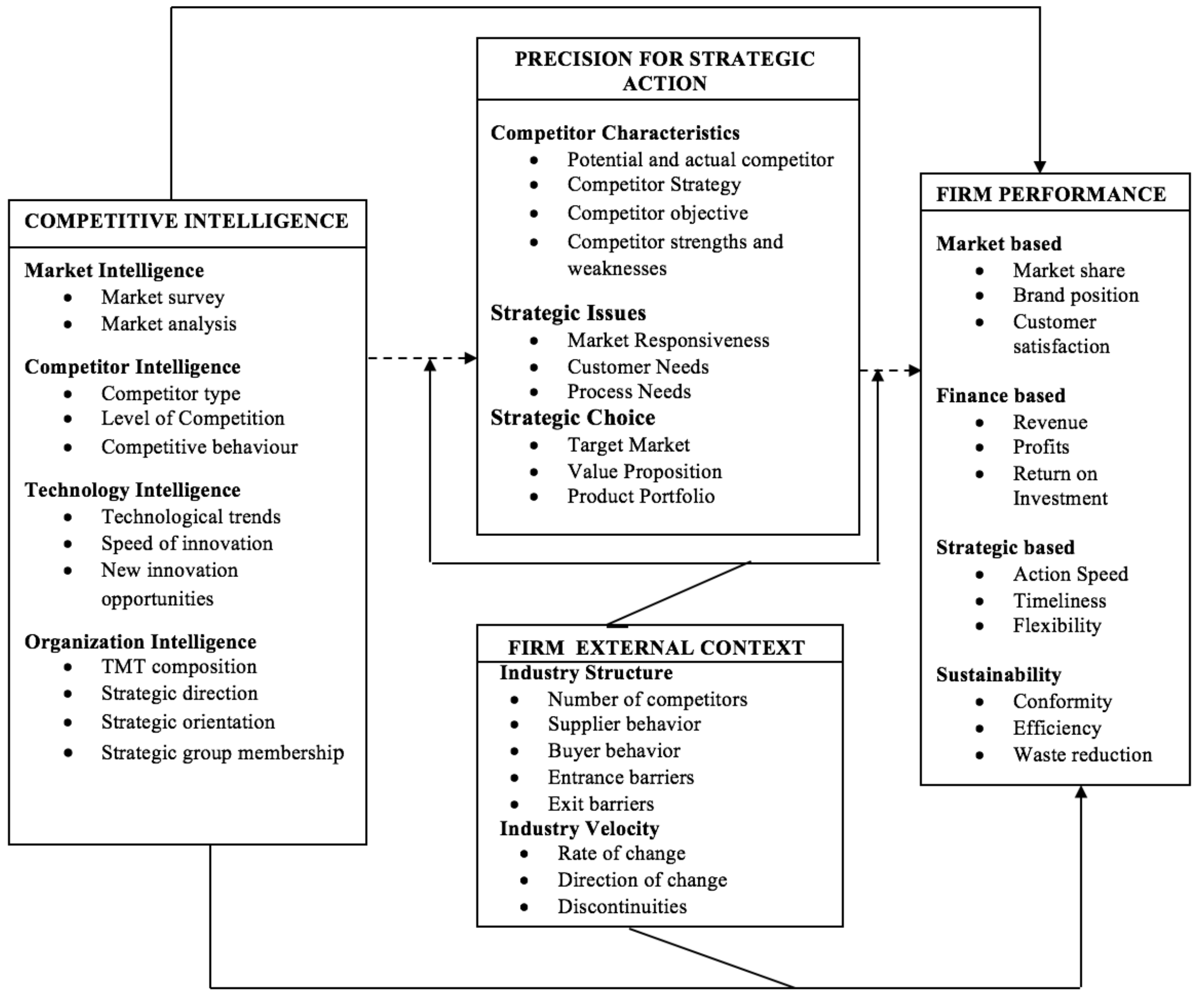
3.5.3.2 Business environmental impact on the adoption of competitive intelligence

This branch of empirical studies comprises those done by Montserrat, Alsina and Morales (2016); Petrisor and Strain (2013). The studies found out that while adopting competitive intelligence system into the strategic management process of firms, there are those factors whose role is to moderate the relationship between competitive intelligence and its outcomes. This study therefore summarized those factors as organizational context factors. In addition, the study found out that as a result of the pressure within the business environment, competitive intelligence cannot be administered as a universal intervention. Consequently, competitive intelligence has to differ from one environment to another in order to achieve and sustain performance.

Despite the achievements on the empirical investigation on competitive intelligence, the diversity of the scholars has pointed at the need to extend this level of scholarship into new frontiers. Several suggestions have been made pointing at the need to focus future research on competitive intelligence towards; the need to carryout competitive intelligence legally and ethically; identifying critical information needs and relevant information that are a challenge when practicing competitive intelligence, and to establish ways of measuring return on investment for competitive intelligence (Nenzhelele, 2016a) and towards establishing factors that may influence ethical and legal practice of competitive intelligence (Nenzhelele, 2016b); investigating the positive relationship between competitive intelligence practices and firm's market performance whereby there is an opportunity to undertake longitudinal research to investigate the organizational experience and level of maturity in the adoption and use of competitive intelligence practices for strategic and tactical pursuits (Adidam *et al*, 2012) and finally towards; competitive intelligence practices to give insights about which organizational formula is more convenient as well as defining integral procedures to manage information in order to avoid duplicate data and coordinate the different efforts allocated to competitive intelligence (Montserat *et al*, 2016). Thus, as part of our contribution to this growing body of knowledge in competitive intelligence in strategic management, we move next to propose a theoretical model.

4. PROPOSED THEORETICAL MODEL

Figure 1: Proposed theoretical model



4.1 Competitive intelligence and firm performance

Competitive intelligence has been expressed as a process or a product. This study has looked at process and the product of competitive intelligence and performance in terms of ability to scenario plan, identify strategic issues, identify competition and action and finally growth in market share since the entire strategic management process is all about business performance and as ably pointed out by Johannesson (2010), strategic management has a task of designing and implementing winning strategies. From the resource based view approach, the logic is that deployment of strategic assets leads to enhanced firm performance. The conceptual literature advocating adoption of competitive intelligence in strategic management is premised on the same logic of enhancing the impact of firms' strategies on their performance. Several empirical studies give evidence to this (Adidam et al, 2012; Waithaka, 2016 and Tahmasebifard, 2018). From the literature reviewed, it is evident that when a firm introduces a competitive intelligence intervention into the strategic management process, there is a potential of achieving growth in revenue, market share, sustainability and environmental impact realization. Competitive intelligence has been positioned as a very important system simply because it has been observed to be the connection between strategic management process and the activities undertaken by management in establishing a competitive advantage (Johannesson, 2010). In view of this evidence, we propose that:

Proposition 1: Investment in a relevant competitive intelligence system in a firm's strategic management process will positively affect the various dimensions of the firm's performance.

4.2 The role of precision for strategic action

With the introduction of competitive intelligence within the strategic management process of an organization, an intermediate outcome has been observed to be felt by the organization. It has been projected that competitive intelligence application can lead to an organization attaining an ability to be precise in its action. This ability has been indicated by the organization attaining proficiency and positioning. This is likely to bring about an advantage for the organization in engaging in its strategic management process. Gisela, Gomez, Fernandez and Palomo (2019) have echoed this by observing that competitive intelligence supports organizations with their strategic management consequently achieving great knowledge that leads to proficiency and eventually achieving or sustaining organization's performance. Therefore, the study proposes that:

Proposition 2: There is a correlation between the deployment of competitive intelligence and the corresponding firm's precision for strategic action.

Proposition 3: The strength of the relationship between the firm's investment in competitive intelligence and its corresponding dimensions of performance is dependent upon the firm's level of acquired precision for strategic action derived from the investment in competitive intelligence.

4.3 The role of firm context

The adoption and subsequent deployment of competitive intelligence by organizations is considered a strategic decision that should enhance the firm's responsiveness to its external environment to attain a strategic fit. Thus, the prevailing conditions of the firm's external environment have a role in determining not only the intensity of the intelligence gathering but also the anticipated intermediate and ultimate outcomes the firm expects to enjoy from its investments in competitive intelligence. The requirement for the strategic fit introduces contingent effects of the external context of the firm into the phenomenon arising from deployment of competitive intelligence into a firm's strategic management process. With the deployment of competitive intelligence system in the strategic management process of a firm, there are other unprecedented factors around the business environment that come in to influence the projected outcome. Nenzhelele (2016a), Montserrat et al (2016) and Ahmad et al (2004) have cited both internal and external environmental factors such as organization size, individual and organizational factors, organizational culture and self-perception and the operational sector of the firm and bureaucracies. These factors come at different levels as described by the theoretical model. These factors influence the realization of the intermediate construct, as well as the realization of performance from the intermediate construct and finally affect the direct relationship between competitive intelligence and firm performance. Simply put, their influence may be experienced in a two-fold manner. First, from unforeseeable events that competitive intelligence may not have been able to capture and avail to decision makers, thus leading to surprises. This may depend on the level of turbulence in the firm context. Secondly, in the case of a highly turbulent context, it may take a while for an organization to integrate competitive intelligence brought to its attention as well as configure its resource preparedness to respond to the emerging demands of the market. In this case, both the precision for strategic action and the ultimate response will be conditioned by the state of the firm context. Thus, the relative contribution of CI and the precision for strategic action to the level of firm performance will depend on the prevailing state of the conditions of the firm's context. Thus, the paper proposes that:

> *Proposition 4: Even though investments in competitive intelligence by firms is proposed to positively affect the various dimensions of its performance, such an effect will be contingent upon the condition of the firm's external context.*
> *Proposition 5: The existing correlation between the deployment of competitive intelligence and the corresponding firm's precision for strategic action will be moderated by the state of the firm's external context.*
> *Proposition 6: The anticipated mediating effect of precision for strategic action on the existing relationship between competitive intelligence and firm performance will be contingent upon the state of the firm's external context.*

5. CONCLUSION

The purpose of the paper was to explore the nature of the construct of competitive intelligence and indicate the phenomenon that it brings about when deployed in a firm's strategic management process. Competitive intelligence has its place in strategic management process through its role in strategy formulation, choice and implementation. When the competitive intelligence system is deployed in a firm's strategic management process, it is projected to bring about a phenomenon whose intermediate outcome is precision for strategic action with the ultimate outcome being performance. Since this conceptualization entails aspects of strategic thinking, the process is conditioned by factors both within and without the organizational context which include both external and internal environment of the firm. The proposed theoretical model describes the emerging phenomenon at abstraction level which opens an avenue for empirical investigation based on the nature of the constructs and their operational indicators. In doing this, the study points towards a suitable direction for future research by highlighting the nature of constructs suitable for the empirical investigation and the roles they are expected to play. The stated propositions indicate the possible lines of relationships that future research may find suitable to test using appropriate statistical techniques so as to guide decision making and policy guidelines. The future research should however, develop suitable measurements and contexts for study in order to move to the empirical state. The authors cite the lack of testable empirical data to validate the claims of the propositions as limitations which future scholarship can overcome by developing measurement instruments, applying them to collect primary data and application of robust statistical techniques to confirm the hypotheses.

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Modeling and Forecasting Gold Prices

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Abstract
The aim of this paper is to explore the reasons of gold price volatility. It analyses the information function of the gold future market by open interest contracts as speculation effect, and further fundamental factors including inflation, Chinese yuan per dollar, Japanese yen per dollar, dollar per euro, interest rate, oil price, and stock price, in the short-run. The study proceeds to build a Dynamic OLS model for long-run equilibrium to produce reliable gold price forecasts using the following variables: gold demand, gold supply, inflation, USD/SDR exchange rate, speculation, interest rate, oil price, and stock prices. Findings prove that in the short-run, changes in gold price does granger cause changes in open interest, and changes in Japanese yen per dollar does granger cause changes in gold price. However, in the long-run, the results prove that gold demand, gold supply, USD/SDR exchange rate, inflation, speculation, interest rate, and oil price are associated in a long-run relationship.

Keywords: Dynamic OLS, Exchange Rate, Gold Future Market, Gold Price, Oil Price, Open Interest

1. Introduction

Gold is a precious metal that has been used throughout history as a type of payment and has maintained its value over time. Long ago, gold was an indication of wealth (billionaire), used in rituals, decorations, and jewelry. So far, the role of gold has changed from “store of value” to “safe investment” against financial losses and inflation hazards. The fear and uncertainty in the global economy pushed the gold price upwards, turning it to the most attractive asset for investors during all periods of crisis whether economic, financial or political. Hence, the price of gold is the mirror of the world economic situation.

Moreover, gold has unique attributes which set it apart from other commodities and contributes to economic growth for many countries worldwide. Nowadays, gold is applied widely in industry used in health, electronics, and chemical industries. However, the use of gold as an investing metal is more attractive. Indeed, the gold price is exposed to sudden and large shifts which may affect markets globally. So, understanding the factors influencing gold price volatility is important in both economic and financial terms. The gold price cannot be controlled, but it can be estimated and forecasted to develop future decisions accordingly. Forecasting the gold price became a hot topic since the collapse of the Bretton Woods System of fixed exchange rates in 1971-1973 and the implementation of the floating exchange rate regime, as the president of United States Nixon stopped the convertibility of USD into gold. Since then, several models were introduced to explain the gold price movements and predict their future values.

In recent years, the global financial crisis which affected the entire economy has experienced high levels of uncertainty and volatility in stock markets, which led to severe consequences that they were even compared to those of the Great Depression 1930. In this sense, investors began to search for alternative ways to protect their assets against ongoing market declines by adding up gold to an investment portfolio for diversification purposes. This yellow metal became an investment target for each investor which presents a source of saving and refugee in periods of crisis. Consequently, the gold price increased rapidly amidst this crisis and reached approximately 1,800 $ per ounce by the end of 2011. Then, which factors account for the gold price fluctuations?

A widely accepted hypothesis considers that variations in gold demand and supply may influence gold prices. Besides, inflation is expected to have an impact on gold prices. Since gold is denominated in dollar, taking advantage of any decrease or increase in the gold price depends absolutely on the situation of the dollar, thereby the exchange rate of the dollar against other currencies influences the gold price. As per speculation, the use of gold contracts as financial papers is considered to have a significant impact on the dynamics of gold prices. Moreover, rising interest rates may have a great effect on gold prices. Furthermore, energy prices are strongly linked to gold prices suggesting that oil prices are likely to have an impact on gold prices. As well, stocks appear to have a strong connection with metals, therefore, stocks may influence the price of gold.

In this context, this paper investigates whether the volatility of the gold price is permanent or not? It explores then the short-run relation between the gold price and each of the following variables: inflation, speculation, Chinese yuan per dollar, Japanese yen per dollar, dollar per euro, interest rate, oil price, and stock price. Afterwards, it develops a dynamic OLS model where the following variables: gold demand, gold supply, inflation, USD/SDR exchange rate, speculation, interest rate, oil price, and stock price are employed and associated in a long-run relationship. These factors together enable the model to perform well and yield a strong forecasting power.

The paper is organized as follows. Section 2 reviews the literature on gold price variation models. Section 3 presents the statistical characteristics of the gold price series, investigates the efficiency of the gold market, and models the gold price volatility. Section 4 analyses the fundamental factors of the gold price. Section 5 tests for the short-run relation using the granger causality test, followed in section 6 by a model for gold price equilibrium in the long-run. The seventh and last section concludes. All the tests are performed using EViews.

2. Overview of Empirical Studies on Gold Prices

Studies concerning gold prices and the factors influencing their variations have been reviewed by many researchers in the last decades, and it remains one of the hot topics in the global economic and financial studies. Researches on gold price determinants can be classified according to three main approaches.

The first approach deals with modeling gold price variation in terms of historical prices to predict future prices. Abdullah (2012), constructed ARIMA model to forecast gold bullion coin prices from 2002 to 2007, and the results showed that ARIMA (2, 1, 2) is the suitable model to be used. Khan (2013), developed an ARIMA forecasting model for gold price over the period 2003 to 2012, and the results suggested that ARIMA (0,1,1) is the appropriate model to be used. As well, Davis, Dedu, and Bonye (2014), built ARIMA model to forecast gold prices covering the period from 2003 to 2012, and they found that the best model is ARIMA (7,1,10). Guha and Bandyopadhyay (2016), forecasted the price of gold using ARIMA model in India from 2003 to 2014, and the results showed that ARIMA (1, 1, 1) is chosen to predict future values of gold. Yet, this technique is used in the short-run only. Tripathy (2017), forecasted the gold price of India using ARIMA model from 1990 to 2015, and the results suggested that ARIMA (0,1,1) is the most suitable model to be used.

The second approach is concerned with modeling gold price movements in terms of variation in main macroeconomic variables, classified as bivariate and multivariate analysis. Šimáková (2011), analyzed the relationship between gold and oil prices from 1970 to 2010, where causal links between gold and oil price levels were identified using granger causality test and a long-term relationship between oil and gold is revealed using Johansen co-integration test, but for examining the short-term fluctuation in co-integrated time series EC model, CPI and GMI (gold mining index) are incorporated, and VEC model is confirmed. Apergis (2014), examined the predictive ability of gold prices for the Australian dollar exchange rate with respect to the U.S. dollar exchange rate. Using an EC model spanning from 2000 to 2012, the results showed the existence of co-integration between the AU dollar/U.S. dollar exchange rate where the coefficient on gold prices is correctly signed and statistically significant. Cai, Cheung, and Wong (2001), studied the macroeconomic announcements on gold prices from 1994 to 1997. Using fractionally integrated GARCH (FIGARCH) model and flexible Fourier form (FFF) regression they found that employment reports, GDP, CPI, and personal income have significant effects on the gold market's return volatility. They also noted that the gold market price volatility exhibits long memory properties. Levin and Wright (2006), developed a theoretical framework to examine the determinants of gold price in the short-run and in the long-run from 1976 to 2005. Using co-integration regression techniques, they found a long-term relationship between the gold price and the U.S. price level. However, concerning short-run relationships, there was a statistically significant positive relationship between gold price movements and changes in U.S. inflation, U.S. inflation volatility, and credit risk and found a statistically significant negative relationship between changes in the gold price and changes in the U.S. dollar trade-weighted exchange rate and the gold lease rate.

The third approach focuses on modeling the gold price movements in terms of variation in macroeconomic and financial variables such as speculation in gold price movements and financial indexes as well. Baker and Van Tassel (1985), build a model able to forecast the gold price using regression analysis from 1973 to 1984, the results showed that changes in the gold price can be explained by changes in commodity prices, U.S. prices, dollar value, and future inflation rate. Moreover, speculative bubbles were significant with positive coefficients, supporting the hypothesis that the gold price was pushed above its trend by speculation. Lawrence (2003), investigated the relationship between gold and financial variables from 1975 to 2001 using VAR model. The results showed no statistically significant correlation between returns on gold and changes in macroeconomic variables as GDP, inflation and interest rates where changes in macroeconomic variables have a much stronger impact on other commodities than they do on gold. Tully and Lucey (2007), investigated the macroeconomic influences on the gold market from 1983 to 2003. Using VAR analysis, the results show that FTSE cash, dollar, pound and U.S. interest rates, UK consumer price index influences the gold price whether cash or futures, where the U.S. dollar is the main.

In this study, a gold price model is constructed where physical, macroeconomic, and financial factors influence the gold price. In this new model, the gold price is determined by eight explanatory variables. These variables are gold demand and supply, dollar exchange rate, inflation, open interest, interest rate, oil price, and the stock price.

3. Gold Price Statistical Characteristics and Volatility

The gold market is composed of a physical gold market (commodity) in which gold bullions and coins are sold and bought and a paper gold market (currency or monetary asset), which entails trading in claims to physical stock instead of stock themselves.

The "London OTC Market", the "U.S. Futures Market" (COMEX) and the "Shanghai Gold Exchange" (SGE) are the three primary gold trading hubs. These markets account for over 90% of the trading volume in the world, accompanied by smaller secondary markets worldwide. These secondary markets include Dubai, India, Japan,

Singapore, and Hong Kong. Notably, world gold prices are moving together nowadays, as there is no longer place for arbitrage.
Figure 1 shows the monthly variations of gold price where two significant jumps in gold prices are observed. The first jump was in early January 1980, when gold prices reached $630 per ounce and dropped dramatically in the same year due to high inflation, high oil prices, the intervention of Soviet Union in Afghanistan, and the impact of Iranian revolution which increases the demand for this precious metal. The second jump in gold prices started in 2009 following the worst financial crisis since the Great Depression. It continued to rise continuously as the highest price of gold in the second jump reached approximately $1800 per ounce by the end of 2011. After that, it declined gradually and remained slightly fluctuating to the present.

Figure 1*:* Monthly Variations of Gold Price from January 1979 to January 2019.
Source: Author calculations based on data collected from World Gold Council (WGC)

3.1 Descriptive statistics

The descriptive statistics of the gold series (in Log form) from January 2002 to June 2019 provided in table A.1 in the appendix, exhibit non-Gaussian characteristics with negative skewness (-0.706275) which may lead to negative findings. Besides, the value of kurtosis is less than three (2.107577), demonstrating higher investment risk. Moreover, the series is not normally distributed according to Jarque-Bera test results, since the calculated probability is less than 5% (0.000005).

3.2 The Gold Market Efficiency

The efficiency of financial markets is one of the most important areas of research and interest in finance. Although market efficiency can be considered from different perspectives, the finance literature has concentrated mainly on "informational efficiency". This study considers gold as a financial asset and explores its price from the Efficient Market Hypothesis (EMH) viewpoint.

In particular, this part examines the gold market efficiency regarding information contained in successive price changes in the gold series. Various statistical tests can be performed to identify whether the gold price is efficient or not. In this context, this paper tests for weak-form market efficiency by adopting the most common and famous method "Random Walk model" which has emerged in the beginning by Jules Regnault, (1863) then investigated and tested by Louis Bachelier, (1964). The Random Walk tests for stationarity in the time series data are as follows. The "Augmented Dickey-Fuller test" (ADF) and "Phillips-Perron test" (PP) used to detect the presence of a unit root which follows a null hypothesis stating that data series contains a unit root "H0: $Y = 0$". Likewise, the KPSS test is complementary to ADF and PP tests, however, it adopts a null hypothesis of a stationary process.

Moreover, the existence of calendar anomalies plays a significant role on the market efficiency basis. If seasonal patterns are identified, the likelihood of abnormal returns through market timing strategies would probably occur. Indeed, there have been a few data anomalies uncovered that call into question whether gold prices do incorporate all historical data. The weekend and January effects have been widely investigated for stock markets, but commodity markets have not received much attention in this regard.

3.2.1 The Weekend Effect

This part is an attempt to investigate the weekend effect on gold prices, in which years of 2008 and 2019 are particularly selected. The weekend effect is the finding that gold prices tend to fall on Mondays and rise on Fridays, a result that seems to contradict the weak form of EMH. Figures 2 and 3 below illustrate that traditional weekend effect rarely exists in the gold market so that Friday does not show the highest price and Monday does not show the lowest price all the time.

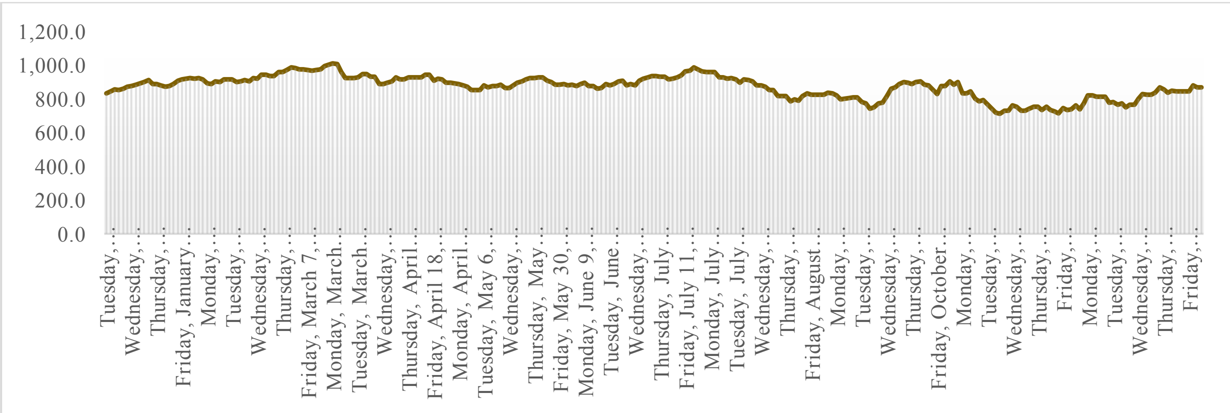


Figure 2: Daily Variations of Gold Prices (2008).
Source: Author calculations based on data collected from WGC

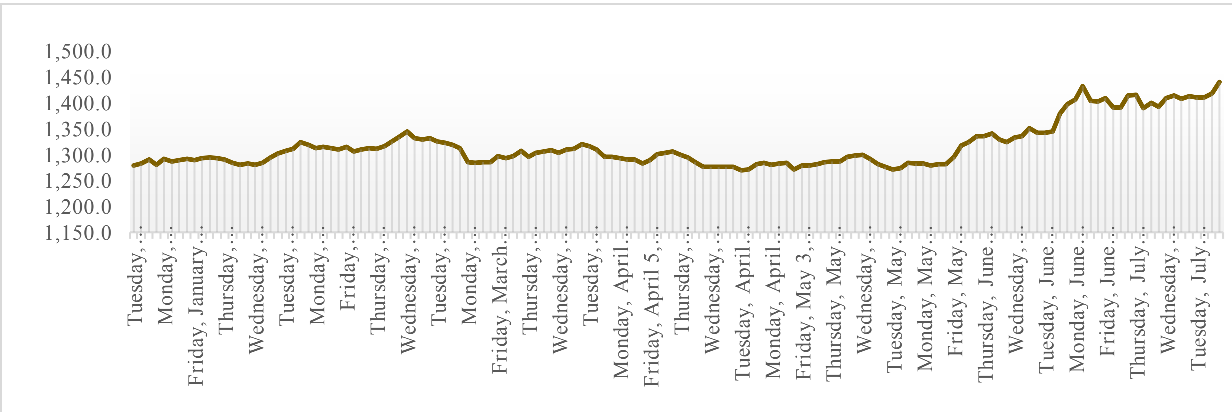


Figure 3: Daily Variations of Gold Prices from January 2019 to June 2019.
Source: Author calculations based on data collected from WGC

3.2.2 The January Effect

One of the biggest challenges facing the EMH has been the discovery of the so-called January effect. The January effect is the finding that gold prices in January are relatively high compared to other months of the year. Figure 4 below shows an extremely weak presence of January effect on gold prices from 2002 to 2019.

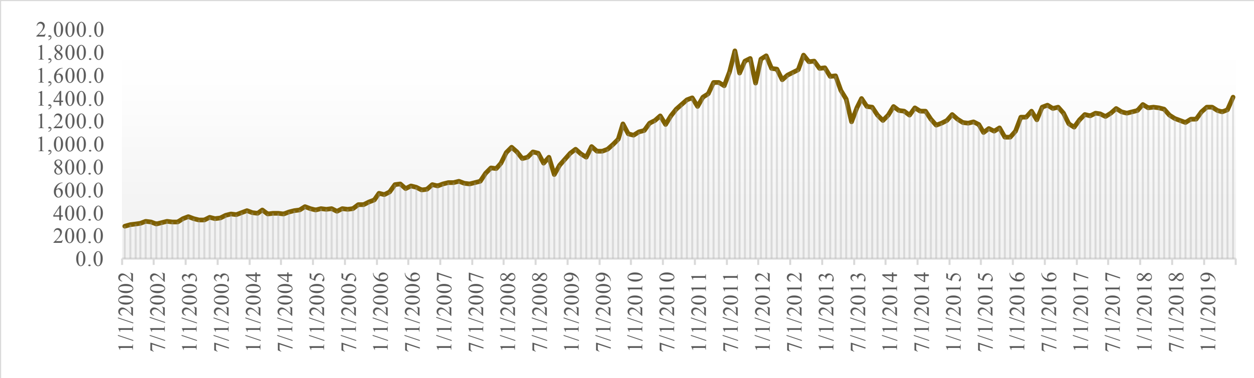


Figure 4: Monthly Variations of Gold Prices from January 2002 to January 2019.

Source: Author calculations based on data collected from WGC

3.3 Volatility Measure and Formulation

A highly volatile market appears to change significantly over a relatively short period. In reality, volatility is related to risk and exists due to uncertainty in the future. The difference between market prices and the economic fundamentals validates the rational valuation of assets. The standard deviation of the annualized returns is considered a very useful tool to measure volatility. Thus, the volatility measure of the gold price series mainly depends on the returns of the data *($R_t = \log p_t - \log p_{t-1}$)*.

Bollerslev (1986), first proposed the GARCH (Generalized Autoregressive Conditional Heteroscedasticity) model, which has become popular due to its explanatory power in forecasting volatility of returns. This model is used to check if the variance of returns is stationary and whether price levels return to the mean value. It examines an equation specification for the mean of the return series in logarithms (equation 1) and an equation for the conditional variance of the returns (equation 2):

$$R_t = \log p_t - \log p_{t-1} = c + \varepsilon_t \quad (1)$$

$$\sigma^2_t = \omega + \alpha\, \varepsilon^2_{t-1} + \beta\, \sigma^2_{t-1} \quad (2)$$

Where $\varepsilon_t \sim N(0, \sigma^2_t)$ and $\sigma^2_t = E(\varepsilon^2_t)$.

From a financial perspective, this specification can be further explained once the agent trader forecasts the time frame of variance by creating a weighted average of a long-term average (the constant), the predicted variance from the previous period (the ARCH term: α), and the information concerning the volatility reported in the preceding period (the GARCH term: β). If the return on asset is excessively high in an upward or downward direction, the trader eventually raises the variance forecast for the upcoming period.

3.4 Estimation Results

3.4.1 Test Results

The ADF, PP, and KPSS tests show that at level, there is a unit root in the gold price in log form. ADF, PP, and KPSS test results shown in table 1 and 2 suggest that taking in differences, the gold price series become stationary. In other words, the series is integrated of order 1 (I (1)).

The tests are re-conducted on a weekly and daily basis, and same results are obtained as presented in tables A.2, A.3, A.4, A.5 in the Appendix. Consequently, the gold price series data whether monthly weekly or daily are integrated of order 1 (I (1)), thus tend to be efficient in their weak form.

Table 1: ADF and PP test results for monthly gold price series in log, from January 2002 to June 2019

			Log (p)	
			T-Statistic	***Probability***
Augmented Dickey-Fuller test statistic	At level	None	2.046946	0.9905**
		Trend & intercept	-1.399284	0.8587**
		Intercept	-2.126279	0.2347**
Phillips- Perron test statistic	At level	None	2.365697	0.9958**
		Trend & intercept	-1.244372	0.8980**
		Intercept	-2.275774	0.1809**
Augmented Dickey-Fuller test statistic	First difference	None	-15.72447	0.0000*
		Trend & intercept	-16.25756	0.0000*
		Intercept	-16.07991	0.0000*
Phillips- Perron test statistic	First difference	None	-15.72925	0.0000*
		Trend & intercept	-16.43795	0.0000*
		Intercept	-16.16896	0.0000*

*Source: Calculated by the author using EViews, data collected from WGC. ** Probability >0.05 then Null Hypothesis is accepted. * Probability < 0.05 then Null Hypothesis is rejected.*

Table 2: KPSS test results for monthly gold price series in log, from January 2002 to June 2019

			Log (p)
			T-Statistic
At level	Trend & intercept	KPSS test statistic	0.426523**
	Intercept	KPSS test statistic	1.484051**
First difference	Trend & intercept	KPSS test statistic	0.077490*
	Intercept	KPSS test statistic	0.490464*

*Source: Calculated by the author using EViews data collected from WGC. ** Probability >0.05 then Null Hypothesis is accepted. * Probability < 0.05 then Null Hypothesis is rejected.*

After confirming the stationary of the gold price series, this study continues toward conducting the GARCH model. The test results as reported in table A.6 in the Appendix shows that equation (3) below represents GARCH (1,1) model estimations for equation (2). Notably, the value in parentheses denotes the coefficient probabilities.

$$\boldsymbol{\sigma^2_t = 0.000421 + 0.158134\,\varepsilon^2_{t-1} + 0.681695\,\sigma^2_{t-1}} \quad (3)$$

$$\textit{(0.1899)} \quad \textit{(0.0489)} \quad \textit{(0.0002)}$$

3.4.2 Results Analysis

According to the probability values in equation (3), the ARCH and GARCH coefficients of α and β are significant at 5% and 1% respectively. The sum of ARCH and GARCH ($\alpha + \beta$) is 0.158134 + 0.681695 = 0.839829, which means that volatility shocks are quite persistent, and therefore the gold price is volatile.

4. Factors Influencing Gold Price

This section explores the driving factors influencing gold price including gold demand, gold supply, dollar exchange rate, inflation, speculation, interest rate, oil and stock prices.

4.1 The Gold Demand

In many geographic zones and sectors, the demand for this rare and valuable metal is obtained. China and India, with their increasing economic power, are at the top of gold consumption countries. The strong culture and religious importance are one of the components of gold demand in East Asia, India and the Middle East, rather than its direct relation to world economic drifts (Šimáková, 2011).

The amount of gold is now purchased from a much-diversified array of buyers and investors as the gold market booms around the globe. According to the World Gold Council, the major source of gold demand is gold jewelry. Recently it has declined, however, it still contributes to approximately 50% of total demand. This is followed by investment demand, with demand for gold rising by almost 235% over the past three decades, due to its unique characteristics as an asset class, which played a central role in protecting and enhancing the performance of the investment portfolio. As well, central banks in emerging markets have raised their official purchases of gold, especially after the financial crisis in 2008, which shows additional important source of annual gold demand nowadays, prompted by its role in protecting against economic shocks. Further, gold can be used in technology as it contributes to innovations in electronics, industrial and dental production.

Figure 5 depicts the monthly changes in the gold price and gold demand from January 2002 to January 2019. Generally, there is a positive relationship between the gold price and gold demand. Yet, an inverse relation is obtained in the global financial crisis. When the crisis exploded in 2007-2008, the banks ended up with a serious. liquidity problem. However, much of their assets were employed in long-term investments. For this reason, they tried hard to find a temporary solution: borrow gold and sell them directly in the market to secure the need for dollar liquidity. Therefore, the demand for gold has increased, whereas gold price has decreased in contrast to what investors anticipated due to temporary sale of gold.

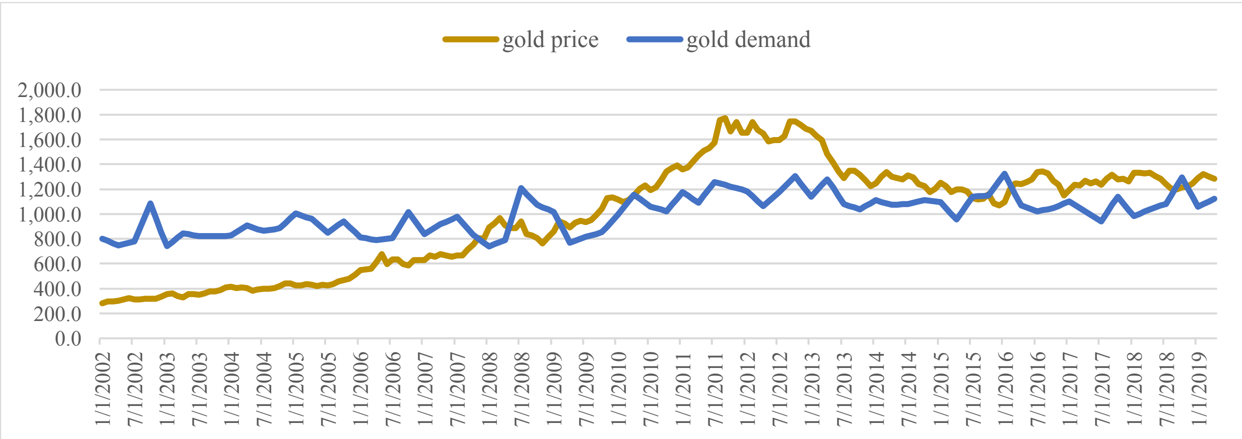


Figure 5: Relation Between Gold Price and Gold Demand.

Source: Author Calculation, based on data collected from WGC

4.2 The Gold Supply

The largest source of gold supply stems from mine production according to the world gold council. Yet, annual demand requests more gold than it has recently been extracted, and this gap is filled by recycling gold. Since gold is seen as indestructible metal, almost all the gold mines are reachable in one way or another and can be accessed for recycling. Hence, "**recycling**" is another source of gold supply that responds most quickly to the gold price and economic crisis. The bulk of recycled gold approximately 90% stems from jewelry, while the remaining is from gold extracted via technology.

Central banks' gold reserves are one of the world's leading sources of gold supply. As reported by the world gold council in March 2019, the United States compared to other countries, holds the highest amount of gold reserves in its central bank. Other major countries that possess gold bank reserves on an individual basis are Germany, France, and Italy nearly 3000 tones, equivalent to that of the International Monetary Fund.

4.3 Relation Between Gold Price and Inflation

Since gold acts as a hedge against inflation, there is a positive relationship between the gold price and inflation. However, a negative relation is obtained in the middle of the global financial crisis 2007-2009. During recession, the demand for consumption as well as investments in stocks drops, thereby a persistent fall in the consumer price index takes place, which leads to a decline in the intrinsic value of asset prices indicating that the economy is experiencing deflation. On the other hand, the gold price increases since investors shift toward a secure alternative which is gold.

4.4 The Impact of Dollar Exchange Rate

Gold is priced in U.S. dollars as well as contracts. A decline in the dollar value against other currencies can be interpreted as gold price increase and vice versa. Thereby, the strong dollar maintains the actual value of gold and keeps the price of gold under control. That is to say, gold can protect investors with dollar holdings against exchange rate risk (Baur & McDermott, 2010).
The dollar's value is important for two main aspects. Firstly, dollar-denominated assets present an attractive investment for investors and fluctuations in the dollar's value constitute a major part of the opportunity cost of gold holding. Secondly, if gold prices are stable in foreign currency, the increase in dollar value will lead to a decline in the dollar gold price. Consequently, if the price of gold is settled in dollars, then it's expected to have an inverse relationship with the value of the dollar (Baker & Van Tassel, 1985).

4.5 Speculation Factor

Speculation on future levels of gold holdings is considered a critical factor as well. In the end of Bretton Woods agreements, futures markets for financial instruments have emerged. Speculative activities in gold futures contracts have been increasing recently as interest in gold as an investment asset keeps growing. Throughout time, the total number of outstanding contracts referred to "open interest" has increased as well as the number of traders. These gold contracts considered as financial papers determine the flow of money into the futures market and the dynamics of gold prices. The higher the number of open interest, the higher the volume of trading in the futures market, and thus more speculation. Indeed, large purchases of gold futures contracts by speculators have created additional demand for gold, driving up the gold price for future delivery.

4.6 Relation Between Gold and Interest Rates

Since rising interest rates make bonds and other fixed-income investments more attractive, and increases the opportunity cost of holding gold which causes portfolio shifting, weakness in gold should follow. As well, an increase in interest rates leads to an increase in the dollar value pushing the gold price downwards. Thereby, one would expect interest rates to have an impact on gold prices.

4.7 Relation Between Gold and Oil Prices

In the global economy, it's apparent that market interconnectivity patterns exist also in the commodity sector, particularly gold and oil. Gold as the most commonly traded precious metal and oil as the most exchanged raw material plays a central role in forming the economy. Historically, the relation between gold and oil started when the Middle East producers requested gold in return for crude oil. Back in 1933, it was the first oil concession in Saudi Arabia that could only be sold in return for gold. Later, gold and oil markets have undergone enormous developments following several historical events, and a major relationship between both commodities ceased to be verified only at the payment level. Gold, oil and other commodities are primarily denominated in U.S. dollars nowadays (Šimáková, 2011).

4.8 Relation Between Gold and Stock Prices

Another key point is that gold performance is mostly compared with stocks, although these asset classes are essentially different. Some consider gold as a store of value that has no growth, while stocks are considered a return on the value on the other side. In times of economic stability and growth, both bonds and stocks generally perform much better, however, gold is viewed as the asset to be held during uncertainty and crisis periods. In general, there is a positive relation between gold and stock prices. However, the stock price decreased sharply during the global financial crisis 2007-2009, while the gold price increase. This is mainly due to investors' desire to shift toward gold which represents a safe haven for them.

5. The Short-Run Relationship: Granger Causality Test

5.1 Methodology

A well-recognized approach used to test statistically whether one variable leads another or vice versa is known as "Granger Causality Testing". Granger causality test is a bi-directional test, first identified by Granger (1969), which entails utilizing F-statistics to test whether the current variable "y" can be explained by the past values of "y" and whether adding lagged values of variable "x" can provide better explanations.

$$\boldsymbol{X_j = c_1 + \sum \alpha_j X_{t-1} + \sum \beta_J .\ Y_{t-1} + u_t} \qquad \textbf{(4)}$$

Where, j = 1 to (p). According to Granger's point of view, variable "x" is a cause of variable "y" if "x" is suitable to forecast "y" while taking into consideration only the past values of "y". In this sense, "x" helps to improve the precision of prediction of "y". Otherwise, "y" does not Granger cause "x". The granger causality test examines the null hypothesis of "Ho: no granger causality of one variable on the other".
Another key point is that granger causality tests are highly sensitive to lag length selection and to methods used to deal with non-stationarity of the time series. Thus, granger causality is performed after applying the stationarity test and determining the lag length of the selected variables.

5.2 Variables for Granger Causality

The variables for testing the granger causality are as follow:

- **Monthly Consumer price index** as a proxy for inflation collected from OECD from January 2002 to April 2019, totaling 205 observations.
- **Weekly Open interest** as a proxy for speculation on gold contracts collected from CFTC and worked on calculating their monthly average from January 2002 to April 2019, totaling 205 observations.
- **Monthly Brent spot oil price** collected from EIA from January 2002 to April 2019, totaling 205 observations.
- **Monthly Chinese Yuan to one U.S. dollar exchange** rate collected from FRED from January 2002 to April 2019, totaling 205 observations.
- **Monthly Japanese Yen to one U.S. dollar exchange rate** collected from FRED from January 2002 to April 2019, totaling 205 observations.
- **Monthly U.S. Dollar to One Euro exchange rate** collected from FRED from January 2002 to April 2019, totaling 205 observations.
- **Monthly U.S. treasury bills interest rate** collected from IMF from January 2002 to April 2019, totaling 205 observations.
- **Monthly NYSE index** collected from Yahoo finance from January 2002 to April 2019, totaling 205 observations.

5.3 Test Results

5.3.1 Stationary Test Results

The first step is to examine whether individual series are stationary. The stationarity test results according to Augmented Dickey-Fuller (ADF), and Phillips Peron (PP) are reported in tables 3 and 4. The findings indicate that all variables are stationary at first difference, I (1). This study considers the series is integrated of order 1, to proceed with the Granger causality test.

Table 3: Results of ADF Test

	Calculated ADF in levels		Calculated ADF in first differences	
Variables	T-statistic	Probability	T-statistic	Probability
CPI	-0.704172	0.4107	-8.440051	0.0000*
Log open	1.264625	0.9476	-8.362851	0.0000*
Yuan-Dollar	-1.432143	0.1416	-7.531339	0.0000*
Yen-Dollar	-0.796346	0.3700	-11.49112	0.0000*
Dollar-Euro	0.130441	0.7226	-10.52942	0.0000*
T-Bills	-1.143882	0.2298	-4.648406	0.0000*
Log oil	0.449935	0.8106	-10.82450	0.0000*
Log NYSE	1.199127	0.9409	-12.41550	0.0000*

*Source: Author calculations using EViews. *Shows the statistical significance at the 1% level of significance*

Table 4: Results of PP Test

	Calculated PP in levels		Calculated PP in first differences	
Variables	T-statistic	Probability	T-statistic	Probability
CPI	-1.279732	0.1847	-8.719069	0.0000*
Log open	1.007558	0.9173	-16.00550	0.0000*
Yuan-Dollar	-1.642956	0.0947	-7.559368	0.0000*
Yen-Dollar	-0.771550	0.3810	-11.57232	0.0000*
Dollar-Euro	0.140825	0.7258	-10.51835	0.0000*
T-Bills	-0.890066	0.3295	-7.674354	0.0000*
Log oil	0.603908	0.8461	-10.71795	0.0000*
Log NYSE	0.994075	0.9154	-12.56417	0.0000*

*Source: Author calculations using EViews. *Shows the statistical significance at the 1% level of significance*

5.3.2 Causality Test Results

The lag length that minimizes the Akaike information criterion is considered for each equation. The Granger causality test results reported in table 5 indicate that CPI, open interest, yuan dollar, dollar per euro, oil price, NYSE, and treasury bills does not granger cause the gold price. On the other hand, results indicate that changes in gold price does granger cause changes in the open interest and changes in Japanese Yen per dollar does granger cause changes in gold price in the short-run.

Table 5: Granger Causality Test Results

Null Hypothesis:	*Obs*	*Lags*	*F-Statistic*	*Prob.*	*Null hypothesis*
D(CPI) does not Granger Cause D(logGold)	205	2	0.38731	0.6794	Accepted
D(logGold) does not Granger Cause D(CPI)			0.23710	0.7891	Accepted
D(logOpen) does not Granger Cause D(logGold)	205	2	0.18234	0.8335	Accepted
D(logGold) does not Granger Cause D(logOpen)			**3.48544**	**0.0325***	**Rejected**
D(Yuan-dollar) does not Granger Cause D(logGold)	205	2	0.20999	0.8180	Accepted
D(logGold) does not Granger Cause D(Yuan-dollar)			0.74293	0.4770	Accepted
D(Yen-dollar) does not Granger Cause D(logGold)	205	2	**0.59389**	**0.0293***	**Rejected**
D(logGold) does not Granger Cause D(Yen-dollar)			0.44973	0.6384	Accepted
D(dollar-euro) does not Granger Cause D(logGold)	205	2	0.31687	0.7288	Accepted

D(logGold) does not Granger Cause D(dollar-euro)			0.01284	0.9872	Accepted
D(logOil) does not Granger Cause D(logGold)	205	2	1.11345	0.3305	Accepted
D(logGold) does not Granger Cause D(logOil)			1.74844	0.1767	Accepted
D(logNYSE) does not Granger Cause D(logGold)	205	2	1.17817	0.3100	Accepted
D(logGold) does not Granger Cause D(logNYSE)			1.82420	0.1640	Accepted
D(TBILLS) does not Granger Cause D(logGold)	205	2	0.93165	0.3956	Accepted
D(logGold) does not Granger Cause D(TBILLS)			0.73956	0.4786	Accepted

*Source: Author calculations using EViews. * Probability < 0.05 then Null Hypothesis is rejected.*

5.4 Results Analysis

The test results indicate that the volatility of the gold price generates speculation in gold futures markets. When gold is cheap to be sold in the future and when the price of gold is expected to be high, the demand for gold increases accordingly. In other words, the impact of future price on spot price is moderated by the variations in gold demand and gold supply moderates. Therefore, the short-term impact of speculation in the gold futures market is reflected by the variations in gold demand and gold supply.

6. Gold Price Equilibrium Model

This section examines the long-run relationship between the gold price and the fundamentals factors chosen theoretically.

6.1 Model Explanation

The gold equilibrium model represents the relation between the gold price as a dependent variable and a set of independent variables: gold demand, gold supply, inflation, exchange rate, speculation, interest rate, oil price, and stock price. After selecting these variables, the model of gold price determination is represented in the following equation:

$$\boldsymbol{Gold_t = b_0 + b_1 Demand_t + b_2 Supply_t + b_3 Inflation_t + b_4 Exchange_t + b_5 Speculation_t + b_6\, TBills + b_7\, Oil_t + b_8 NYSE_t + U_t \ldots} \quad \textbf{(5)}$$

Where U_t is the noise disturbance term at time t. Gold is the world gold price, in millions of dollars. Demand is the world gold demand. Supply is the world gold supply. Inflation is measured by the consumer price index. The exchange rate is the dollar value in terms of SDR. Speculation is the total open interest. TBills is the U.S. treasury bill rate. Oil is the Brent oil spot price, in millions of barrels. NYSE is the New York stock exchange composite index.

The microeconomic theory indicates that an increase in gold demand rises the gold price, while an increase in gold supply reduces it. Thus, the regression coefficient associated with the demand is expected to be positive, whereas the coefficient associated with the supply to be negative.

Besides, a negative relationship between USD/SDR exchange rate and gold prices is expected. Since gold is priced in dollars then appreciation in the dollar value against other currencies everything being equal makes gold more expensive, causes a decrease in the gold demand as well as gold prices. Another way of thinking is that an increase of the USD/SDR exchange rate value increases the gold price, thereby increasing the gold production by producers. Consequently, the gold price decreases in response to a drop in production.

Moreover, the sign of the inflation coefficient is expected to be positive as gold presents a hedge against inflation. This means that investors prefer to purchase gold to protect the decline in their assets value as the overall prices increase, and thus gold prices increase too.

Additionally, the sign of the speculation coefficient is expected to be positive. Indeed, high gold price volatility implies profit opportunities, and future contracts become important financial assets for the speculator. Therefore, an increase in speculation denotes an increase in future demand on gold contracts and hence in future gold prices, which creates pressure on the spot gold market to raise the spot gold price.

One would expect a negative relationship between interest rates and gold prices in two ways. Rising interest rates cause the opportunity cost of holding gold to increase and thus portfolio shifting, driving the gold price downwards. The other way, an increase in interest rates leads to an increase in the dollar value which causes the gold price to fall.

Furthermore, the oil coefficient sign is expected to be positive. Energy prices are strongly linked to gold prices, when the price U.S. dollar drops, the value of assets dominated in U.S. dollars increases, same as gold and oil prices.

As per the NYSE index, the coefficient sign is expected to be positive or negative. Typically, when the value of the U.S. dollar decline, gold price and stock price increase due to a deep connection between stocks and metals, which indicates a positive relation. However, stocks witness a decline in prices while investors shift to gold as a safe haven in times of crisis and economic shocks, which implies a negative relation.

Above all, it is important to note that political and historical events are omitted from the model as they are indirectly included in the demand for gold. Normally, any financial or economic shock contributes to an increase in gold demand, thereby increasing the gold price.

6.2 Definition of Variables

Gold price: is the price at which gold is being traded on the gold market.
Gold demand: is the global amount of gold purchased at a given price. It includes jewelry consumption, technology fabrication, investments, and net purchases by central banks.
Gold supply: is the global amount of gold offered for sale at a given price. It includes the total of mine production, net producer hedging, and gold recycling.
Inflation: is measured by the consumer price index.
Dollar Exchange rate: is the exchange rate value of the dollar against other currencies. In this study, the USD/SDR exchange rate is employed as a proxy for the exchange rate since it maintains a higher efficiency in estimating the model.
Gold speculation: is the act of buying or selling (short selling) gold depending on the expectation of price movement. In this study, the open interest on COMEX is used as a proxy for speculation on gold contracts by referring to Commitment of Traders (CoT) report.
Interest rate: is measured by the monthly treasury bill rate.
Oil price: is the spot price of a barrel of crude oil benchmark. In this study, Brent spot price (dollar per barrel) is used, which represents a pricing benchmark for two-thirds of crude contracts globally and considered as the most commonly used indicator of oil.
New York Stock Exchange Index (NYSE): The NYSE Composite Index is an index that measures the performance of all stocks listed on the New York Stock Exchange.

6.3 Data Sources

Table 6 represents the variables included in the model and the source of data. This study collected all variables from the sources and worked on calculating their monthly average accordingly. The data used in this part cover the period from January 2002 to April 2019. Note that, all variables are in log form except for the dollar exchange rate, treasury bills and CPI.

Table 6: Source of Data

Variable	***Source***
Gold price	World Gold Council (WGC)
Gold demand	World Gold Council (WGC)
Gold supply	World Gold Council (WGC)
Consumer price index	Organization for Economic Co-operation and Development (OECD)
Dollar exchange rate	International Monetary Fund (IMF)
Open interest	Commodity Futures Trading Commission (CFTC)
Treasury bills	Federal Reserve Economic Data (FRED)
Oil price	U.S. Energy Information Administration (U.S. EIA)
NYSE index	Yahoo Finance

Source: Prepared by the author.

6.4 Econometric Methodology

The methodology of this study is mainly based on the estimation of the Dynamic Ordinary Least Square (DOLS) method developed by Saikonnen (1991) and Stock and Watson (1993), preceded by Johansen co-integration test (1988).

Engle and Granger (1987) introduced the concept of co-integration to address the problem of determining the "long-run equilibrium" relationships in economics. A long-term relationship, from a statistical point of view, suggests that variables move together and thus correcting the short-term disturbances from the long-term pattern.

Afterwards, this paper proceeds to construct a DOLS model, which seeks to obtain better forecasting results using a set of explanatory variables. That is to say, the endogeneity of any of the regressors will no longer have any asymptotic impact on the estimates while employing the dynamic OLS testing, and thus improves the robustness of the model.

However, it is necessary to conduct a unit root test on each variable to find the order of integration. If all variables are integrated of order one, we can test for co-integration and then estimate the DOLS.

6.5 Test Results

6.5.1 Stationarity Test Results

The stationarity test results according to ADF and PP tests as reported in tables A.7 and A.8 in the Appendix indicates that all variables at level show a unit root, and confirm that all variables are integrated of order one, I (1).

6.5.2 Co-integration Test Results

Since all variables in the model are integrated of order one I (1), the co-integration test is then applicable. Johansen test is carried out with the appropriate number of lags to eliminate serial correlation. According to Schwarz information criterion (SC), and Hannan-Quinn information criterion (HQIC), two lags are found to be the most parsimonious lag length for the selected variables. Consequently, co-integration test is performed including 2 lags with intercept and linear deterministic trend. The Johansen co-integration test depends on the Maximum Eigenvalue of the stochastic matrix and the likelihood ratio test, in turn, depends on the Trace of the stochastic matrix.

Table A.9 in the Appendix displays the results of the two Johansen tests Maximum Eigenvalue and Trace Test Likelihood co-integration tests. The Trace Test indicates 3 co-integrating equations as the null hypothesis of r =

3 is rejected, meaning that there are 3 long-run equilibrium relationships between the variables. Whereas, the Maximum Eigenvalue test indicates 2 co-integrating equations as the null hypothesis of r = 2 is rejected, meaning that there is 2 long-run equilibrium relationship between the variables.

6.5.3 Dynamic OLS Model Estimation

After confirming a long-run relationship between variables using co-integration tests, the DOLS method is used to estimate the long-run elasticity of this model. This method is more accurate as it eliminates the endogeneity problem between the dependent and independent variables by taking the leads and lags of the first differenced regressors. Besides, white heteroscedastic standard errors are used so that bias is reduced and approximated t-statistic performs much better. Notably, the R-squared is 95.96%, which means that the DOLS model fits well with the observed data, and the independent variables can explain about 96% of the gold price change.

Table 7: Dynamic OLS Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LDEMAND	0.532590	0.116287	4.579943	0.0000*
LSUPPLY	0.416728	0.155733	2.675907	0.0082*
CPI	-0.054134	0.008671	-6.243386	0.0000*
SDR	2.227701	0.492222	4.525801	0.0000*
LOPEN	0.686564	0.060327	11.38075	0.0000*
LOIL	0.543405	0.040659	13.36508	0.0000*
LNYSE	0.102972	0.064594	1.594134	0.1127
TBILLS	-0.051361	0.009381	-5.474997	0.0000*
C	-13.11912	0.574880	-22.82060	0.0000

*Source: Author calculations using EViews. *Shows the statistical significance at the 1% level of significance*

The model estimations using DOLS method:

$$\mathbf{LGOLD = 0.53*LDEMAND + 0.42*LSUPPLY - 0.05*CPI + 2.23*SDR + 0.69*LOPEN + 0.54*LOIL + 0.1*LNYSE - 0.05\ TBILLS - 13.12} \quad \mathbf{(6)}$$

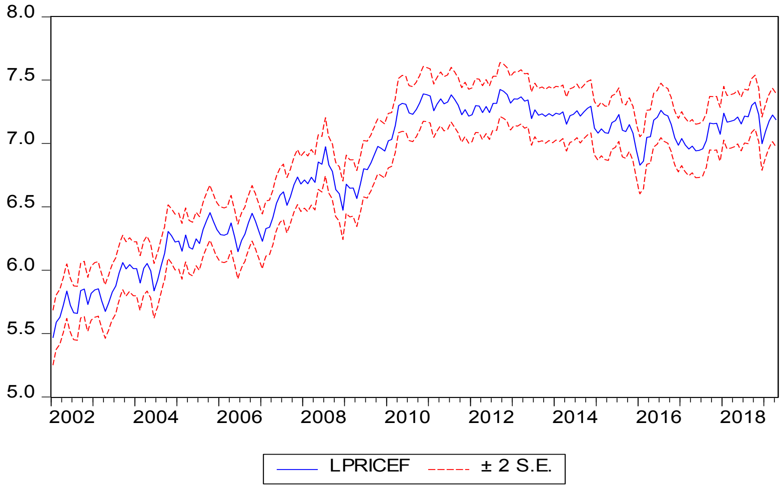
6.5.4 Residual Diagnostics

The majority of the studies do not consider testing the residuals when conducting the Dynamic OLS model. Yet, this study applies the normality test since it is considered a necessary condition for forecasting used to determine whether residuals are normally distributed under the null hypothesis of "Ho: residuals are normally distributed". If this assumption is satisfied, residuals then follow a normal distribution.

The results of the normality test show that the probability of the Jarque-Bera test is 0.484971 (more than 5%), thus the null hypothesis is rejected and the residuals are normally distributed. After checking the normality test, the model can be used for forecasting.

6.5.5 Dynamic Forecasting

Using the DOLS estimation equation, the study proceeds to forecast the gold price. As shown in figure 6 the estimated model lays between 2 standard deviations. On the other hand, the gap between the actual price and forecasted price represented by the Root Mean Squared Error = 0.12 is quite small. Thus, the predictive power of our regression model is satisfactory.



Forecast: LPRICEF	
Actual: LPRICE	
Forecast sample: 2002M01 2019M04	
Included observations: 208	
Root Mean Squared Error	0.117275
Mean Absolute Error	0.094731
Mean Abs. Percent Error	1.411810
Theil Inequality Coefficient	0.008626
Bias Proportion	0.000107
Variance Proportion	0.000011
Covariance Proportion	0.999882
Theil U2 Coefficient	3.011882
Symmetric MAPE	1.411294

Figure 6: Dynamic Forecasting.
Source: Author calculation using EViews

6.6 Results Analysis

The findings show that gold demand, gold supply, inflation, exchange rate, open interest, interest rate, and oil price are significant for gold price determination. The model shows that the dollar exchange rate is the main factor influencing changes in the gold price in the long-run with the highest coefficient (2.22).

As expected, an increase by 1% in the gold demand increases the gold price by 0.53%. Besides, an increase by 1% in the open interest contracts increases the gold price by 0.7%, indicating that more participants are entering the market involving additional buying. Moreover, results prove that oil and gold prices are positively related, thereby an increase by 1% in the oil price increases the gold price by 0.54%. Furthermore, an increase by 1% in the interest rate decreases the gold price by 0.05%.

Unfortunately, some signs contradict theoretical assumptions. Unexpectedly, an increase of 1% in CPI decreases the gold price by 0.05%. Indeed, this situation is observed during a recession or financial crisis when strong deflationary forces hit the economy pushing investors to a safe alternative that is gold. Unexpectedly, an increase in USD/SDR exchange rate which means appreciation in the dollar value against major currencies by 1% implies an increase of the gold price by 2.22%. This means that when the dollar value increase, investors tend to purchase gold for investment purposes, and thus the gold demand as well as the gold price increase, and this can be explained by the positive relation between the open interest and gold price as a speculation effect. Unexpectedly, an increase of 1% in gold supply increases the gold price by 0.42%. This means that the gold supply is following the gold demand with the gold price, and the latter is directed by other factors than the gold supply.

Regarding the gold price and stock impact, coefficients are minimal and not significant. Yet, the sign is negative as expected, meaning that a decline in the dollar value makes gold and stocks move in the same direction, opposite to the dollar direction.

7. Conclusion

Several incidents have exposed gold price to sudden shifts, prompting us to investigate the factors affecting the gold price either upwards or downwards. Accordingly, this study attempts to develop a model able to forecast the gold price. In particular, it examines whether gold price volatility is permanent and then explores the factors influencing changes in the gold price.

The bi-direction Granger causality test results for monthly time series data proved that changes in gold price does granger cause changes in the open interest and changes in Japanese Yen per dollar does granger cause changes in gold price in the short-run. Thus, we conclude that changes in open interest caused by speculation are moderated by changes in gold demand and supply which impact the gold price.

This study takes into consideration the joint impact of economic and financial factors on the gold price and constructs a gold price determination model. The findings of DOLS model showed that the gold price, gold demand, gold supply, inflation, USD/SDR exchange rate, open interest on gold contracts, interest rate, and oil price are associated in a long-run relationship and that dollar exchange rate is the main factor influencing the changes in the gold price in the long-run.

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Appendix

Table A.1: Descriptive Statistics of the monthly gold series considered in log from January 2002 to June 2019.

	Log(P)
Mean	6.783882
Median	7.042394
Maximum	7.503014
Minimum	5.642970
Std. Dev.	0.528559
Skewness	-0.706275
Kurtosis	2.107577
Jarque-Bera	24.42751
Probability	0.000005
Observations	210

Source: Author Calculation using EViews based on data collected from WGC.

Table A.2: ADF and PP test results for weekly gold price series in log from 1-1-2002 to 16-7-2019.

				Log (p)
			T-Statistic	***Probability***
Augmented Dickey-Fuller test statistic	At level	None	1.993145	0.9894**
		Trend & intercept	-1.498025	0.8299**
		Intercept	-2.075096	0.2550**
Phillips- Perron test statistic	At level	None	2.372652	0.9961**
		Trend & intercept	-1.302490	0.8865**
		Intercept	-2.236071	0.1937**
Augmented Dickey-Fuller test statistic	First difference	None	-31.01284	0.0000*
		Trend & intercept	-31.21171	0.0000*
		Intercept	-31.15379	0.0000*
Phillips- Perron test statistic	First difference	None	-31.24811	0.0000*
		Trend & intercept	-31.86392	0.0000*
		Intercept	-31.61646	0.0000*

*Source: Author Calculation using EViews based on data collected from WGC. ** Probability >0.05 then Null Hypothesis is accepted. * Probability < 0.05 then Null Hypothesis is rejected.*

Table A.3: KPSS test results for weekly gold price series in log from 1-1-2002 to 16-7-2019.

			Log (p)
			T-Statistic
At level	Trend & intercept	KPSS test statistic	0.856009**
	Intercept	KPSS test statistic	3.019760**
First difference	Trend & intercept	KPSS test statistic	0.072681*

	Intercept	KPSS test statistic	0.454332*

*Source: Author Calculation using EViews based on data collected from WGC. ** Probability >0.05 then Null Hypothesis is accepted. * Probability < 0.05 then Null Hypothesis is rejected.*

Table A4: ADF and PP test results for daily gold price series in log from 1-1-2002 to 19-7-2019.

			Log (p)	
			T-Statistic	***Probability***
Augmented Dickey-Fuller test statistic	At level	None	2.066130	0.9912**
		Trend & intercept	-1.462943	0.8421**
		Intercept	-2.101967	0.2440**
Phillips- Perron test statistic	At level	None	2.061710	0.9911**
		Trend & intercept	-1.461436	0.8426**
		Intercept	-2.102838	0.2437**
Augmented Dickey-Fuller test statistic	First difference	None	-67.29361	0.0001*
		Trend & intercept	-67.38703	0.0000*
		Intercept	-67.35895	0.0001*
Phillips- Perron test statistic	First difference	None	-67.29274	0.0001*
		Trend & intercept	-67.38645	0.0000*
		Intercept	-67.35828	0.0001*

*Source: Author Calculation using EViews based on data collected from WGC. ** Probability >0.05 then Null Hypothesis is accepted. * Probability < 0.05 then Null Hypothesis is rejected.*

Table A.5: KPSS test results for daily gold price series in log from 1-1-2002 to 19-7-2019.

			Log (p)
			T-Statistic
At level	Trend & intercept	KPSS test statistic	1.939591**
	Intercept	KPSS test statistic	6.872727**
First difference	Trend & intercept	KPSS test statistic	0.051337*
	Intercept	KPSS test statistic	0.347653*

*Source: Author Calculation using EViews based on data collected from WGC. ** Probability >0.05 then Null Hypothesis is accepted. * Probability < 0.05 then Null Hypothesis is rejected.*

Table A.6: Estimation of GARCH Model.

Dependent Variable: LGP-LOG(GP(-1))
Method: ML ARCH - Normal distribution (BFGS / Marquardt steps)
Sample (adjusted): 2002M02 2019M06
Included observations: 209 after adjustments
Convergence achieved after 17 iterations
Coefficient covariance computed using outer product of gradients
Presample variance: backcast (parameter = 0.7)

GARCH = C(1) + C(2)*RESID(-1)^2 + C(3)*GARCH(-1)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Variance Equation				
C	0.000421	0.000322	1.310918	0.1899
RESID(-1)^2	0.158134	0.080277	1.969865	0.0489
GARCH(-1)	0.681695	0.181872	3.748209	0.0002

R-squared	-0.023710	Mean dependent var	0.007692
Adjusted R-squared	-0.018812	S.D. dependent var	0.050075
S.E. of regression	0.050544	Akaike info criterion	-3.162562
Sum squared resid	0.533935	Schwarz criterion	-3.114586
Log likelihood	333.4877	Hannan-Quinn criter.	-3.143165
Durbin-Watson stat	2.165418		

Source: Author Calculation using EViews based on data collected from WGC.

Table A.7: Results of ADF Test.

	Calculated ADF in levels		Calculated ADF in first differences	
Variables	T-statistic	Probability	T-statistic	Probability
Log gold	2.548553	0.9975	-12.24357	0.0000*
Log demand	0.637209	0.8531	-5.725711	0.0000*
Log supply	1.100507	0.9294	-5.315183	0.0000*
CPI	-0.704172	0.4107	-8.440051	0.0000*
SDR	-0.686740	0.4185	-11.24409	0.0000*
Log open	1.264625	0.9476	-8.362851	0.0000*
T-Bills	-1.143882	0.2298	-4.648406	0.0000*
Log oil	0.449935	0.8106	-10.82450	0.0000*
Log NYSE	1.199127	0.9409	-12.41550	0.0000*

*Source: Author calculations using EViews. *Shows the statistical significance at the 1% level of significance*

Table A.8: Results of PP Test. *Source*: Author calculations using EViews.

	Calculated PP in levels		Calculated PP in first differences	
Variables	T-statistic	Probability	T-statistic	Probability
Log gold	2.270725	0.9946	-12.30086	0.0000*
Log demand	0.578668	0.8406	-6.919393	0.0000*
Log supply	0.595535	0.8443	-5.239194	0.0000*
CPI	-1.279732	0.1847	-8.719069	0.0000*
SDR	-0.638312	0.4398	-11.30151	0.0000*
Log open	1.007558	0.9173	-16.00550	0.0000*
T-Bills	-0.890066	0.3295	-7.674354	0.0000*
Log oil	0.603908	0.8461	-10.71795	0.0000*
Log NYSE	0.994075	0.9154	-12.56417	0.0000*

*Source: Author calculations using EViews. *Shows the statistical significance at the 1% level of significance*

Table A.9: Co-integration Test Results. *Source*: Author calculations using EViews

No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.**
Hypothesized		**Trace**	**0.05**	
None *	0.304778	268.3723	197.3709	0.0000
At most 1 *	0.255189	193.8499	159.5297	0.0002
At most 2 *	0.183690	133.4517	125.6154	0.0152
At most 3	0.140258	91.84478	95.75366	0.0901
At most 4	0.121086	60.86463	69.81889	0.2098
At most 5	0.088925	34.40558	47.85613	0.4798
At most 6	0.039775	15.31392	29.79707	0.7594
At most 7	0.030429	6.993382	15.49471	0.5784
Hypothesized		**Max-Eigen**	**0.05**	
None *	0.304778	74.52237	58.43354	0.0007
At most 1 *	0.255189	60.39819	52.36261	0.0062
At most 2	0.183690	41.60696	46.23142	0.1441
At most 3	0.140258	30.98015	40.07757	0.3619
At most 4	0.121086	26.45905	33.87687	0.2935
At most 5	0.088925	19.09166	27.58434	0.4075
At most 6	0.039775	8.320535	21.13162	0.8831
At most 7	0.030429	6.334797	14.26460	0.5706

** denotes rejection of the hypothesis at the 0.05 level*

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Systems, Instruments and Regulatory Policies of American and European Capitalism

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Abstract
The beginning of the 21st century, the phenomenon of globalization, the IT revolution and the financialization of the economy have also changed the terms of the comparison among capitalist countries. At global level, the rapid expansion of the financial sector was also encouraged by an increase in innovative financial products. Regulators and supervisors have not been able to adequately identify and address the growing risks in the financial system. The beginning of the financial crisis has brought to light such weaknesses. And it is from this negative experience that the major world authorities have intervened, trying to set up plans and regulations to protect the financial system and consumers. The analysis of the framework that comes with the financial crisis of 2007-2013 is thus a starting point for this work to understand the new features of world capitalism. American and European capitalist systems seem to diverge above all on the policies and instruments for regulating the financial system. The aim of the work is to show the differences between the US and European financial and banking regulation. The former is geared towards reviving deregulation and financial innovation while the latter is more geared towards redesigning a more accentuated regulatory model with a governance of the economy that always sees the presence of a mixed welfare and market system.

Keywords: Capitalism, Shadow Banking, Deregulation, Supervision

JEL: G28, N2, F4

1. Introduction

In the years leading up to the crisis, the financial system has considerably grown in terms of size and it has become increasingly interconnected through long-lasting and complex credit intermediation chains on a global scale, causing more systemic risks. The rapid expansion of financial sector at global level, has also been facilitated by an increase of innovative financial products, often highly complex, which allowed financial institutes to increase also off-budget activities. In a world radically changed, policy makers, regulatory and supervisory authorities from all over the world have not appropriately been able to identify and deal with the increasing risks in the financial system. Many activities eluded regulation and supervision. While transactions of the most financial institutions were significantly increasing across borders and markets became increasingly integrated at international level, regulatory and supervision frameworks largely remained concentrated at national level.

The beginning of the financial crisis has brought to light such weaknesses. And what started out as *sub-prime* crisis in the United States in 2007 has rapidly become a real financial crisis at global level. The financial crisis turned into economic when, because of the lack of trust among operators, financial markets froze up, the liquidity decreased, initially causing a stall and subsequently a real contraction of the credit intended for companies and families. Following this negative experience, global authorities intervened to put into effect plans and regulations to guarantee the financial system and consumers, to avoid the threat of a new crisis comparable to that occurred in 2007.

The analysis of the scenario determined by the financial crisis of 2007-2013 represents, therefore, a necessary starting point to understand the different answers to the crisis emphasizing differences and similarities of the control systems of the financial and banking capitalism. These tough times for European economy and the incomplete monetary union determined, indeed, a divergent evolution of the two capitalism models. This paper, in fact, aims to analyse and emphasize the differences between the American and European financial and banking system and their related trends. The first, once again, aims to re-launch *deregulation* processes and financial innovation while the second is more focused to rethink about a clearer model of regulation with a *governance* that provides a combined system of *welfare* and market.

2. The crisis of the financial capitalism of 2007 and emergency actions

There is a general agreement about the root causes and trigger events that caused the crisis of 2007. The changes occurred over the last few decades, have substantially contributed to the economic and financial crisis. The financialization of the economy and the subsequent strengthened of the role of international finance certainly constitute the main cause of the crisis. In fact, the financial markets represent an extreme case of how globalization has drastically reduced, or even abolished, the economic borders, although those political and administrative and related to regulations have strictly remained national. The supporters of financial liberalization have always declared that markets of more integrated capitals would have made national financial markets more stable through an increasing international competition. The facts, instead, have shown how economic integration, without the integration of the control and supervisory systems and the coordination of public policies, have pushed governments to adopt inefficient and inappropriate national policies.

The second main cause has been the increasing of the systemic risk, due to the deregulation. The last thirty years have been characterized by a serious financial deregulation, not only in the USA, but in many parts of the world. Since the early '80, and for almost thirty years, financial systems of Western countries have experienced a constant innovation process. The traditional banking model, that is regulated by specific authorities and whose main activities essentially consist in customer deposits and granting credits, it is now upstaged by several changes of the modern finance. Modern finance is characterized, in fact, by extremely fast and powerful electronic means, international mobility of capitals, diversified and increasingly personalized financing instruments, growing risk exposure, trading focused on short-term profits, excessive use of leverage and, in the end, a less rigorous regulation on financial activities.

The processes of *deregulation*[1], have facilitated the constitution and development of a myriad of non-bank financial institutions(NBFI). Several of the innovative financing instruments have become widespread because these have been able to circumvent regulations, such as those relating to the insufficiency of banks' capital; to create off-balanced sheet vehicles and to convert (see the market of *credit default swaps*) risky assets in apparently safe ones. The abolition of the *Glass-Steagal Act*[2] and the radical changes of the *Community Reinvestment Act* in the last decade of the former century, have pushed several financial institutions to undertake

[1] In the United States the process of deregulation was first carried out under the chairmanship of Carter, influenced by Kahn and then continued in greater detail by Reagan since 1980-81 (and at the same time by the first minister Margaret Thatcher in Great Britain), enough to talk about Regan deregulation and "reaganomics".
[2] Measure introduced in 1933under the presidency of Roosevelt and later abolished in 1999.

riskier activities. Specifically, the first provision has let commercial banks to enter in the *investment banking*, while the second has created a system in which banks have been evaluated based on the numbers of loans offered to low-income, the so called *sub-prime* mortgages.

The new financing instruments, increasingly sophisticated, offer new chances to investors; the market started to open up also to non-professional of the sector through instruments tailored to the needs and risk appetite of each operator. Moreover, the improved risk management, the use of *leverage*, together with software systems increasingly intuitive and accessible to all, made the trading more attractive for small investors, stimulating professionals to behave in a more "shameless" manner. Furthermore, this more efficient distribution of the risk has reduced the cost of capital, allowing several people to obtain credit, with consequent positive and negative effects on mortgages and consumer credit. In the end, in recent decades, the IT revolution allowed to reduce transaction costs, creating a new form of "instantaneous" trading, that occurs entirely online and that allows to carry out dozen transactions in very short time, obtaining, moreover, detailed information available on any aspect related to the investment.

The intensification of the global financial crisis of 2008 and the subsequent contraction of the global economy, have caused an unprecedented reaction from authorities. Central banks around the world drastically reduced the official rates, in many cases close to zero, while governments adopted a fiscal policy to compensate for the reduction of private consume, trying to replace the reduction in consumption and private investments, with an increase in public expenditure. In addition to banks' recapitalization, other public interventions aiming to financial restructuring of banks came about, such as the purchase of high risk toxic assets, the exchange between bank activities and government securities and the offer of guarantees on bank debts. Public interventions are increased regarding depositors, to guarantee bank deposits. These interventions in USA and in Europe in autumn 2008 avoided the collapse of the system. With the contribution of risk capital and the consequent nationalization that involved both the great Anglo-American banks and the large European groups, more radical interventions have been carried out. Having regard to imbalances of financial structure, the nationalisation was the best-case scenario. The several public interventions have always qualified as temporary, without intervening on corporate and management decisions.

The establishment of a new regulatory framework and regulation of financial markets, able to prevent or reduce the effect of financial crisis, have been put into effect in 2010 through a several reform proposals inspired by cooperation and coordination of principles at international level. One of the main reaction to crisis has been the attempt to relaunch the international cooperation of economic policies. The effort was based on G20 which, in the summit of Pittsburgh, proclaimed itself as the « premier forum for international economic cooperation». Among the works of G20, perhaps the one that deserves more attention, is the financial re-regulation, defined as the main instrument to control the global economy since the start of the crisis. The re-regulation concerns numerous aspects, such as minimum capital ratios for banks, organization of derivatives markets, remuneration schemes of the work of financial intermediaries. Based on indications from the Pittsburgh and London summits, both in Europe and in the United States, measures have been approved to redesign the system of rules and controls on intermediaries and financial markets and to review the structure of supervisory authorities

3. Financial Regulation in the Unites States

The reform of financial and banking system pursued with determination, by Obama Administration and approved by the Parliament of the United States in 2010, has radically innovated the *Federal Reserve Act* of 1913 and this has represented the most ambitious and systematic attempt of regulation of financial markets. The *"Dodd-Frank Wall Street Reform and Consumer Protection Act"* (or Dodd-Frank Act, from the names of the presidents of the two financial commissions of Senate and Chamber) is a Federal Law of United States approved in July 2010 which provides a significant reform of financial regulation impacting on several aspects of the national financial services industry. The regulation has introduced radical changes in rules, controls, Supervisory Authorities because it seeks to act on critical issues revealed by the recent financial crisis. The protection of consumers and investors, the improvement of the transparency and accountability of the financial system, the regulation of systemically important financial institutions (avoiding moral hazard phenomena) are among the purposes of legislative intervention [3].

The legislation text is complex both in structure and in its implications, as shown by the several regulated aspects. The main provisions provided by Dodd-Frank Act can be summarized in the following five aspects:

- Macroprudential supervision;
- Micro prudential supervision;
- Reform of the financial regulation;
- Crisis management;
- Consumer protection.

Macro-prudential supervision

Macro-prudential or systemic supervision, unlike the micro prudential one, is focused on the stability of the individual bank intermediaries, and it has as a scope of application the entire financial industry and particularly the banking sector. It aims to consider risks for the financial stability developed because of the exposition of the financial institutions to common macroeconomic risk factors. The Dodd Frank has introduced a change in the regulation of systemically important financial institutions, indicating as a regulatory objective the mitigation of systemic risk and the maintenance of the stability of the financial system. The monitoring of systemic risks is a necessary activity to prevent another financial crisis and it requires a control on systemically important financial institutions and on risks of instability related to their activity. In the Title I ("*Financial Stability*") is provided the establishment of two agencies named *Financial Stability Oversight Council* and *Office of Financial Research*. The *Financial Stability Oversight Council* (FSOC) is responsible for identifying the risks for financial stability that can came about from banking and non-bank financial institutions, promoting market discipline avoiding government intervention in case of bankruptcy, responding to the emerging threats for the stability of the American financial system. Among the powers conferred to *Financial Stability Oversight Council*, there is the possibility to entrust the *Board of Governors of Federal Reserve,* to impose stricter prudential standards compared to the ordinary ones for banks and non-bank financial institutions (*section* 121) and regarding capital requirements, leverage limits, liquidity standards, commissioning plans (*resolution*) and risk concentration limits. The new regulations on systemic risk monitoring include also "*non-bank financial company*". One of the power conferred to the *Council* is to submit to the supervision of the *Board of Governors* the non-bank financial institutions if these are considered a threat to the stability of the system (*section* 113). In this way, even insurance companies or mutual funds, for instance, can be supervised by the *Board of Governors*. Regarding the macroprudential supervision, the *Office of Financial Research* (OFR), is then established, with the task of co-operating with the FSOC to find and analyse data. The OFR provides the administrative, technical and budget support to the *Council* and to the agencies represented by it improving the quality, transparency and accessibility to financial data.

The micro prudential supervision

Unlike the macro prudential supervision, the micro prudential one aims to guarantee a cautious banking management. It includes, instruments that preventively facilitate the stability of individual intermediaries, such as, the authorization to carry out banking activities, if restrictions on the minimum amount of risk capital and the reputability requirements of the promoters and management are satisfied; the restrictions to the range of activities that can be carried out by the bank or to the markets on which it can operate, and so on. In this sense the authority of *Federal Reserve* towards major financial corporation increased, confirming a change of direction that has led the major US *investment banks* to become commercial banks and pass under the direct responsibility of the Fed. Concerning the issue *too big to fail*, which refers to those banks and financial institutions considered up to now "too big and important for the system as a whole to leave them fail", the choice was to take as a model the *Federal Deposit Insurance Corporation* (FDIC), namely the Bank Deposit Guarantee Fund that directly manages bankruptcies of small local banks, often finding a buyer for their assets and counters and trying to minimize the risk of collapse of individual local entities. Hence the choice to allow *regulators* to impose

[3] The objective of Dodd Frank Act is indicated in the premise of the legislative text: "*…to promote the financial stability of the United States by improving accountability and transparency in the financial system, to end ''too big to fail'', to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes*".

restrictions to large financial institutions in difficulty and if necessary, also manage a "regulated and controlled liquidation" to avoid the collapse of the system. In the insurance sector, in the end, *Financial Insurance Office* (FIO) has been established with the task to control insurance sector. Its action extends to all classes of insurance other than health insurance, long term care insurance, harvest insurance, and it is regulated by the *Federal Crop Insurance Act*. The FIO collaborates with FSOC.

The new financial regulation

The Dodd-Frank Act has significantly determined changes also in financing processes of financial institutions. Particularly, regarding the new derivatives regulations. The derivatives market has been, up to now, especially in the segment "*over the counter*", absolutely deregulated. In this regard**,** the Title VII ("*Wall Street Transparency and Accountability*") intends to implement the obligation, to make the derivatives market traded over the counter more secure and transparent, through the standardization of contracts, centralisation of trade and the double supervision of *Security Exchange Commission (*SEC) and *Commodity Futures Trading Commission* (CFTC). Traders operating in derivatives market shall be registered with SEC and CFTC and they might have capital requirements. Furthermore, the new regulation imposes to the financial groups which sell risky and complex financial products to bear part of the risk, such as in the case of derivatives guaranteed by property mortgage, although this could reduce their profit margin. Alongside this, *hedge funds* and *private equity* funds with headquarters in the United States shall be registered with the competent authorities. In practice on the derivative products, a federal market control is established for the first time as well as the obligation of a guarantee on products by a third party with the aim of favouring trades carried out increasingly on public financial markets rather than through private transactions. The *proprietary trading*[4] of banks, that is the trading of own funds, is regulated for the first time based on the former chairman of Fed Paul Volcker proposal. Banks will be able to make trading of equity to invest in *hedge funds* and *private equity* funds, but only at 3% of the tangible equity of the banks except for American government securities and obligations issued by entities that have federal guarantees. This aspect of the reform is based on the concept not to favour a high-risk *trading* for banks that has federal guarantee on deposits they manage, but also to avoid, as it often has happened lately, heavy losses related to risky financial investments. New regulations are provided for financial institutions involved in securitisation transactions. It is provided the obligation to withhold a portion of the credit risk of the assets sold in the transaction. Regarding the rating agencies the Dodd-Frank Act has increased the internal control, imposing a greater transparency about procedures and methods to calculate the rating, conferring the right to act against agencies and, in the end, strengthening the powers of the SEC. In the *corporate governance* and remuneration mechanisms sectors, the new regulations aim to strengthen the transparency and to rebalance the corporate governance model. The SEC has been authorized to adopt a mechanism that allows shareholders to propose their own candidates for the Board of Directors of the Company, for avoiding that the top management is the same one that can decide regarding their salaries and bonuses. Instead, regarding the remunerations, it has been introduced the "*say-on-pay*" that is, the approval by shareholders about the payments of the executive bodies of the company.

Crisis management

Title II created the *Orderly Liquidation Authority* (OLA), a provision to apply under the guidance of the *Federal Deposit Insurance Corporation*, the body responsible for deposit insurance and to intervene in case of institutes in difficulty which are considered important for the system. The intervention shall occur in the form of "*Single point of entry*" (Spe), in other words at the level of the parent company, the holding company, letting subsidiaries to continue to operate. The *Federal Deposit Insurance Corporation* shall replace the board and central management, and it may transfer assets and create a "bridging company", devalue the debt and equity, as well as tap into the special fund of Treasury (the *Orderly Liquidation Fund*), which is capitalized with a tax calculated on the risk of individual banks, to ensure necessary resources for the new institution, if there is no market financing. Any public funds shall be guaranteed by the activity of the financial institution. Basically, the

[4] The English term proprietary trading means trading activity carried out with commercial stocks, obligations, currencies, raw materials, derivatives and other financial instruments that the bank does for itself and not on behalf of its clients. The goal of the bank is to make a profit for itself.

American Authority acquired more powers than in the past to sort out possible crises. In respect of reorganization or liquidation, it can choose at its discretion the assets and liabilities to transfer, as well as deciding a different treatment of similar creditors. In the end, the Minister of the Treasury can activate, as part of the ordinary liquidation procedure, extraordinary authorizations to the Fed for the credit extension.

Consumer Protection

The Title X established a new authority to protect savers, the *Bureau of Consumer Financial Protection* (BCFP), that is an independent authority within *Federal Reserve*. It is part of the widest project of the reform of the American financial system to carry out *financial education* tasks and protect the consumer. The correct treatment of consumers is considered relevant for the long-term stability of the financial system. The BCFP, whose main tasks are to regulate products and financial services of the consumer, to ensure uniform standards, to provide detailed and reliable information to consumer about products and protect these from eluded additional costs, abuses and improper practices. The powers of supervision and control of the Bureau also refer to the possibility to request a report and to make periodical controls as well as the coordination with the other supervisory authorities (section 1024).

The summary of these key points of the reform of the American financial regulation emphasizes the importance regarding the carried-out changes about the financial intermediaries' activities, in the structure of the supervision authorities, in the system of protection of shareholders and of investor protection. The Dodd-Frank aimed to restart markets and guarantee the future sustainability. In this regard important results have been obtained: the emergence of the *Consumer Financial Protection Bureau*, standards for granting loans, that before crisis were very flexible, have been hardened; the minimum of capital that banks are obliged to maintain to amortise any unexpected losses, has been revised and new liquidation protocols have been established to be followed in the event of another Lehman Brothers collapse; moreover the derivatives market has been completely changed, as a consequence of the fact that the unappropriated use of it by the investment banks was the main cause of the crisis of 2008. On10 December 2013, in the end, the enactment of Dodd-Frank reached a milestone with the implementation of the so called "Volcker rule". However, Dodd Frank Act represents a first level regulation whereby its ability to guarantee the stability of financial system and prevent possible crises will depend on the contents of preliminary studies and the regulations applied by Authorities, albeit with some delays.

4. The reform of the European financial architecture

The crisis has highlighted, at European level, limits and weaknesses of European institutional framework for banking and financial supervision based on an organization of national competences and liabilities in view of financial and banking markets increasingly dynamic and integrated. Confronted to the numerous failures of regulation, supervision and management of the crisis, Europe had to necessary rethink, or even create from scratch, a regulation system able to prevent the recurrence of a systemic collapse. In this respect the group of experts coordinated and chaired by Jaques de Laroisière in their report published in March 2009 have clearly identified the causes which prevented to give common answers aimed at controlling imbalanced that produced the crisis. The Report showed the remarkable gap between the borders of financial markets, which have become European, and the controls that still are segmented on a national basis. Several European directives, even recently issued, have shown several gaps that allowed several member states to arbitrary decisions. The Report underlined:

- Lack of an appropriate macroprudential supervision and early warning systems. European supervision gave extreme importance to individual enterprises and too little to macroprudential supervision.
- Decentralized supervision and voluntary cooperation of national authority;
- Lack of a uniform appraisal systems and uniform prudential treatment of *cross-border* groups.

Based on the conclusions of the De Larosière Report, in September 2010, financial ministers of UE gave the green light for the financial supervision reform. Specifically, some bodies have been established:

- the *European Systemic Risk Board* (ESRB) headed by the governor of BCE with the task to supervise the risks originating from the macroeconomic developments and of the financial system as a whole to preserve the financial stability (macro –prudential supervision).
- the *European System of Financial Supervisors* (ESFS) including three new European supervisory authorities on the banking, insurance and securities markets as well as national supervisors. This new supervisory body therefore provides for the "networking" of national financial supervisory authorities which should cooperate with the European Supervisory Authorities to safeguard the solidity of individual financial firms and to protect users of financial services.

The new structure, based on the interaction of ESRB and ESFS, should help to guarantee a greater financial stability and above all it should show an aptitude to prevent future systemic risks. However, for explanatory purposes, in order to facilitate the comparison with the United States, the planned interventions will be summarized in five macro-areas:
- Macro-prudential supervision;
- Micro-prudential supervision;
- Financial Regulation Reform;
- Crisis management;
- Consumer Protection.

Macroprudential supervision

The gaps caused by the crisis were not only related to regulations. In some countries these gaps have been observed even in supervision activities carried out by authorities responsible for prudential supervision. It became clear, therefore, that during the period before the crisis, the supervisory methods were permissive and being used as a competition instruments in several European and international financial centres. Light-touch approaches to supervision (so called light-touch or hands-off), in fact, have incentivized the constitution or the operation of intermediaries in financial centres that had promoted them with beneficial results, at least in short term, for the occupation, economy and public finance of the interested countries. The macroeconomic supervision has greatly been improved, thus becoming more effective. The Regulations (UE) n. 1092/2010, put into effect on 16/12/2010, regarding the macroprudential supervision of the UE financial system established the *European Systemic Risk Board* (ESRB). ESRB has the task to control any phenomena that can produce systemic instability such as the credit growth, asset price dynamics both financial and real, interconnections between institutions and markets. In case of any relevant threat to the systemic stability, ESRB can issue some warnings (*risk warning*) and some proper recommendations addressed to the member states authorities. Only in case of exceptional circumstances, ESRB can take binding decisions. ESRB collaborates with EBA to implement macroprudential supervision. The collaboration between ESRB and EBA must be particularly intense in the monitoring and evaluation of systemic risk in the financial sector; to carry out stress tests to European financial institutions and definition of supervisory instruments that can be used in an anti-cyclical way to limit the accumulation of excessive risks during the cycle expansion phases.

Micro-prudential supervision

Regarding micro prudential supervision the new supervision authority *ESFS (European System of Financial Supervision*), active since 1° January 2011, has been conceived to create a system in line with a financial market, that became European and the only one for financial services, connecting national supervisory authorities in a strong community network.

ESFS includes three new European authorities (ESA, *European Supervisory Authorities*), represented by:
- EBA (*European Banking Authority*) for banking sector;
- ESMA (*European Securities and Markets Authority*) for securities sector;
- EIOPA (*European Insurance and Occupational Pension Authority*) for the insurance sector and pension funds.

The power conferred to the new authorities are referred to (i) draw up common rules(so called single rulebook) that can be directly applied in all member states; (ii) to undertake binding decisions to resolve disputes between national supervisory authorities and to solve cases where the European Regulation is not correctly applied (iii) to coordinate national authorities in situations of crisis and taking decisions regarding individual financial

institutions in the cases expressly indicated in the Regulation (for example, if national authorities are not in compliance with their decisions); (iv) in case of emergency, banning the use of some financial products.
National Supervision Authorities continue to carry out a domestic level supervision. This means that the indications are provided by ESAs, but national supervisors are responsible for the actual implementation. Given that, ESA boards will be the expression of the representatives of the member states, it is not possible to certainly declare that their working will be efficient and that the European interest will always prevail over national interests.

The reform of financial regulation
Four specific initiatives have been taken to fill the regulatory gaps noted during the crisis, that refer to:

a) Capital requirements

The new rules, definitively published in 2011, and put into force in 2013 aimed to balance a bank capital concept and to significantly redefine the prudential treatment of some risks took by banks, such as those related to exposures to securitisations and off-balance sheet vehicles. Moreover, the method of calculation of capital requirements in respect of market risks became stricter. It will be introduced a maximum level of leverage to allow banks to limit overall debt from 2018. Furthermore, some balanced rules regarding liquidity have been provided [5]. In the end, some articulated measures, complementary to one another, aiming to make capital requirements less unstable, over time, have been established.

b) Derivatives

In order to reduce the negative effects of interconnections among intermediaries limiting the risks of contagion, an increased standardization of derivatives markets *over-the-counter* has been requested. It has been required that all transactions must be registered in trade repositories[6]. Furthermore, the obligation to inform Supervision Authorities about all transactions details carried out in derivative financial instruments has been put into force in 2014. Article 9 of Regulation EMIR (UE n. 648/2012 of 4 July 2012) provides, in fact, that all financial transactions carried out on derivative products must be registered with trade repositories certified by the European Security and markets authority (ESMA).

c) Rating Agencies

With Regulation 1060/2009 a legislative framework for credit rating agencies activities has been created to protect investors and European financial markets from the risks of unethical practices. It establishes the conditions for issuing of credit rating as well as the regulation regarding the registration and supervision of credit rating agencies. The Regulation n. 462 of 2013 enacted new and stricter rules for rating agencies activities. The rules cannot certainly avoid any risk or issue in the European market, but the stricter *governance* regulation, ownership structures, sovereign ratings, conflicts of interest and civil liability, seem to be a first and solid step towards a greater transparency of financial markets.

d) Alternative Investment Fund Managers Directive

In the end, the directive 61/2011 aimed to fill a legislative gap in the field of alternative investment funds, such as *hedge funds*. The role of *hedge funds* has been, in fact, to initiate a devastating knock on effect. The retail chain created the fall in prices and an enormous instability of markets. Therefore, the directive has defined harmonized rules applicable to all Investment Fund Managers and it has provided rules of conduct, transparency of information and capital, organisational requirements as well as requirements of control of the risk like those provided for management company of harmonized mutual funds. Successively with a further Regulation n. 231/2013, other regulations regarding derogations, general operating conditions, depositaries, leverage, transparency and supervision have been taken.

Crisis management
Crisis management is entrusted to new and different instruments progressively established by European Union. It refers to EFSM (*European Financial Stabilization Mechanism*), EFSF (*European Financial Stability Facility*) and ESM (*European Stability Mechanism*). Specifically:

a. European Financial Stabilization Mechanism

[5] Basel Committee on Banking Supervision, International Framework for liquidity risk measurement, standards and monitoring- consultative document, December 2009.
[6] Financial Stability Board, *Report on Improving OTC Derivatives Markets*, October 2010.

The EFSM, established in May 2010, is the first credit package made available for member states of European Union that are in financial difficulties because of "exceptional and not controllable circumstances" by them and which provides resources up to 60 billion of Euros. The regulation provides that the loan terms (cost, maturity, pricing and number of instalments) are established by the European Commission, which is also responsible for verifying that appropriate policy measures have been established in the beneficiary country to bring the fiscal and financial situation within the limits of normality. The Regulation also provides that the use of these funds must be accompanied by loans from International Monetary Fund (IMF). The EFSM is internal of the European Union and it is guaranteed by its balance sheet of the Union.

b. European Financial Stability Facility

The EFSF is a company with its headquarters in Luxembourg founded by 16-member states of the eurozone on 7 June 2010. It is basically a bond issuing company. Raising capital, through the distribution on international financial markets of EFSF-bond, is only used to help eurozone countries in difficulty. The aid consists in the provision of a loan to the state that requires it to preserve the financial stability of the European Monetary Union. The full extent of EFSF was established in 2010 at 440 billion of euro but it has successively been extended up to 750 billion of euro. The guarantees are provided pro rata by member states, based on the contribution shares to the capital of European Central Bank. The EFSF financing has been granted in view of the conditions that the receiving country assumes relating to the management of its economic policy.

c. European Stability Mechanism

The ESM is a real permanent institution enabled to intervene to safeguard the financial stability of the Eurozone. It is regulated by international laws (such as FMI) and, starting from 2013, it is intended to replace the previous EFSM and EFSF to which it has been accompanied for one year since July 2012. Conversely to EFSF, the States will not give any guarantees to the new body on its bond issues, but these will be actual shareholders. ESM can get into debt by issuing securities to give financial support to states in difficulty, with the capital (initially of 700 billion). The securities issued by ESM will have, moreover, repayment priorities on domestic debt securities of the financed states: consequently, the securities of this new "state-rescue" fund will be less risky per se and this not because they are covered by third-party guarantee. For this reason, the ESM issues do not involve any parallel increase of public debts of the shareholding states.

Consumer protection

The directive of 2004 known as *Markets in Financial Instruments Directive* (MIFID) is one of the main regulatory innovations. The fundamental purposes of the directive are: the protection for investors that depends on the different degree of financial experience; the integrity of markets; the strengthening of competitive mechanisms through the abolition of the obligation to concentrate trades on regulated markets; markets efficiency, also reducing the cost of services offered and improving the *governance* systems of investment firms and a better managing of conflicts of interest. The directive, subsequently amended by a new provision of 2006, is not limited to providing some information requirements for intermediaries, but it must carry out some tests regarding the nature of the investment service offered or required by the client. With a view to stimulating competition and ensuring better conditions for investors, the Directive abolishes the obligation to concentrate trading on regulated markets and introduces new forms of exchange.

In view of possible places where financial instruments can be negotiated, the obligation of *best execution* is reaffirmed[7]. In the end, within each investment firm, a function, named *compliance*, which deals with the control of the fulfilment of the obligations of correctness and transparency, has been established.

5. Comparison between Policy instruments and Institutional Arrangements

After having carefully analysed the policies and regulations put into effect by European and American authorities to deal with the financial and economic crisis it is necessary to compare the two systems, putting in evidence their analogies and differences. The modifications carried out by the two systems are very similar, and this shows that there is a broad consensus to some points: (i) the capital of banks must be strengthened and made less pro-cyclical; (ii) it is necessary to weaken the role of rating agencies regarding the regulation; (iii) the

[7] *best execution* means that the intermediary must carry out the transaction on behalf of clients at the best possible taking into account price, costs, speed, likelihood of execution and settlement, size, nature or any other consideration relevant to the execution of the order.

regulation regarding accounting policies must be diluted by the principle of *fair value*; (iv) the so called parallel banking system (*hedge* funds, *private equity* funds and so on) must be made more transparent and regulated; (v) OTC derivatives, as far as possible, mediated by *clearing house*; (vi) the remuneration of managers must be connected to long term results; (vii) more transparent procedures should be developed in terms of solving banking crises; (viii) The international cooperation must be strengthened, giving to international bodies such as Basel Committee on Banking Supervision, the *Financial Stability Board* and the International Monetary Fund, a crucial role. In both cases, then, the fragmentation of supervision authorities is considered as a weakness to correct. Obviously, in the European Case the fragmentation is due to the prevalent role played by supervision authorities of the member states, while in the States the issue came about from excessive numbers of organisms whose competences and range of action is often confused and overlapped. In the end, both reforms and changes over time proposed and implemented, give to Central banks a key role regarding supervision, considering the fundamental role that they played during the most acute phase of the crisis.

The table below offers a concise comparison of policy macro-areas of the two supervision and regulatory systems from which we can observe differences and similarities:

Table 1: Differences and similarities between the US and EU supervisory and regulatory systems

Macro-prudential supervision	A new supervision structure has been created by European and American Authorities: The *Financial Stability Oversight Council* in the United States and the *European Systemic Risk Board* in Europe. While the first includes the Central Bank, the Treasure and other main supervisory authorities, with the task to identify the risks resulting from banking and non-banking financial institutions, promoting market discipline and removing the expectation of a government intervention in case of bankruptcy with the possibility of making binding decisions, in Europe, instead, the ESRB only has tasks to monitor phenomena that are potentially capable of producing systemic instability, issuing only non-binding recommendations
Micro-prudential supervision	Micro-prudential supervision in United States is the responsibility of *Federal Reserve System*, that deals with the regulation and supervision of all SIFIs, the *Federal Deposit Insurance Corporation* of non SIFI banks and the *Federal Insurance Office* of insurance sector that takes binding decisions. In Europe the *European System of Financial Supervision* has been established and it is composed by three new authorities that must coordinate, address and shape homogenous supervision and binding rules inside the European Union but delegating their application domestic agencies.
Reform of financial regulation	The reform of the system has radically innovated the *Federal Reserve Act* of 1913. The Dodd-Frank Act has introduced radical changes in the regulations, controls and supervisory authorities. Among the regulations those referred to protection of the consumers and investors, the improvement of transparency and liability of financial system, regulation of systemically important institutions, regulation of the market "*over the counter*", centralization of trade and double

	supervision by *Security Exchange Commission* and *Commodity Futures Trading Commission*, excluding, nevertheless, the non-speculative derivatives from the regulation. The Basle regulations represent, instead, the core of the European reform aiming at **:** 1) strengthening of capital-adequacy of credit institutions and the improvement of the capital quality; 2) the introduction of "leverage ratio", ie a maximum ratio between capital and assets also in the expansive phases of the economic cycle; 3) the adoption of measures to combat pro-cyclicality, providing for capital " buffers" in the expansionary phases and anti-cyclical provisions linked to the expected losses of an entire economic cycle; 4) the reduction of liquidity risk, through "buffers" of liquid assets able to cope expected cash outflows.
Crisis management	The main innovations introduced for the management of the crisis in the United States are related to the regulations regarding liquidation of the SIFIs and in order to manage them the *Orderly Liquidation Fund* (OLF), the *Orderly Liquidation Procedure* (OLP) and the *Orderly Liquidation Authority* (OLA) have been created. All institutes being headed by *Financial Stability Oversight Council*. On the contrary, to support Member States in difficulty, the EFSF, the EFSM and finally the ESM has been created by European Union.
Consumer protection	The *Bureau of Consumer Financial Protection* has been established to protect consumers with the main task of regulating financial products and services to the consumer, including the need to ensure uniform standards for all products, to provide consumers with detailed and reliable information and protect them from hidden additional costs, abusive terms and unfair practices. In Europe, instead, the directive 2004/39, known as MIFID, deals with the protection of investors, ensuring the efficiency and integrity of markets, strengthening competitive mechanisms and improving the *governance* systems of investment companies.

Nevertheless, beyond these relevant similarities, that denote an international convergence in the reforming processes of supervision systems, it is interesting to analyse the points on which the two systems diverge:

a. First of all, the different role assigned to the Central Bank. The *Federal Reserve* has the total responsibility regarding the supervision of all financial, banking and non-banking intermediaries that, due to scopes can put the stability of the financial system at risk. The ECB, instead, is assigned only the role to "host", coordinate and preside over the so called *European Systematic Risk Board* (Esrb). This is composed, as well as by the members of the General Council of the European System of Central Banks, by a representative of the European Commission and by the presidents of the three specially established authorities because of the reform: EBA, EIOPA, ESMA. However, the ESRB, supervises only the macro-prudential supervision that aims to the stability of the entire system, but not to the micro-prudential one on individual financial intermediaries. Moreover, it can only govern with the word, issuing recommendations and opinions aimed at limiting systemic risks. In the Unites States, also it is provided the establishment of a new supervisory body, the FSOC - *Financial Service Oversight Council*, which includes the central bank, the treasure the other main supervisory authorities. However, it is led by the Secretary of the Treasury and it coordinates the whole activity of both macro and micro-prudential supervision. In Europe, there is a lack of a strong political leadership capable of mobilizing financial resources in the event of a crisis, and therefore it has clearly not been possible to assign such role to any Community body;

b. The second significant difference between the European model and the US model concerns the establishment a body to protect consumers: the Americans, in line with their cultural and ideological tradition, have provided for the *Bureau of Consumer Financial Protection* which will monitor products and processes concerning credit, savings and payment systems. In Europe only Community directives were put into effect, leaving to the Member States the real consumer protection without establishing any supranational body capable of ensuring effective coordination and control;

c. In the end, although none of the two regulatory models managed to make a definitive consolidation of the hypertrophic supervisory structures, in Europe there was no more than a closer coordination of the existing authorities. In fact, the *European System of Financial Supervision*, that includes EBA, ESMA and EIOPA, jointly with their respective domestic supervisory authorities, is nothing but a network of decentralized but integrated structures, that aims to coordinate the micro-prudential supervision in Europe. The tasks of day to day supervision have been transferred to domestic bodies, that are closer to intermediaries, while the new authorities carry out a coordination role both prudential standards and their punctual implementation. In the Unites States, instead, the supervision can be referred to six authorities, and of course to Treasure and FED: the SEC(that has lost all control over investment banks, after the disastrous results achieved), the *National Bank Supervisor* (that supervises at federal level institutions that collect deposits in several States, in order to avoid regulatory arbitrage and on the American branches of foreign banks), the *Commodity Futures Trading Commission* (which deals with derivative products and which must better coordinate with the activities of the Sec), the *Federal Deposit Insurance Corporation* (which continues to insure bank deposits) and the *Federal Housing Finance Agency* (that supervises on institutions such as Fannie Mae and Freddie Mac).

In the light of these interventions, it is too early to make considerations regarding the efficiency of the new American and European regulatory framework. There is no doubt that the financial system is more stable nowadays than before crisis, but this does not mean that we are completely safe. There is still much work to be done. The real test on the efficacy of the law and the real will of Governments to enforce it, it will come subsequently, when the memory of recession will fade away, and the economy will recover completely only in that moment we will know if the new regulation will be truly efficient. Anyway, both systems still show points of weakness and the debate on the role to be assigned to Central Bank represents evidence of this. However, it seems that the American project is more coherent comparing to the political willingness to give to the entire financial and banking system, that leading role compromised by the crisis. The European Union remains involved in vetoes that impede a real leadership at continental level.

6. Future developments and conclusive considerations

The interpretation of the crisis, as basically an issue of non-adequately regulated financial markets and therefore a failure of the market, has characterized the debate of these last years and it suggested the reforms exanimated and carried out by both parts of Atlantic. The requests to tighten up banking regulations, to limit the scope of finance, to establish more strict supervision authorities have been the areas of intervention of political initiatives to deal with the consequences of the crisis and to prevent others.

At the base of this stabilization approach there was a common theme: *financial dominance* (Brunnermeier, 2016). The presence of a non-negligible financial sector requires a comprehensive and rigorous approach. The financial dominance regime is one where, due to a strategic weakness, the financial sector can impose recapitalization costs either on central banks or on national tax authorities. In good times, the financial sector earns a risk premium; in unfavourable times, it tries to avoid incurring losses. In order to safeguard the rest of the economy, therefore, either the central bank (through direct or expansive redistributive monetary policies of the interest rate) or national authorities through direct recapitalizations have to intervene.

In this regard, the strengthening of public supervision and the progressive re-regulation of the markets, observed both in the United States and in Europe, can be referred to a tendency to establish a public order of the financial markets (Meadel, 2007) and to restrict facts of financial dominance. At this stage, in fact, it has been registered an abandonment of the traditional intermediaries' self-regulation, in favour of the strengthening of public controls and of a strict regulation, in order to facilitate an efficient *enforcement* of the regulations. All this could lead to a progressive configuration of a global "financial" order with the task to impose to the market some imperative principles, such as the respect of the free competition, the respect to an equal treatment of the participants, the transparency and the protection of the saver.

The examinations of the carried out reforms and those in progress following the crises, regarding the financial markets that have been done in the recent years, have allowed us to highlight the increasingly important role that the supervisory body has taken on both in the United States and in the continent as well as a clear tendency of regulation to set up a public order in the financial markets, which can also be applied by the same intermediaries. Regarding the architecture of the supervisory structures above described, these have largely been influenced by the diversity of institutional settings and the structure of the reference markets. In the Unites States reforms are incremental and they follow a *learning by doing* process, following the crises occurred, being negatively affected by the uniformity of supervisory architecture as well as by the double level of federal-state government and the extreme fragmentation of the market because of its largeness; in Europe, in accordance with the well-known procedure Lamfalussy (Savino, 2005) as recently amended (COM(2007)727), instead it seems to give the priority to a previous elaboration of a theoretical model and subsequently to put it into effect in practice.

In the current situation, the globalization of supervisory rules, which should follow the existing globalization of markets, becomes even more necessary, to avoid competition between systems that could degenerate into a harmful downward race, when instead we should tend to ensure a *level playing field* to market operators. If it is true that currently the architecture of supervisory system on financial markets and the definition of the rules of the same supervision remain, on both sides of the Atlantic, a field reserved respectively to the US legislator and those of the Community and of the individual member countries of the European Union, without any global unitary regime currently being able to be set up in the sector, nevertheless reveals some signs which indicate that a certain degree of coordination between the different systems can take place on the basis of the needs of the market operators themselves, of territorial political institutions, if only for the purpose of not losing competitiveness in their financial centres.

In this regard it is emblematic the issue of the recognition of the validity of the European accounting policies from United States authorities, to draft financial statements of the companies. However, these arrangements are quite rare and it certainly is not yet in sight the moment where through mutual recognition procedure, increasing the need of common *standards* established by multilateral bodies, can be mixed the rights of united states financial markets with the ones of the continental Europe. To the current *top-down* approach aimed at achieving the objective of financial stability by the several international institutions operating in the sector (the International Monetary Fund, the World Bank, the Bank for International Settlements, the Basel Committee, the *Financial Stability Forum*), through controls exercised by these global bodies, should be accompanied, in this direction, by a concerted action and an harmonization of the supervisory and regulatory standards (Napolitano, 2008). In fact, it still lacking a global regulatory system of financial markets able to adequately prevent new and probable financial and banking crises. Recently, the statements of both the new President of the United States Trump and the new Governor of the Fed Powell even suggest a reversal of the trend, a return to deregulation and a revision of the Volker Rule, with a more condescending policy towards big finance and to American banks.

Despite recent events, in a medium to long-term vision, the world we live in, has radically changed. There has been a real revolution, because of an impressive technological progress, increasingly less protectionist trade policies, drastically reduced transport costs, large migratory flows, increasingly integrated markets for goods and services with the consequent strengthening of the role of international finance. These last ones represent an extreme case of how the globalization has drastically reduced, if not even cancelled, the economic boundaries, while the political ones and those related to the regulation have remained mainly national. The recent financial and economic crisis has therefore led to think about on the rules and methods of public intervention in the economy, on the instruments of regulation of finance and on its role, promoting a new attention for the international cooperation, and all this is the objective of this work.

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Intellectual Capital, Bank Profitability, and Bank Value

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Abstract
This study plans to investigate the influence of intellectual capital on bank profitability and value and bank profitability on bank market value. Furthermore, 34 banks listed on Indonesia's capital market are taken from the population by the simple random sampling technique. Path analysis model acting as the method to evaluate the variables-related data. From the hypothesis testing, this study affirms a positive impact of intellectual capital on bank profitability and value and the similar effect of bank profitability on bank value. The implications related to the application of intellectual capital in banks are attached.

Keywords: Bank Value, Bank Capability to Create Profits, Intellectual Capital

I. INTRODUCTION

Banking is one of the industries in the capital market of Indonesia (Hartono, 2017). This industry has an outstanding contribution to the market index movement. This situation happens because some banks, i.e., PT Bank Central Asia Tbk. (BBCA), PT Bank Rakyat Indonesia (Persero) Tbk. (BBRI), PT Bank Negara Indonesia (Persero) Tbk., and PT Bank Mandiri (Persero) Tbk. (BMRI), have a significant stock market capitalization (Situmorang, 2020). As an indicator of the bank value, the stock price becomes the attention when investors want to buy or sell stocks. If they purchase shares at the right time, they will get a capital gain, and vice versa. The realized capital gain reflects the wealth of the investors (Hartono, 2017).

Therefore, it is essential to know what drives bank value in the capital market. In the study of Wijaya (2012), intellectual capital influences the bank value. The other researchers also obtain that profitability is its value determinant (Ozkan, Cakan, & Kayacan, 2016; Obala & Olweny, 2018; Septiana, 2018; Silwal & Napit, 2019). However, this evidence is unreliable, reflected by the study of Radianto (2011), Artinah & Muslih (2011), and

Septiana (2018), failing to prove the intellectual capital impact on bank value. Additionally, Ghauri (2014) and Nureny (2019) find no effect of profitability on this value.

According to some researchers, intellectual capital affects bank profitability (Zia-ul-Haq, Sabir, Arshad, Sardar, & Latif, 2014; Isanzu, 2015; Septiana, 2018; Octavio & Soesetio, 2019; Ousama, Hammami, & Abdulkarim, 2020; Uslu, 2020). Unfortunately, these findings are not consistent. For example, the study of Radić (2018) cannot prove this influence.

By mentioning the differing stimulus, this study aims to examine and analyze two influences. Firstly, the effect of intellectual capital on bank profitability and value. Secondly, the impact of profitability on bank value. The banks utilized are from the Indonesian capital market for five years, started from 2015 until 2019.

The bank is the institution counting on the intellectual capital in their business (Mavridis, 2004). According to Janosević, Dzenopoljac, & Bontis (2013), this capital consists of humans, structure, and relation (see Table one for the detail).

Table 1: The bank intellectual capital components

Human capital	Structural capital	Relational capital
1. Knowledge and skills 2. Creativity 3. Capacity 4. Capability to learn 5. Accountability 6. Devotion 7. Enthusiasm 8. Motivation level	1. Management procedures strategy 2. Planning 3. Software 4. Database 5. Organizational structure 6. Patents. 7. Trademarks.	1. Brand and reputation. 2. Relationship with depositors and borrowers. 3. Networking.

Source: Modified from Janosević et al. (2013)

Additionally, to measure intellectual capital, the value-added intellectual coefficient by mentioning Ulum (2009) is applied. This added value is from utilized equity, human, and structure (see formulas 1a, 1b, and 1c). The banks effectively empowering them will gain a competitive advantage (Ulum, 2009) to create profits, as shown by Zia-ul-Haq et al. (2014), Isanzu (2015), Septiana (2018), Octavio & Soesetio (2019), Ousama et al. (2020), Uslu (2020), and improve its value in the capital market, as displayed by Wijaya (2012). By denoting this explanation, the first and second hypotheses can be made like this.
H_1: Intellectual capital positively affects bank profitability.
H_2: Intellectual capital positively affects bank value.

In the dividend discount model, profitability becomes one of the fundamental ratios influencing the stock price. As the profitability proxy describing company earnings power, return on assets positively affects the stock price (Natarsyah, 2000). This evidence also gets confirmed in the studies exhausting the banks as the sample, such as Ozkan et al. (2016), Obala & Olweny (2018), Septiana (2018), Silwal & Napit (2019). By denoting this explanation, the third hypothesis can be made like this.
H_3: Profitability positively affects bank value.

II. RESEARCH METHOD

2.1. Variable Definition

The first variable is intellectual capital. Moreover, this variable performs as exogenous. This capital is measured by a value-added intellectual coefficient (VAIC). By denoting Ulum (2009), the formula to calculate it can be seen in the following equations:

VAIC = VACA + VAHU + STVA .... (1)

VACA or added value from capital employed is got by dividing the sum of operating profits, employee costs (EC), depreciation (D), and amortization (A) or total added value (TAV) by the total equity (see equation 1a).

$VACA = \frac{OP+EC+D+A}{Equity}$ .... (Equation 1a)

VAHU or added value from human capital is obtained by dividing TVA by employee cost (see equation 1b).

$VAHU = \frac{OP+EC+D+A}{EC}$ .... (Equation 1b)

STVA or added value from structural capital is achieved by dividing the results from subtracting employee costs from TVA by TVA (see equation 1c).

$VAHU = \frac{TVA-EC}{TVA}$ .... (Equation 1c)

The second variable is profitability. Furthermore, this variable has a position as the endogenous. By following Ghauri (2014), Zia-ul-Haq et al. (2014), Isanzu (2015), Ozkan et al. (2016), Obala & Olweny (2018), Radić (2018), Septiana (2018), Nureny (2019), Octavio & Soesetio (2019), Ousama et al. (2020), and Uslu (2020), this variable is measured by return on assets (ROA).

The third variable is the bank value. Additionally, this variable becomes endogenous. Like the firm value, the bank value can be counted by stock price (SP) by following Ghauri (2014), Hanafi (2017), and Siwal & Napit (2019). The bank stock prices are not always in the same range of value; thus, by denoting Sahabuddin dan Hadianto (2019), the logarithm natural is used. By transforming them in the logarithm natural, the residuals in equation three will be normally distributed.

2.2. Population and Samples

The banks listed on the Indonesia stock exchange from 2015 to 2019 become population in the research. According to the observation, 37 banks are consistent in this period. Hence, this number becomes the total population (TP). Moreover, the Slovin formula in equation two using 5% margin of error (me) is applied to compute the sample number (SN).

$SN = \frac{TP}{1+TP.(me)^2}$ .... (Equation 2)

By utilizing that formula, the sample number $= \frac{37}{1+37(5\%)(5\%)} = \frac{37}{1.925} = 33.87 \approx 34$. Then, 34 banks are taken by simple random sampling method, and their name is in Table 2.

Table 2: The chosen banks becoming the samples

No.	Code	The name of the bank
1.	AGRO	Bank Rakyat Indonesia Agroniaga Tbk.
2.	BABP	Bank MNC Internasional Tbk.
3.	BACA	Bank Capital Indonesia Tbk.
4.	BBCA	Bank Central Asia Tbk.
5.	BBKP	Bank Bukopin Tbk.
6.	BBMD	Bank Mestika Dharma Tbk.
7.	BBNI	Bank Negara Indonesia Tbk.
8.	BBRI	Bank Rakyat Indonesia Tbk.
9.	BBTN	Bank Tabungan Negara Tbk.
10.	BBYB	Bank Yudha Bhakti Tbk.

Table 2: The chosen banks becoming the samples

No.	Code	The name of the bank
11.	BDMN	Bank Danamon Indonesia Tbk.
12.	BEKS	Bank Pembangunan Daerah Banten Tbk.
13.	BINA	Bank Ina Perdana Tbk.
14.	BJBR	Bank Pembangunan Daerah Jawa Barat Tbk.
15.	BJTM	Bank Pembangunan Daerah Jawa Timur Tbk.
16.	BKSW	Bank QNB Indonesia Tbk.
17.	BMAS	Bank Maspion Indonesia Tbk.
18.	BMRI	Bank Mandiri (Persero) Tbk.
19.	BNBA	Bank Bumi Artha Tbk.
20.	BNGA	Bank CIMB Niaga Tbk.
21.	BNII	Bank Maybank Indonesia Tbk.
22.	BNLI	Bank Permata Tbk.
23.	BSIM	Bank Sinarmas Tbk.
24.	BSWD	Bank of India Indonesia Tbk.
25.	BTPN	Bank BTPN Tbk.
26.	BVIC	Bank Victoria Internasional Tbk.
27.	DNAR	Bank Dinar Indonesia Tbk.
28.	INPC	Bank Artha Graha Internasional Tbk.
29.	MAYA	Bank Mayapada Internasional Tbk.
30.	MCOR	Bank China Construction Bank Indonesia Tbk.
31.	MEGA	Bank Mega Tbk.
32.	NISP	Bank OCBC NISP Tbk.
33.	NOBU	Bank National Nobu Tbk.
34.	SDRA	Bank Woori Saudara Indonesia Tbk.

2.3. The method of data analysis

Based on these research intentions, a suitable method to analyze the data is the path analysis model. This model has two sub-structures, as seen in equations three and four.

$LN(SP) = \gamma_1 VAIC + \beta_1 ROA + \varepsilon_1$ .... (Equation 3)

$ROA = \gamma_2 VAIC + \varepsilon_2$ .... (Equation 4)

Furthermore, each residual in equations two and three (ε_1 and ε_2) is essential to be normally distributed. By denoting Ghozali (2016), the Kolmogorov-Smirnov is utilized to examine it.

III. RESULTS AND DISCUSSION

3.1. The test result of normality of residuals

Table 3 presents the normality test result of residuals, reflected by the asymptotic significance of Kolmogorov-Smirnov Z of 0.491 for the first model and 0.130 for the second model. Because both these values are above 5% as the significance level, each model residuals follow the normal distribution.

Table 3: The normality test result of the residual

Description	Residual of the first sub-structural model: LN(SP) = f(VAIC, ROA)	Residual of the second sub-structural model: ROA = f(VAIC)
Kolmogorov-Smirnov Z	0.833	1.168
Asymp. Sig. (2-tailed)	0.491	0.130

Source: Modified Output of IBM SPSS 19

3.2. The estimation result of the path analysis model

Figure 1 demonstrates the result of standardized path coefficients (γ_1, γ_2, β_1), including their t-statistical probability. Moreover, these probabilities are utilized to test the first, second, and third null hypotheses by comparing them with a significance level of 5%.

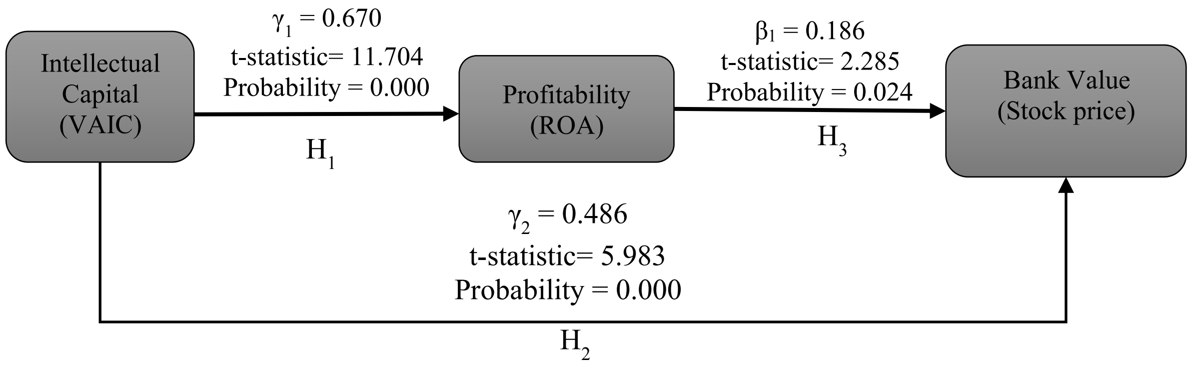

Figure 1: The estimation result of path coefficient
Source: Modified Output of IBM SPSS 19

As realized in figure one, the probability of the path coefficient of γ_1 and γ_2 is 0.000, and β_1 is 0.024. Because these values are below the significance level of 5%, the first, second, and third hypotheses are not declined. Therefore, intellectual capital positively affects bank profitability and value. Also, profitability positively influences bank market value.

3.3. Discussion

From the previous section, the data utilized backs up all alternative hypotheses in this research. By having this evidence, this research result is in line with:

a. the study result of Zia-ul-Haq et al. (2014), Isanzu (2015), Septiana (2018), Octavio & Soesetio (2019), Ousama et al. (2020), Uslu (2020) for the first hypothesis declaring a positive impact of intellectual capital on bank profitability;
b. the study result of Wijaya (2012) for the second hypothesis stating a positive effect of intellectual capital on bank value;
c. the study result of Ozkan et al. (2016), Obala & Olweny (2018), Septiana (2018), Silwal & Napit (2019) for the third hypothesis affirming a positive impact of profitability on bank value.

From this evidence, intellectual capital is the driver of profitability creation, increasing bank value. This condition shows that the banks need to effectively use the employees to work productively by giving the training and incentive for their target achievement of lending money to borrowers and seeking money from depositors. Also, the banks are expected to provide precise career planning to motivate their employee to reach their organizational position. Related to the facilitates for their customers, banks must consider investing in the technology to realize safe, easy, and secure financial transactions.

IV. CONCLUSION AND RECOMMENDATION

This study aims to prove and analyze two matters. Firstly, the impact of intellectual capital on bank profitability and value. Secondly, the effect of profitability on bank value. Thus, to attain this purpose, statistical hypothesis testing is utilized on the bank data from the Indonesian capital market between 2015 and 2019. After doing that, the result demonstrates that:

1. Intellectual capital has a positive influence on bank profitability and value.
2. Profitability has a positive effect on bank value.

Though these research results are satisfactory, revealed from the significant positive sign of the relationship, this research still has some boundaries, i.e., the country origin of banks utilized (see point a) and the total explaining variables (see point b).

a. As the first limitation, this study only utilizes the banks listed on the Indonesian capital market. It does not apply to the banks of various countries' stock exchange, for example, in Southeast Asia. Thus, the next scholars can combine them in their research.
b. As the second inadequacy, this study only applies one determinant of bank profitability and two bank value determinants. By considering this issue, the next scholars can add the other determining factors related to the bank features, for instance, loan to deposits ratio (LDR), non-performing loan (NPL), and bank efficiency ratio.

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