ISSN 2775-9237 (Online)

Asian Institute of Research

Economics and Business Quarterly Reviews

Vol. 4, No.2 June 2021

Asian Institute of Research
Connecting Scholars Worldwide

Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2 June 2021

Economics and Business Quarterly Reviews
ISSN 2775-9237 (Online)

Table of Contents i

ISSN 2775-9237 (Online)

Economics and Business Quarterly Reviews Editorial Board

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 1-9
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.340

What Leads to Intra-Industry Trade between Sri Lanka and South Asia?

Thilini Saparamadu[1], Vihangika Weerasinghe[2]

[1] Department of Business Economics, Faculty of Management Studies and Commerce, University of Sri Jayewardenepura, Sri Lanka
[2] Department of Business Economics, Faculty of Management Studies and Commerce, University of Sri Jayewardenepura, Sri Lanka

Abstract
This study ascertains the determinants of Intra-Industry Trade (IIT) with particular reference to IIT between Sri Lanka and its major trading partners in South Asia; namely; India, Pakistan and Bangladesh. The study uses secondary data published in World Development Indicators, Penn World Table from 1992 to 2017. The level of IIT is calculated by using data gathered from Comtrade Data Base. Using panel data regression, the study adopts Random Effect model to analyze the regression results. The study concludes that economies of scale measured by difference of value added in the net output of the manufacturing sector and market size measured by average gross domestic product exert a significant influence on the level of IIT in the South Asian region. Differences of per capita Gross National Income (GNI - difference in income level) and tariff rate (the proxy for trade barriers) poses a negative influence on the level of IIT. The policymakers should be concerned about the possibility to increase IIT in the South Asian region. Based on the findings of the study, the present research offers policy recommendations to promote IIT within the region.

Keywords: Country-Specific Determinants, Developing Countries, Industry-Specific Determinants, Intra-Industry Trade, Intra-Regional Trade, South Asian Region

1. Introduction

Intra-Industry Trade (IIT); the two-way exchange of goods within the same industry, is an international trade pattern which was observed among European countries in the period of post-world war II. This trade pattern could not be explained in the traditional trade theory which was based on comparative advantage. Verdoon (1960) investigated that international trade patterns that were taken place among the European nations were mainly within industries rather than between industries. Since that era, IIT became a constant pattern of trade in international trading and its share in international trade is increasing by about 4-5 percent per annum. Consequently, the IIT consists of one-fourth of the total international trading in the world economy. With cheaper and reliable communication and transportation methods, the world is more integrated than a few decades ago. It implies that it is more efficient and profitable to outsource the production to countries where factors of production prices are cheaper for the comparative advantage. This concept of product fragmentation is

considered as the determining factor of IIT level. According to empirical evidences by Hanson (1997), Yeats (2001) and Hummels and James (1993), it proves that fragmentation of a product causes to surge in intermediate products and most of the trade flows in intermediate products are in intra-industry nature among the advanced regional grouping. Hence, IIT is considered as the dominant trade pattern between countries that are having similar economic development. Accordingly, several studies that deal with IIT have been conducted by focusing only on advanced or industrial countries' contexts and empirically proved that the IIT share of total trade in developed countries is higher than the under developing countries and its increasing rate is around 5% per annum (Akram & Mahmood, 2012). But there are few studies that have focused on the level of IIT in less developed countries (Willmo, 1972).

Usually trade between developing versus developed countries has been explained with traditional trade theories, such as Heckscher-Ohlin theorem. Therefore, there is a lack of trade relations between developing and developed countries in terms of Intra-Industry Trade. But, Tarakan (1986) and Balassa (1986) argued that there is a substantial Intra-Industry Trade between developed and developing countries by their empirical studies.

All the countries in the South Asian region (perhaps except India), are in the same level of economic development. All of them are labor-intensive and importing capital-intensive products, more than 50% of the GDP is contributed by the service sector, 50% of the respective labor force of the country is employed in the agriculture sector and the manufacturing sector is recording a substantial growth. Therefore, the South Asian region can be considered as a region that satisfies the fundamental economic characteristics of the theory of Intra-Industry Trade. But the statistical evidences that intra-regional trade in the South Asian region is growing very slowly as a portion of total international exports and imports[1]. Therefore, it is pertinent to ask the question of how to increase the participation of South Asian countries to the intra region trade and what factors determine the potential for trade within the region. Some important studies have commented on this regard. Kemal et.al (2001), Mohanty (2003), Mukherji (2004), and Pitigala (2005) have examined numbers of factors that can affect the growth of intra-region trade in South Asia, and all of them primarily address the potential for developing production network in South Asia and strengthening the IIT, in order to increase both the growth of the intra-regional trade and regional economic growth.

On the other hand, according to the author's calculations, based on data from Comtrade data base, it proves that only limited categories of production have contributed significantly to increase the level of IIT between Sri Lanka and other selected South Asian countries. But there is higher potential to gain the benefit of IIT due to the country-specific and industry-specific characteristics which underpin the basic theories of Intra Industry trade and pave the path to intra-regional trade.

Thus, this study intended to identify the determinants of Intra-Industry Trade in the South Asian region; with particular reference to the IIT between Sri Lanka and its major trading partners in South Asia, namely; India, Pakistan and Bangladesh. Given the importance of IIT, the contribution of this study can be judged since, this study investigates the level of IIT and its determinants, for continuous 25 years' period and this is one of the few studies which provides the analysis on the determinants of IIT in Sri Lanka with the other three major economies in South Asian region. Additionally, if this study will investigate the factors that are contradicting to the traditional determinants of international trade and could be generalized to the developing countries' trade patterns, it may have other welfare and policy implication for the developing countries.

Moreover, the remainder of this study is organized as, firstly, Literature Review to present the theoretical and empirical background of the determinants of IIT and secondly, the methodology that employed in the study will be presented. The third section will analyze the results and discuss the findings and finally, the last section presents the conclusion and recommendation of the study.

[1] The Handbook of Statistics, United Nations Conference on Trade and Development shows that, the Intra-region exports by SAARC have just amounted to 5.6% of their total international exports while 25% in ASEAN, 53.8% in NAFTA, and more than 67% in the EU.

2. Literature Survey

Intra-Industry Trade- the simultaneous exports and imports within the same industry have been defined as the residual that proposition after deducting inter-industry trade from total trade (Grubel & Lloyed, 1975). In the 1960s, the concept of Intra-Industry Trade was introduced to the world and it provided the base to a large number of empirical and theoretical studies.

In the period of Post-World War II, the space for trade amongst nations that produce similar commodities by using similar factors of production was created. Many industrialized countries had been exercising international trade with their trading partners in a significant proportion of their total trade as within the industry import and export trade patterns. In other words, the countries which have similar capital endowments and technology started to trade with each other and gained profits? from it. Those trade flows took place within the same industry rather than between industries. This international trade pattern based on Economies of scale and differentiated products is identified as the Intra-Industry Trade (Akram, 2013). Even though there are early identifications on trade within the industry by Ohlin (1933) and Hilgurt (1935), studies at the beginning of the 1960s connected to consequences of the formation of the European Economic Community (EEC), the phenomenon of IIT was discovered by Balassa (1986). Balassa and Bauwens (1987) began IIT literature by analyzing the customs union in Europe. The study explained the nature of IIT by investigating the trade within industries of the customs union in Europe. After introducing an index as a comprehensive measurement to measure the level of Intra-Industry Trade by Groubel and Lioyd (1975), the studies were driven through a different aspect. The comprehensive study on IIT began/commenced by their classic book in 1975, Intra-Industry Trade: The Theory and Measurement of International Trade in Differentiated Products. The book examined the measurement of IIT and since then, the suggestions of the authors have been the standard measure of IIT. Therefore, it is used in most of the empirical studies in order to measure IIT (Lundberg, 1981), (Gavelin and Lundberg, 1983), (Culem, 1986), and (Rodgers, 1987). Grubel and Lloyd (1975) have given some explanation regarding why IIT arises. They identified an important role of product differentiation in IIT in a non-formal way. The development of theoretical models in which IIT occurs as an outcome of their works.

According to the writer's knowledge, there are only a few studies available that address issues of IIT in the South Asian region. Among them, most of the studies were based on India and Pakistan international trade patterns. The others have focused on the intra-regional perspective of IIT. Among them, have analyzed the reasons for the low level of intra-regional trade within South Asia. He emphasizes that political differences and restrictive policies, almost identical pattern of competitive advantages, lack of complementarities among trading partners are the plausible factors of growth within South Asian regional trade. Furthermore, Mohanty (2003) emphasized the significant potential to trade and investment in the South Asian region. He observed the need for profound and strategic liberalization of trade to foster inter-regional trade. On the other hand, Shahbaz and Leitao (2010) studied the determinants of IIT for Pakistan with its ten major trading partners and over 26 years: from 1980 to 2006. They concluded that the similarities in taste and preference of the customers in two trading partner countries, economies of scale and product differentiation are influencing factors to the level of Intra-Industry Trade.

According to the above review of different studies led to the judgment that IIT is beneficial for producers by allowing them to produce fewer varieties with economic efficiency as well as consumers by providing them a wide range of choice of available goods at lower prices. But, there is a lack of empirical studies available that analyses the determinants of intra-industry trade in final goods and intra-industry trade focus on countries of the SAARC region. The present study attempts to bridge this research gap.

3. Sample and Methodology

This research conducts a comparative analysis of IIT between Sri Lanka and other selected South Asian countries in order to identify the Determinants of IIT. In this work, secondary data has been used and data collection instruments were secondary data sources such as the Com-trade database and the World Bank's World Development indicators. Data on IIT and other variables from the year 1992 to 2017 for 25 years were collected for this purpose.

3.1 The Target Population and The Sample

The research population comprised all countries in the South Asian Region. According to the World Banks' definition the number of countries in the South Asian region is eight, Namely; Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

The study selected four countries namely Bangladesh, India, Pakistan and Sri Lanka as its sample size. Basically, this research compared the IIT between Sri Lanka and other selected South Asian countries; Bangladesh, India and Pakistan. The study used the convenience sampling technique in order to address the total population. Therefore, these countries were selected into the sample due to the data availability and convenient approach for data collection.

3.2 Methodology

Model specification

In line with the past literature, this study applies Gravity Model and Panel Regression to examine the effect of selected explanatory variables on Intra-Industry Trade. The gravity model can be defined as,

$$F_{ij} = G\frac{M_i M_j}{D_{ij}^2} \quad (1)$$

Where, F_{ij} stands for the Force of attraction between two countries i and j, and M_i M_j represents the Mass of the countries respectively. D_{ij} is the Distance between the countries i, d j and G is the Gravitation model. The gravity model can be written in the same manner as the Newton law, and transforming the Newton's law to the trade,

$$Y_{ij} = \alpha\frac{y_i y_j}{D_{ij}} \qquad i = 1,\ldots\ldots N \text{ and } j = 1,\ldots\ldots N \quad i \neq j \quad (2)$$

Where, Y_{ij} is the bilateral trade between countries, y is the economic size of trading partners and D_{ij} is the distance taken as the trade barrier.

The gravity model in its logarithmic form defined as,

$$Y_{ij} = a + b_1 logy_i + b_2 logy_j - b_3 logD_{ij} \quad (3a)$$

In this study, the core gravity model will be augmented with its independent variables to examine the flows of Intra-Industry Trade in the South Asian Region. The variables of the study comprised, the Intra-Industry Trade as the dependent variable and Difference in Per Capita Income, Market Size, Economies of Scale and Barriers to Trade as independent variables. The regression model is a multivariate model stating that the Intra-Industry Trade as a function of the selected independent variables.

Thus, the regression equation will be,

IIT $= f$ **(Difference in Per capita income**, **Economies of scale, Product differentiation, Barriers to trade)**

Therefore, the augmented gravity model which this study used is,

$$Y_{jhft} = C + log\ DPCGDP_{hft} + log\ AGDP_{hft} + log\ DVADD_{hft} + log\ TR_{hft} \quad (3b)$$

Where, Y_{jhft} stands for Intra-industry trade flow between home country h and Trading partner f in year t in industry j, and $DPCGNI_{hft}$ is the Difference in per capita GNI between the home country and its trading partner f in year t. $AGDP_{hft}$ represents the Average GDP between the home country and its trading partner f in year t.

$DVADD_{hft}$ represents the Differences of Value added in the net output of the Manufacturing sector and TR_{hft} is the ratio of actual Tariff charges imports in the home country.

3.3 Definition of Variables

The dependent variable is the level of exports and imports of products, produced within the same industry, between countries . That is the level of Intra-Industry Trade. The extent of the Intra-Industry Trade level is calculated by using the Grubel–Lloyd index model (Groubel & Lioyd, 1975).

They defined IIT as the difference between the trade balance of specific industry and the total trade of the identical industry.

Adjusted G-L index is defined as;

$$IIT=1-\frac{|X_i-M_j|}{(X_i+M_j)} \Longleftrightarrow IIT=\frac{(X_i+M_j)-|X_i-M_j|}{(X_i+M_j)} \quad \text{.....(4)}$$

The index takes values between 0 and 1. If the index is equal to 0 it indicates pure Inter-Industry Trade which means there is no Intra-Industry Trade and value 1 shows, all trade is of the Intra-Industry pattern. In this study, the value of IIT index is measured according to SITC (Standard International Trade Classification) revision-3, section 6 and section 8 which is described as manufacturing goods classified chiefly by the material and Miscellaneous Manufactured Articles, respectively.

3.4 Independent Variables

DPCGNI- absolute difference in GNI per capita between Sri Lanka and its trading partner is used as a proxy for income differences between trading countries. Linder (1961) investigated that per capita GNI can be used as a measurement of people's taste and preferences. Further, the studies explained that countries which have similar taste and preferences have similar level GNI per capita level and therefore they engaged in bilateral trade more than countries which have different per capita GNI levels (Helpman & Krugman, 1985; Hanson, 1997) Therefore, it is expected to be a negative sign between the level of bilateral trade in terms of IIT in total international trade and difference in per capita GNI. Annual difference in Per Capita Gross National Income which is constant to 2011 in USD is used to measure the DPCGNI and the data for the variable has been collected from the Penn World Table data base.

AGDP- The average GDP of Sri Lanka and it's trading partner represents the market size of the economies. Annual GDP constant to 2010 in USD for each country is used to measure the variable and data is gathered from World Bank's World Development Indicators. Both GDP and the population have been used as a measurement of the market place in the gravity model. The market size of domestic firms will be increased by trade. thus, it increases the benefits by decreasing the average cost of production and increasing productivity (Krugman 1979). Many differentiated goods can be produced in large markets under the condition of economies of scale and there is a huge demand for foreign differentiated goods from the domestic market. Therefore, the possibility of IIT is very high. Also, as Ethier (1982) explained, with the free trade patterns, an increase in economies size enables the scale of production. Therefore, it is expected to be a positive sign of the share of IIT and the average GDP.

DVADD - Absolute differences of Value added in the net output of the manufacturing sector is used as a proxy for economies of scale. Manufacturing Value Added which is constant to 2010 in USD has been used to this purpose and data is collected from World Bank's World Development Indicators of the respective countries. Economies of scale that origin in a firm due to its large production scale is considered as negatively related to product differentiation. Ethier (1982) and Feenstra and Hanson (1997) argued that intra-industry trade in final manufactured goods is an increasing function of component varieties produced in both trading countries and that the economies of scale are a result of the greater division of labor rather than due to large plant size. Hence, the

small plant size is positively related to IIT in final manufacturing goods. He expects a negative sign between economies of scale which occurred due to large plant size and IIT.

TR - The probability of IIT in highly protected countries is very low. On the other hand, if the trade barriers are lowered the overall portion of IIT may rise. Therefore, the expected coefficient sign is negative. The average level of the tariff and non- tariff barriers for the home country and each of the trading partners can be used as an ideal measure of trade barriers (Gabriel, 1987). Due to the data and resource constraints, this study only uses the average tariff barriers for other countries. Tariff rate, the ratio of actual tariff charges imports act as a proxy variable to represent the trade barriers. The data was collected from the World Bank's World Development Indicators.

3.5 Hypotheses Development

This study aims to identify the determinants of Intra-Industry Trade in South Asian region. Thus,
H0 = there is no significant relationship between dependent variable and independent variables.
H1 = there is a significant relationship between dependent variable and independent variables.

4. Analysis and Discussion

To find out the determinants of Intra-Industry Trade in the South Asian region, this study used panel data and observed the relationship of the selected variables on IIT between Sri Lanka and selected South Asian countries; Bangladesh, India and Pakistan.

4.1 Summary Statistics

Summary statistics include 9 factors that represent the nature of data. The mean indicates the average values of the variable. The variance is calculated by the square of the standard deviation and it used to measure the dispersion of each variable. Standard deviation and range also show the dispersion of variables. The range can be identified as the difference between maximum and minimum values. Skewness and kurtosis are considered as measurements of symmetry and how data are tailed to a normal distribution respectively. Two factors of descriptive statistics; mean and median, can be used as the measurements of central tendency. The median of all variables which is less than its mean value indicates that all variables are positively skewed. According to the standard deviation TR has the highest variation while AGDP has the minimum variation. These results are also proved by the maximum and minimum values.

Table 1: Summary statics of the variables

Variable	IIT	TR	DPCGNI	DVADD	AGDP
Obs	78	59	75	75	75
Mean	.3275594	2.863112	.0219676	0.322271	.0529993
Minimum	.0090653	2.051556	-.0301158	-.5998096	.0117912
Maximum	.9886605	4.44640	.0744836	.7373915	.083149
Median	.200997	2.70069	0.209975	.3222123	.0512123
Std.div	.3112109	.5020051	.0174703	.1297896	.0159110
Variance	.0968522	.2520091	.0003052	.168453	.0002532
Skewedness	.9516957	.8856437	-0.171854	.4868324	-.135849
Kurtotis	2.387274	3.70069	4.215978	20.71301	2.4154

Source: Author Complied

4.2 Empirical Analysis

This study uses 25 years of available secondary data based on IIT between Sri Lanka and other selected three South Asian countries in order to identify the determinants of IIT in the South Asian region. For that purpose,

the data set was estimated using panel data analysis, which has two dimensions; three country pairs and 25 years. The data for measuring the level of IIT reported in SITC (Standard International Trade Classification) revision 3- section 6 and 8- Manufacturing Goods classified chiefly by Materials and Miscellaneous Manufactured Articles respectively.

Before the estimation, it should be tested whether any econometric problem occurs in the data. For that purpose, the study has tested for the presence of Stationarity, heteroscedasticity and multi collinearity problems. To detect and overcome these econometric problems diagnostic tests such as Unit root test, Breusch-Pegan test and VIF test are employed.

The study has focused on two techniques that are used to analyze the panel data such as fixed effect and random effect which allow accounting for individual heterogeneity. To select the most appropriate method between the FE method and the RE method to analyze the empirical results of the model, the Hausman test is used. According to the results (P-Value= 0.7456>0.05) of the test the Random effect model was selected as the appropriate model to analyze the estimated results. Then Breush-Pegan Langrange multiplier (LM) is used to diagnose whether the most appropriate method is the random effect model or simple Ordinary Least Squared (OLS) regression model. According to the LM test, the results(P-Value=0.0082<0.05) indicated that the Random effect is more suitable to analyze the regression results. Therefore, this study ran/analyzed the regression under the random effect model to determine the factors which are affecting the IIT level. The regression is included the level of IIT as the dependent variable and the four predictor variables to analyze the relationship between these two types of variables.

Table 2: Regression Results of Random Effect model

VARIABLES	**Coefficient**	**t-Statistic**
d_lgdpcgni	-0.0282	-0.0821
Lgtr	-0.0630	-0.565
d_dvadd	-0.641***	-5.057
d_agdp	0.381***	3.861
Constant	-2.129	-0.961
R-squire	0.3649	
Prob>f	0.0000	

z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

According to the results of the regression model all the signs of the variables are as expected.

According to the model, there is a positive relationship between IIT and the Average Gross Domestic Production (the proxy for the Market Size) and this relationship has been ensured by Akram & Mahmood (2012) and Turkan (2005). The reason behind this relationship is when the market size increases there is a feasibility for firms to increase their productivity and gain the benefit of economies of scale. It enables firms to compete in the international market by decreasing the average cost of production. Hence, the increase in opportunities for profit-making, increase the IIT consequently.

The variable difference in Value-Added in net output of the manufacturing sector, the proxy for economies of scale, is negative and statistically significant. This result is in-line with Greenaway et al (1995) and Akram and Mahmood (2012) who concludes that production fragmentation causes to increase the number of differentiated productions, and economies of scale that origin in a firm due to its large production scale is negatively related with product differentiation. But this result is against the predicted theory by Krugman (1979) and concluded that the plant size should be reduced in order to increase the IIT level.

The Difference in per capita GNI has a negative insignificant (prob=0.337) correlation with IIT which means when the difference of PCGNI is increased and it causes the downfall in the level of IIT. Also, the ratio of actual tariff charges imports in home country (TR) also indicate a negative insignificant correlation with IIT, which implies that when increase the tariff barriers, limitations of IIT arise.

5. Conclusion

Determinants of IIT with special reference to IIT between Sri Lanka and South Asian region: this study observes the determinant of Intra-Industry Trade used for 25 years by 3 pairs of countries, namely; Sri Lanka- India, Sri Lanka- Pakistan and Sri Lanka- Bangladesh. Though international trade in terms of IIT is increasing in the South Asian region there are only a few empirical studies which have examined the determinants of IIT between South Asian countries. Theoretically, there are two types of factors that are affecting IIT namely; country-specific determinants and industry-specific determinants. This theoretical debate is examined by empirical studies and they have suggested mixed results. However, this study is different from those studies because it examines both country-specific and industry-specific determinants which influence the level of IIT between Sri Lanka and other selected South Asian countries. To achieve this objective, this study has run a panel regression model which have two dimensions; country and time. The panel data technique can be performed in two ways Fixed effect model and Random effect model. The results of the Hausman test provided evidence to select Random effect as the more appropriate model to estimate the results.

According to the results of the Random Effect model, it concludes that the economic size and the economies of scale have a significant influence on the Intra-Industry Trade level between the two countries. In particular, Average GDP between Sri Lanka and partner countries (the proxy for economic size) found to be positively correlated with the Intra-Industry Trade and Difference in Value added to net out-put (the proxy for economies of scale) is negatively correlated with the IIT for Sri Lanka. Variables namely; difference of per capita GNI (difference in income level) and tariff rate (the proxy for trade barriers) negatively influence to the level of IIT though they cannot be considered as a major determining factor of IIT in Sri Lanka, according to the results of the model.

Moreover, the study implied an increasing pattern of IIT between Sri Lanka and its partners in the South Asian region. Thus, this study suggests that Sri Lanka and other South Asian trading partners should make a collaborative exertion to increase the level of IIT in order to sustain and strengthen the regional economic interest and enhance the volume of the regional trade.

References

Akram, A 2013, 'Pak-SAARC Intra-industry Trade', *Pakistan Institute Of Development Economics,* no. 93.

Akram, A & Mahmood, Z. (2012). Determinants of Intra-Industry Trade between Pakistan and Selected SAARC Countries. *Pakistan Institute of Development Economics*, Islamabad.

Balassa, B & Bauwens, L. (1987). Intra Industry Specialization in Multi-Country Multi- Industry Framework. *Economic Journal*, 97, 923-939

Balassa, B. (1986). Intra-Industry Trade among Exporters of Manufactured goods. *Imperfect Competition and International Trade.*

Culem, C & Lundberg, L 1986 'The Product Pattern of Intra-Industry Trade: Stability Among

Countries and Over Time', Weltwirtschafliches Archiv, vol.122, pp.113-130.

Ethier, W. (1982). National and International Returns to Scale in the Modern Theory of International Trade. *American Economic Review*, 72, 3, 389-405

Feenstra, R, Gordon, F & Hanson 1997, 'Foreign Direct Investment and Relative Wages: Evidence from Mexico's Maquiladoras', *Journal of International Economics*, vol.42, pp. 371-393.

Gabriel GM, 1987, 'Intra-Industry Trade between Developed and Developing Countries: The United States and the NICs', *The Journal of Developing Areas,* vol.21, pp.481-494.

Gavelin, Lk & Lundberg, L 1983, *Determinants of Intra-Industry Trade: Testing Some Hypothesis on Swedish Data in Tharakan (1983).*

Greenaway, D, Milner, C Amp; Hine, R 1995 'Vertical and Horizontal Intra-Industry Trade: A Cross Industry Analysis for the United Kingdom', The Economic Journal, vol.105, pp. 1505-1518.

Grubel, HG & Lloyd, P. (1975). *The Theory and Measurement of Intra-Industry Trade*. John Wiley & Sons, London.

Hansson, P 1997, 'Empirical Studies of Determinants of Intra-Industry Trade: A Survey', *Umek Economic Studies*,no. 156.

Helpman, E & Krugman, PR 1985, *Market Structure and Foreign Trade*, Wheatsheef Books, Harvester Press, Massachusetts

Hilgurt, F 1935, The Approach to Bilateralism: A change in the structure of world trade', *Svenska Handelsbank Index*, Stockholm, pp. 175-188.

Hummels, David & James, L 1993, 'Monopolistic Competition and International Trade: Reconsidering the Evidence', *National Bureau of Economic Research*, Working Paper No. 4389.

Kemal, AR, Din, M, Abbas, K & Qadir, U 2001, 'A plan to strengthen regional trade cooperation in South Asia', In TN Srinivasan (ed.), *Trade, Finance and Investment in South Asia*, Social Sciences Press, New Delhi.

Krugman, P 1979, 'Increasing Returns, Monopolistic Competition and International Trade', *Journal of International Economics*, vol. 9, pp. 469-479.

Linder, S 1961, *An Essay on Trade and Transformation*, Almqvist and Wicksell, Stockholm.

Lundberg, L 1981, 'Intra-Industry Trade: The Case of Sweden', *Weltwirtschaftliches Archiv*, vol. 118, pp. 302-316.

Mohanty, SK 2003, 'Regional trade liberalisation under SAPTA and India's trade linkages with South Asia: An empirical assessment', Discussion Paper No. 48, *Research and Information System for the Non-Aligned and Other Developing Countries*, New Delhi.

Mukherji, IN 2004, 'Towards a free trade area in South Asia: Charting a feasible course for trade liberalisation with reference to India's role', Discussion Paper No. 86, *Research and Information System for the Non-Aligned and Other Developing Countries*, New Delhi.

Ohlin, B 1933, *Interregional and International Trade*, Harvard University Press, Cambridge.

Pitigala, N 2005, *What does regional trade in South Asia reveal about future trade integration? Some empirical evidence*, Policy Research Working Paper No. 3497, World Bank, Washington, D.C.

Rodgers, JR 1987, *An Analysis of Intra-Industry Trade Flows: The Case of Sweden,* University of Minnesota.

Shahbaz and Leitao 2010, 'Intra-Industry Trade: the Pakistan Experience', *International Journal of Applied Economics,* vol. 7, no. 1, pp. 18–27

Tarakan, PKM 1986, 'The Intra- Industry Trade of Benelux with the Developing World', *weltwertschaftliches Archive*, vol. 122, pp. 131- 149.

Turkan, K 2005, 'Determinants of Intra-Industry Trade in Final goods and Intermediate Goods between Turkey and Selected OECD Countries', *Ekonometri ve Istatistik Say*, vol. 1, no. 1, pp. 20–40.

Verdoon, P 1960, 'The Intra-Bloc Trade of Benelux', In EAG Robinson (ed.) *The Economic Consequences of the Size of Nations*, Macmillan, New York, pp. 291–329.

Willmo, L 1972, 'Free trade in Manufacturing Among Developing Countries', *Economic development and cultural changes*.

Yeats, Alexander, J 2001, 'How Big is Global Production Sharing?', In S Arndt and H Kierzkowski (eds.) *Fragmentation: new Production Patterns in the World Economy*, Oxford University Press, London.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 10-21
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.341

Measurement of Competitiveness and Market Concentration of Indonesian Banking Sharia

Paulina[1]

[1] STIE Indonesia Banking School, Kemang Raya 35, Jakarta Selatan, Jakarta, Indonesia. Email: paulina.harun@ibs.ac.id

Abstract
This study aims: (1) The extent of competitiveness of sharia banking in Indonesia's current economic development; (2) How far the strength of the sharia banking market in Indonesia today. The research conducted to measure the competitiveness of sharia banking in Indonesia and market forces encountered, using the observation period 2010-2016, and the data used is time series and cross section data. The research design used in research is quantitative research, by using model Lerner Index, PR-H Statistics Model, and multiple regression. Based on the results of the study, 1. Using the Lerner index model, for 10 Indonesian sharia banks, especially murabahah products with observation period 2010 - 2016, shows that the competitiveness of Indonesian sharia banks is still very low. The Lerner index for each sharia banks with competitiveness of murabahah products is Bank Mega Sharia, Bank BRI Sharia, Maybank and BSM. As for other sharia banks is still very low; 2. The measurement of market forces using the PR-H Statistics model, murabahah products of Indonesian sharia banks during 2010-2016 fall into the category of the monopolistic competition market. This indicates that, the murabahah product of each sharia banks is basically almost the same, only slightly differentiated by the deficited products in such a way between one bank and another bank; 3. Regression result model of factors affecting competitiveness, only ROA variable that influence to competitiveness, it shows that ROE variable, capitalization and efficiency not become determinant of competitiveness of a bank, especially for murabahah product.

Keywords: Competitiveness, Sharia Banking, Murabahah

1. Introduction

Development undertaken by a country can not be separated from the development of all sectors of the economy one of them is the financial sector. The role of the financial sector in development as the intermediation of the real sector in allocating existing resources becomes a very important thing. Whether realized or not, the financial sector becomes one of the actors in development to be able to utilize the resources they have. As the financial sector develops better there will be more financial resources that can be allocated to productive sector investment, the formation of physical capital and will ultimately provide a stimulus to economic growth.

The last two decades of the Islamic finance industry have grown quite rapidly not only in countries with Muslim majority but also in other non-Muslim countries, even the development of sharia finance industry globally is

growing rapidly. Based on World Islamic Banking Competitivness Report 2014-2015, the growth of Islamic finance industry reaches an average growth of 17 percent from 2009 to 2013. International sharia banking assets reach more than US $ 778 million in 2014. In particular with 6 largest markets among others Qatar, Indonesia, Saudi Arabia, Malaysia, the United Arab Emirates (UAE) and Turkey, will reach US $ 1.8 billion in 2019. Demand for Islamic banking products around the world is not only done by the Muslim population but also non-Muslims as a means diversification of capital owners' invesment.

The World Bank also mentions, in the year 2014 was recorded only 36.1% of adults in Indonesia who have accounts in formal financial institutions. Thus most Indonesians still do not have access to formal financial services, so the opportunity for shariah-based financial growth is still very wide open. On the other hand, shariah-based finance comprising of banking, capital markets and non-sharia bank financial services and other sharia-based business activities has grown and flourished, but growth is still needed to be optimized. Based on data from OJK, up to March 2015 the sharia financial market was recorded at 4.7%, with business volume amounting to Rp. 268.4 trillion. The development of sharia banking in Indonesia is still far behind compared to Malaysia. Meanwhile, Indonesia is a country with the majority of the largest Muslim population in the world. Currently, the market share of sharia banks in Malaysia reaches 40-50%, while in Indonesia only reaches 5% (OJK, 2016).

Several studies have done more emphasis on how important the development of Islamic finance for economic development. Even some studies emphasize the shariah and conventional differences, but do not see how far the stability and efficiency of the Islamic financial industry in the economic growth of a country. From the various problems that exist, the focus of this study problem is:1. How far the competitiveness of sharia banking in Indonesia's current economic development 2. How far the strength of the sharia banking market in Indonesia today.

Sharia Bank

Sharia Bank is a banking system that conducts its business activities and other services in payment traffic that are ideally suited to the principles of sharia. According to Law number 21 Year 2008, Sharia bank is a bank conducting its business activities based on sharia principles. By type consists of Sharia (BUS), Sharia (Islamic) Financing Bank (BPRS), and Sharia (Islamic) Business Unit. Joe S Bain (1956) using a deductive and empirical approach saw the development of industrial sectors impacting the banking industry. Banking as an intermediary institution plays a significant role in economic growth. Where the banking industry today is not only conventional but also sharia banking. The existence of two kinds of banking not only affects economic growth but also competition.

Competitiveness

The context of the global economy requires every country, especially the banking sector to face a very tight competition. In the banking context, there are several approaches to measure competitiveness / competition, namely structural approach and non structural approach. Weill 2011 in Risfandy, et.al (2016) competitiveness is the ability of banks to influence the price of banking products and services charged to customers.

A frequently used competitiveness study basically uses two approaches, namely structural and non structural approaches, Biker (2004). Measuring competition of an industry or often called market power of late has become one thing that is often discussed. According to Biker (2004), market power is the ability of a company (market participants) to raise prices in the market, making the market inefficient.

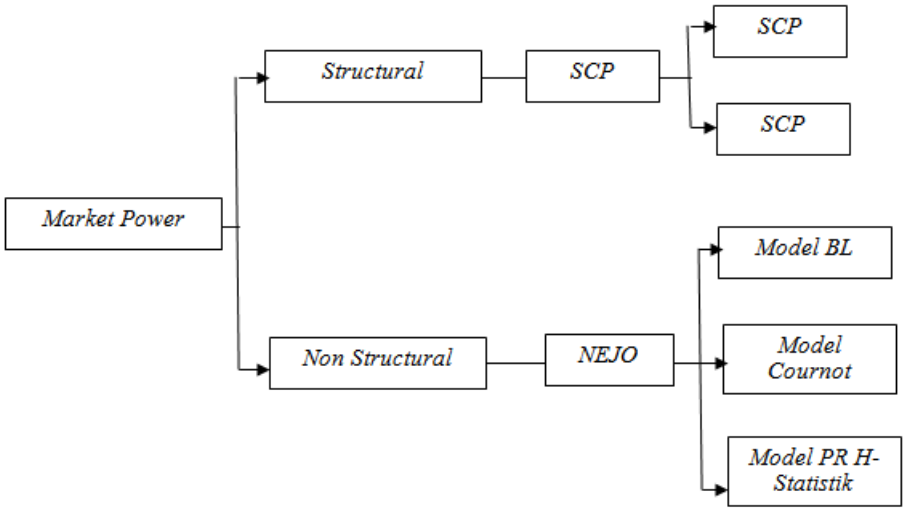


Figure 1: Market Power Measurement Approach in Industry (Bikker, 2006)

Competitiveness Approach

Structural Approach

The structural approach uses the SCP (Structure Conduct Performance) model. This measurement focuses on the use of accounting data related to profit and costs. This approach was developed by Bain, 1956 on the behavior of the manufacturing industry in the United States. This approach began to be used in the banking industry conducted by Howe (1978) with the aim of seeing the concentration level of the banking industry more collusive. In industry, the SCP model approach in measuring general competition uses the Hirscman Herfindal Index (HHI) and Concentration 4 (CR 4) approach.

Hirschman Herfindall Index (HHI)

This measurement is relatf, where the value of HHI coefficient ranges between 0 and 1. If the HHI number approaches 0, the weight distribution of output or variable observed between companies in the industry more evenly, meaning the level of competition between banks is greater. Conversely, if close to 1, then the distribution is more uneven, or the industry is in the market is not perfect competition. However, the high or low Herfindal index value does not necessarily reflect evenness or inequality in the distribution of output, and this becomes irrelevant in the determination of industrial concentrations according to Berger, Demirguc, Levie, and Haubrich (2004). The Herfindal-Hirscman index formula is mathematically as follow :

$$IH = \sum_{i=1}^{n=k} \left\{\frac{X}{TX}\right\}^2 \quad \text{.....(1)}$$

Concentration Ratio *(CR)*

The economic context of the industro, the concentration ratio is often referred to as M-Ratio, and in general the often-observed industry consists of 4.8, and the 20 largest companies that dominate the market. For the banking sector in Biker (2004) which only uses 8 banks, it is said to be enough to represent the entire banking share. The banking variables used are total loans, total assets, and third party funds. The concentration value ranges from 0 to 1, closer to 0, then the market structure is perfect competition, and if close to 1 then the market structure faced is monopoly.

Non Structural Approach

In the structural approach with the SCP model is a one-way approach, it is characterized where the performance of a banking can be seen from its structure, while this is not in accordance with the actual conditions. Because banking performance will be more visible than its ability to compete, and this is what causes the emergence of New Empirical Industrial Organization (NEJO) model.

Bresnahan and Lau Model

First developed by Timothi F. Bresnahan and Lawrence J.Lau in 1982. Basically this model is structural that describes the relationship between demand and supply curves on the oligopoly structure. The BL model as follows:

$$\pi = Pq - C(q, W) - F \quad \text{.....(2)}$$

Where: π = profit; q = output; P = price; C = variable cost, W = exogenous variable affecting the cost of supply; and F = fixed costs The function of market demand. Is an aspect of the price on the profit equation whose components are as follows:

$$P = f(Q, Z) = f(q_1 + q_2 + q_3 + \cdots . q_n, Z) \quad \text{.....(3)}$$

Meanwhile, the supply equation is an inverse function of the demand equation. The BL model has an index value of 0 to 1, if the value indicates the number 0, then the market is facing competition is perfect, whereas if close to 1, then the market structure faced is a collusion oligopoly.

Cournot Model

This model was first introduced by Augustin Cournot in 1838. This model tends to occur in the oligopoly structure, where the firm produces homogeneous goods and each company treats its competitors output as a fixed one and all companies decide simultaneously how much output to produce. This means that the company in the market, must really know the condition of its competitors in order to obtain accurate information and will ultimately win the press and master the market, Pyndick & Rubinfeld (2010).

PR-H Statistic Model

The model that is often used in the banking industry is Panzar Roose model or better known as PR-H Statistics. This model was developed by Panzar and Rose in 1987, which is used to measure the degree of competition in an industry, especially banking and its derivatives and long-term competition, monopoly and monopolistic competition. In the analysis using this model, there are two factors in the acceptance of banking, namely input prices and control variables. Assuming, an input n itself and output production function. Model PR-H Statistics can be written as follows:

$$\log TR = \alpha + \sum_{i=1}^{n} \beta_i log W_i + \sum_{j=1}^{n} \gamma_j log CF_j + \varepsilon \quad \text{.....(4)}$$

Where: TR = total revenue Wi = factor input consists of wage labor, cost of funds and fixed capital costs CF = control variables include total capital to total assets and total debt to total assets.

$$PR - H\ Statistik = \sum_{i=1}^{n} \beta_i \quad \text{.....(5)}$$

The value of PR-H Statistics shows the market structure of competition, and is the sum of the elasticity coefficients on the control variables.

Table 1: PR-H Statistic Value

PR-H Statistic	Explanation
0	Monopoly
Negative	Colluding Oligopoly
0 to 1	Monopolistic Competition
1	Perfect Competition

Source: Panzar & Rose, 1987

Excess model of PR-H Statistics in measuring the level of market forces of the banking sector, among others: (1) able to see the market structure more broadly; (2) can be estimated using a linear regression model; (3) requires only a few variables for testing. This model is very comprehensive if used to analyze the competition, especially the banking industry.

Shaffer (1982) using a sample bank in New York, shows banking competition in the monopolistic competition market, and the model used is the PR-H Statistics Model. Molyneux and Forbes (1995), using banking in the European region, such as; France, Germany, Spain and Britain in the period 1986 to 1989. For Italy, the banking sector is indicated on the monopoly market.

Sufian & Abdul (2008), using the PR-H model of Statistics and the Lerner Index, indicates that the sharia banking industry in Indonesia operates at a high market power level and lacks competitive power. Islamic banking earns revenue on monopolistic competition market conditions. This study also shows a negative and insignificant influence between the level of industry concentration and competitiveness, while the market power for the leading companies for sharia banking has begun to decline.

Berger, T., Demirglic, Kunt, A (2009), the high concentration of banks and cross-border markets, indicating a declining stability in the high-income banking sector, suggesting that banks and markets with high levels of concentration are vulnerable to financial stability faced.

Berger, A.N., Klapper, L.F & Turk Arris (2009), Competition erodes market power, lowers profit margins and reduces franchise interests. Banks with strong competition will reduce the market power of the bank and will ultimately reduce the level of profit margins and the desire for franchising.

Bikker, B., et al. (2006), a study involving 18,000 banks, in 101 countries for over 16 years. It shows that as many as 28% of the 101 countries are in the monopoly market, and 38% are in perfect competition markets. The monopoly power that occurs in some of these countries will lead to inefficiency in banking this is due to the strong dominance of some banks to other banks, while in some other countries tend to enter the perfect competition, this indicates that banks in some countries are required to act efficient and ability to have a good market share.

Soedarmono, W., Machrouh, F., Tarazi, A (2014), a study conducted involving commercial banks for 12 countries over the period 2011-2007, empirical findings highlight that higher market forces in the banking market result in more instability high. Although banks are better capitalized in less competitive markets, their default risks remain higher. A deeper investigation shows that such behavior depends on the economic environment. Higher economic growth contributes to neutralizing higher risk taking and higher instability in less competitive markets.

Abduh, M (2017) uses the PR-H model of Statistics and the Lerner Index, indicating that the sharia banking industry in Indonesia operates at a high market power level and lacks competitive power. Islamic banking earns revenue on monopolistic competition market conditions. This study also showed a negative and insignificant influence between the level of industry concentration and competitiveness, while the market power for the leading companies for sharia banking has started to decline. And the pooled square model for the estimation of several Islamic banks in Indonesia.

Indeks Lerner

This index is a measuring instrument that measures the competitiveness of each bank individually. This index is a direct gauge for market competition, because this index focuses on the ability of banks to determine the price of products or services for its customers, Weill (2011). The Lerner index explains the difference between the price of the product charged to the consumer and the marginal cost incurred by the bank. The higher the price of the product over the marginal cost, the higher the Lerner index is generated and it indicates the higher competitiveness of the bank. The Lerner index calculation method in this study is in accordance with Weill (2011) and Turk-Arris (2010) in Risfandy (2016).

Risfandy, et al (2016), using the Lerner index model and competitiveness, shows that sharia banking in Indonesia has enormous strength compared to conventional banking. However, using the Lerner index, it turns out that sharia in Indonesia has a low market power.

Arris (2010), Sahut et al. (2012) shows that there is a positive and significant influence between market power on profitability. The level of profitability is influenced by internal variables, such as; total assets and lending.

2. Method

The research conducted to see the competitiveness and concentration of sharia banking market in Indonesia, using observation time during 2014, and the data used is cross section. The research design used in research is quantitative research. The variables used are total cost (TC), total assets (TA), and cost inputs issued by banks as marginal cost components, consisting of: labor cost (W1), capital cost (W2), and funding cost (W3).
In this study, the unit of analysis focused on sectors in the economy. Data obtained from other parties or data already available. The data used in this study are secondary data obtained from: a. Indonesia Central Bank ; b. Central Bureau of Statistics ; c. Institutions / Agencies other related institutions, and d. 10 Sharia Banking in Indonesia, by using time series data for 7 years (2010-2016).

Empirical Model

The analytical model used in this study to look at competitiveness and market concentration, as well as the factors affecting market concentration are:
The Lerner Index
Lerner index calculation model from Fernandez de Guevara, Maudos and perez (2005: 2007), Klapper and Turk-Arris (2009). With the following formula

$$lnTC = \alpha_0 + \alpha_1 \ln(TA) + \frac{1}{2}\alpha_2 (lnTA)^2 + \sum_{j=1}^{3} \beta_j \ln(W_i) + \sum_{j=1}^{3}\sum_{k=1}^{3} \beta_{jk} \ln(W_i) \ln(W_k) + \sum_{j=1}^{3} \gamma_j \ln(TA) \ln(W_i) + \varepsilon \quad \text{…(6)}$$

$$MC = \frac{TC}{TA}\left(\alpha_1 + \alpha_2 \ln(TA) + \sum_{j=1}^{3} \gamma_i \ln(W_i)\right) \quad \text{…(7)}$$

$$LI = \frac{(P-MC)}{P} \quad \text{…(8)}$$

PR-H Statistic Model

Using equations from Claessens Leaven (2004) and Bikker et al (2006). The equation as follows

$$lnTR_{it} = \alpha + \beta_1 lnW_{1it} + \beta_2 lnW_{2it} + \beta_3 lnW_{3it} + \beta_4 lnZ_{1it} + \beta_5 lnZ_{2it} + \beta_6 lnZ_{3it} + \varepsilon_{it} \quad \text{…(9)}$$

$$lnROA = \alpha + \beta_1 lnW_{1it} + \beta_2 lnW_{2it} + \beta_3 lnW_{3it} + \beta_4 lnZ_{1it} + \beta_5 lnZ_{2it} + \beta_6 lnZ_{3it} + \varepsilon_{it} \quad \text{(10)}$$

Regression Model Factors Affecting the Level of Competition

By using multiple regression between the Lerner index and the factors that affect it. The mdel regression equation as follows:

$$LI = \alpha + \beta_1 ROA + \beta_2 ROE + \beta_3 Capitalisasi + \beta_4 Effisiensi + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(11)$$

3. Result

Description Results of the study

Table 2: Descriptive Statistic

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Ln TR	70	6.696398281	10.88260284	17.57900112	15.22969377	.1758046854	1.470887527	2.164
Ln BBH	70	6.631051105	7.103322063	13.73437317	10.25219604	.2059473932	1.723079514	2.969
Ln Margin	70	11.38800505	7.862497197	19.25050225	13.24697928	.2845614134	2.380811597	5.668
ROA	70	12	-8	4	.91	.166	1.388	1.926
ROE	70	107.0	-49.1	58.0	8.520	1.4498	12.1299	147.135
Ln DPK	70	11.26741841	12.64356277	23.91098118	17.20715079	.2899860099	2.426197027	5.886
CAR	69	65.8	10.6	76.4	20.073	1.4441	11.9957	143.896
Ln BOPER	70	11.13128962	9.543521484	20.67481111	14.99975438	.3742512617	3.131210705	9.804
Ln BTK	70	9.888787464	8.834045641	18.72283310	13.10330579	.3572638031	2.989083429	8.935
Ln TC	70	10.41763390	10.38979505	20.80742895	15.61850972	.3512463661	2.938737940	8.636
FDR	69	108.0	55.0	163.0	89.193	1.7386	14.4423	208.580
TC/TA	70	266.0533162	.0001028676	266.0534191	10.30970171	3.991363830	33.39414568	1115.169
Ln W1	70	15.02608337	-11.32388616	3.702197208	-4.165340762	.4740939790	3.966554811	15.734
Ln W2	70	15.14434190	-9.725973423	5.418368473	-2.268892175	.4305366529	3.602128075	12.975
Ln W3	70	10.36020805	-11.82637825	-1.466170206	-6.954954748	.3645288050	3.049866797	9.302
Valid N (listwise)	68							

Source: SPSS 21

Based on the descriptive data above, it appears that some variables have negative minimum value especially for ROA and ROE variables, this is possible because several years of observation there are banks with ROA condition, ROE that minus value, this is related to the bank's ability to create profitability in some time is very small or ruigi. Likewise with operational costs, other costs and labor costs, obtained minus minimum value for some period. This can happen because the cost is quite large and not covered with operating income faced. However, some variables with minus minimum values can be overcome with some time of considerable value.

Model Function Total Cost Trans Logarithm

Based on the model used in this study, the total function model of cos trans logarithm, aims to see how the variables that make up the equation have an impact on the formation of the cost for each sharia bank. The total function calculation results cos trans logarithm can be seen in table 3. below this.

Table 3: Function Transaction Cost Estimation Result

Variable	Coeffitient	t-statistic	sig
Constant	-0.034	-0.027	0.978
Ln TA	1.030	5.057	0.000
I/2 Ln (TA)2	0.006	0.353	0.725
Ln W1	0.628	6.192	0.000
Ln W2	0.262	2.391	0.02
Ln W3	-0.097	-0.609	0.545
Ln W1 Ln W1	0.064	14.910	0.000
Ln W2 Ln W2	0.058	15.056	0.000
Ln W3 Ln W3	0.017	3.200	0.002
LN W1 Ln W2	-0.113	-40.138	0.000
Ln W1 Ln W3	-0.026	-4.257	0.000
Ln W2 Ln W3	0.007	1.254	0.215
Ln TA Ln W1	-0.014	-1.899	0.063
Ln TA Ln W2	0.014	1.800	0.077
Ln TA Ln W3	0.017	1.490	0.142
R2	0.999		
Adjusted R2	0.999		
F-statistic	3796.724		0.000
DW Test	1.525		

Source: processed data

Calculation results show that most of the independent variables used to see the total cos function, some independent variables do not affect the total cost function, among others: squared total assets, funding costs, capital and funding costs, total cost of assets and labor costs as well as total assets and financing costs. It shows that for the sharia banking used in this study, the independent variables that make up the total cost function are total assets, labor cost, capital cost. It is these variables that influence the formation of total cost in sharia banking. Thus the total management, labor costs and capital costs must be done in such a way, so as not to cause high costs and further impact on the benefits derived sharia banking.

Function Model Marginal Cost Trans Logarithm

In the marginal function model of cos involving free vaiabel is total asset, labor cost, capital cost and funding cost, and total ratio cos and total asset. The calculation results can be seen in Table 4. below this. Referring to the above data-processed results, the marginal cos functions formed from the independent variables of the total cos ratio of total assets and associated with each cost (labor cost, capital cost and cost of financing) show results that are not in accordance with the foreseeable. This means that if one independent variable is associated with another free variable it can be said that it will have no effect as if the independent variable stands alone, as this is reflected in the calculation of the total cos function in Table 4. for which the independent variables associated with other independent variables will have no effect on the dependent variable.

Table 4: Result of Estimation of Marginal Cost Trans Logarithm Function

Variable	Coeffitient	t-statistic	sig
Constant	200.066	0.633	0.529
TC/TA Ln W1	-0.126	-0.026	0.979
TC/TA Ln W2	4.776	0.484	0.630
TC/TA Ln W3	-1.864	-0.253	0.801
TC/TA Ln TA	-1.233	-0.437	0.664
R2	0.094		
Adjusted R2	0.038		
F-statistic	1.688		0.164
DW Test	1.126		

Source: processed data

Lerner Index Model

Lerner Index model, is a measuring instrument that measures the competitiveness of each bank individually or in groups. This index is a direct gauge for market competition, because this index focuses on the ability of banks to determine the price of products or services for its customers, Weill (2011). The Lerner index explains the difference between the price of the product charged to the consumer and the marginal cost incurred by the bank. The higher the price of the product over the marginal cost, the higher the Lerner index is generated and it indicates the higher competitiveness of the bank. The Lerner index calculation method in this study is in accordance with Weill (2011) and Turk-Arris (2010) in Risfandy (2016). The Lerner Index has a range of values 0 to 1, the higher the Lerner index indicates the higher competitiveness of the bank. According to Soedarmono, et al (2011), Lerner's index can be negative, this can happen to banks that do not work optimally, when the price of their products and services is lower than the marginal cost.

Table 5: Result of Calculation of Sharia Bank Lerner Index 2010-2016 Based on Year

Year	Observation	Average	Minimum	Maksimum	Std.Dev
2010	10	0.08770	-0.58605	0.45660	0.33850
2011	10	0.08168	-0.34620	0.46475	0.30781
2012	10	0.03585	-0.38190	0.46046	0.30331
2013	10	0.13483	-0.27268	0.46822	0.22180
2014	10	0.15124	-0.35723	0.49360	0.25117
2015	10	0.06030	-0.39439	0.46155	0.32570
2016	10	0.04396	-0.43450	0.42191	0.31086

Source: processed data

Based on Table 5. above, for sharia banking is calculated using sharia banking data for 7 years and involves 10 sharia banks in Indonesia it appears that, the average competitiveness of Indonesian sharia banks is still low, it can be seen from the average value of the Lerner index still far from expectations. This research by specializing in murabahah products, from the results obtained in line with the research conducted by Abduh (2017), that the sharia banking Indonesia has a low competitiveness and different from the study conducted by Risfandy, et al. (2016) Islamic banking in Indonesia with high competitiveness.

Table 6: Result of Calculation Sharia Bank Lerner Index 2010- 2016

Bank	Observation	Average	Minimum	Maksimum	Std.Dev
BCA's	7	0.0824	0.3592	-0.5861	0.4936
BJB'S	7	-0.0811	0.2926	-0.3491	0.3931
BNI'S	7	0.0799	0.3526	-0.4345	0.4566
BRI'S	7	0.1844	0.2601	-0.2770	0.4682
BSM	7	0.1111	0.2421	-0.3819	0.4028
BUKOPIN'S	7	0.0945	0.2728	-0.3944	0.3754
MEGA'S	7	0.2403	0.1414	0.0892	0.4605
MUAMALAT	7	0.0315	0.3169	-0.3903	0.4616
PANIN'S	7	-0.0312	0.3066	-0.3572	0.4647
MAYBANK'S	7	0.1136	0.2960	-0.3526	0.4643

Source: processed data

Meanwhile, from the calculation of lerner index for each sharia bank using 7 years of observation and 10 banks, it appears that Mega Sharia bank has Lerner index value which is quite good compared with other sharia bank, followed by BRI Sharia, Maybank and BSM . The next prospect that is getting closer is Bukopin Sharia, BCA Sharia, BNI Sharia, Muamalat. Meanwhile, BJB Sharia and Panin Sharia Banks are two banks with very low levels of competition (can be seen from the negative Lerner index value), this indicates that the marginal cost of the two banks is greater than the price of the products and services produced.

PR-H Statistic Model

The results of calculations performed for the PR-H model of the 10 Indonesian sharia banks for 7 years of observation, in the results as in Table 7. following.

Table 7: Function Estimation Results Total Revenue Trans Logarithm

Variable	Coeffitient	t-statistic	sig
Constant	-56.255	-7.697	0.000
Ln W1	0.179	4.790	0.000
Ln W2	0.058	1.56	0.124
Ln W3	0.111	1.924	0.059
Ln Z1	0.504	0.745	0.459
Ln Z2	24.545	10.606	0.000
Ln Z3	0.989	9.177	0.000
R2	0.749		
Adjusted R2	0.725		
F-statistic	30.85		0.000
DW Test	0.894		

Source: processed data

In an effort to measure the level of competition or measure the degree of competition in an industry, especially banking and its derivatives and long-term competition, whether entering the monopoly market and monopolistic competition market. By using the PR-H provisions of the above calculations, Indonesian sharia banking over the period 2010-2015 (by summing the coefficients for W1, W2 and W3) in the values of (0.179 + 0.058 + 0.111 = 0.348), this indicates that the PR-H value of 0.348 is included in the monopolistic competition market. The consequences of sharia banks that enter into such markets are facing considerable competitors with differentiated products based on sharia banks that are considered as representative for other banks (tight competition).

By using murabahah products, the results of this study provide an illustration that the results of the study are in line with the research conducted by Shaffer (1982), Suffian & Abdul (2008), and Abduh (2017), that the market conditions facing sharia banking is a monopolistic competition market. This study is different from Soedarmono, where banks with high market power are accompanied by high instability as well.

Similarly, when viewed from the calculation of ROA trans logarithmic function that can be seen in Table 8. the following.

Table 8. The Results of ROA Trans Logarithm Function Estimation

Variabele	Coeffitient	t-statistic	sig
Constant	9.792	1.249	0.217
Ln W1	-0.031	-0.833	0.408
Ln W2	-0.050	-1.370	0.176
Ln W3	-0.050	-0.861	0.393
Ln Z1	0.106	0.157	0.876
Ln Z2	-3.823	-1.575	0.121
Ln Z3	-0.096	-0.930	0.356
R2	0.109		
Adjusted R2	0.018		
F-statistic	1.199		0.319
DW Test	1.297		

Source: processed data

Using the ROA Function model and PR-H provisions from the above calculation results, Indonesian sharia banking over the period 2010-2015 (by summing the coefficients for W1, W2 and W3) in the values of (-0.031 - 0.050 - 0.050 = 0.131), this indicates that the PR-H value of sebebsar -0.131 is included in the oligopoly market. The consequences of sharia banks that enter such markets are facing very strict competitors with differentiated products but with one another working together (collusion) in certain respects.

Regression Model Factors Affecting the Level of Competition

The calculation to find out the factors that affect the competitiveness of Indonesian sharia banking for murabahah products, get the results as in Table 4.8. below this. Based on the calculation to see the factors that influence the competitiveness of sharia banking in Indonesia especially murabahah products, only ROA variables that affect the competitiveness of murabahah products sharia banking, while ROE, Capitalization and Efficiency does not affect the competitiveness of these products. The results of this study are in accordance with the research of Arris (2010) and Sahut, et al. (2012), but not in accordance with research Risfandy, et al (2016).
The results of this calculation, especially for murabahah products that affect the competitiveness of sharia banks 2010-2016 period is the ability of banks in creating profitability, especially ROA variable, this is a question why only ROA variable that has a positive impact on competitiveness but not with other variables, efficiency.

Table 9: Estimated Results of Factors Affecting Competitiveness

Variable	Coeffitient	t-statistic	sig
Constant	0.423	2.476	0.016
ROA	-0.091	-1.975	0.05
ROE	0.008	1.572	0.121
Capitalisation	-0.003	-1.242	0.219
Efficiency	-0.003	-1.852	0.068
R2	0.099		
Adjusted R2	0.044		
F-Statistic	1.791		
DW-test	1.228		

Source: processed data

4. Discussion

The results of the study conducted using the Lerner Index model, PR-H Statistic, as well as factors affecting competitiveness, can be concluded the following points.

1. Using the Lerner index model, for 10 Indonesian sharia banks, especially murabahah products with observation period 2010 - 2016, shows that the competitiveness of Indonesian sharia banks is still very low. The Lerner index for each sharia bank with competitiveness of murabahah products is Bank Mega Sharia, Bank BRI Sharia, Maybank and BSM. As for other sharia banks is still very low.
2. The measurement of market forces using the PR-H model of statistics, murabahah products of Indonesian sharia banks during 2010-2016 fall into the category of the monopolistic competition market. This indicates that the murabahah product of each sharia bank is essentially almost the same, only slightly differentiated from the defended product in such a way that one bank with another bank.
3. Regression result model of factors affecting competitiveness, only ROA variable that influence to competitiveness, it shows that ROE variable, capitalization and efficiency not become determinant of competitiveness of a bank, especially for murabahah product.

The implications of the study conducted in measuring the level of concentration and competitiveness of the market of sharia banks in Indonesia with murabahah products, indicate that most banks have low competitiveness and market strength indicated in the monopolistic competition market. this shows that the murabahah products of Indonesian sharia banks are basically the same and there is little difference between the bank's products with each other. while in terms of competitiveness only ROA variable that becomes a factor affect the ability of competitiveness of sharia banking.

References

Abduh, M (2017), *Competitive Condition and Market Power of Islamic Banks in Indonesia*. International Journal of islamic and Middle Eastern Finance and Management. Vol.10 Iss 1 pp

Abdul & Sufian (2008), *Market Structure and Competition in Emerging Market: Evidence from Malaysian Islamic Banking Industry*. Munich Personal RePEc Archive MPRA No.12126 : 1-23

Ariss, Turk (2010). *Competitive Conditions in Islamic and Conventional Banking : a Global Perspective.* Review of Financial Economics, 19: 101-108

Berger, T., & Demirglic,Kunt,A (2009). *Financial Institutions and Markets Acrros Countries and Over Time: Data and Analysis*, World Bank Policy Research Working Paper, 4943

Berger, A.N.,Klapper,L.F & Turk Arris,R (2009). *Bank Competition and Financial Stability*, Journal of Financial Services Research 35: 99-248

Bikker, B, et. al (2006). *Misspesification of The Panzar Rosse Model: Assesing Competition in The Banking Industry*. De Nederlanche Bank NV Working Paper, No.114

Bikker, J.A & Bos,J.W.B (2008). *Bank Performance: A Theoritical and Empirical Framework for The Analysis of Proitability, Competition and efficiency*. Routledge International Studies in Money and Banking, New York

Daryanto, Arief & Hafizrainda, Yundy (2010). *Quantitative models models: for local economic development planning: concepts and applications*. IPB press

Ekananda, Mahyus (2016). *Analysis of Econometric Data Panel.* Mitra Wacana Media, Jakarta

Gujarati, Damodar N (2010), *Essential of Econometrics.* Fourth Edition, Mc.Graw Hill Education, New York

Hakim, Abdul (2014). I*ntroduction to Econometrics with Eviews Application.* Ekonsia Press, Indonesian Islamic University

Jean-Michel Sahut, Mehdi Milli & Maroua Ben Krir (2012). *Factors of Competitiveness of Islamic Banks in The New financial Order*, Working Paper IDEAS Repec: 1-15

Manurung, Jonni & Manurung, Hayman, et all (2005). *Econometric : Theory & Applications.* Elex Media Computindo

Panzar, J & J.Rosse (1987). *Testing for Monopoly Equilibrium*. Journal of Industrial economics, 35: 443-56

Pyndick & Rubinfeld (2010), *Microeconomics*, 7th edition, Pearson Education

Risfandy, et.all (2016). *Daya Saing Bank Sharia di sebuah negara Religius : temuan Empirik dari Indonesia*. Jurnal Keuangan dan Perbankan, Vol. 20, No.2 Mei 2016, hlm.282-291

Sahut, J.M & Krir, M.B (2012), *Factors of Competitiveness of Islamic Banks in the New Financial Order.* Working Paper IDEAS Repec : 1-15

Soedarmono, W.,Machrouh,F.,Tarazi,A (2014). *Bank Market Power, Economic Growth and Financial Stability : Evidence form Asian banks*. Journal of Asian Economic 22(6): 460:470

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 22-34
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.342

COVID-19 Pandemic, Stimulus Packages and Stock Returns in Vietnam

Son T. Vu[1], Tam T. Le[2], Chi N. L. Nguyen[2], Duong T. Le[2], Phuc H. Le[2], Ha K. Truong[2]

[1] Central Commission for Organization and Personnel
[2] National Economics University, Hanoi, Vietnam

Correspondence: Tam T. Le, National Economics University, Hanoi, Giai Phong, 207, Vietnam. Email: tamlt@neu.edu.vn

Abstract
This paper investigates the impacts of COVID-19's new cases and stimulus packages on the daily stock returns of five key economic sectors (Finance, Fast-moving-consumer-goods (FMCG), Healthcare, Oil and Gas, and Telecommunication) in Vietnam – one of the best countries in the world for handling COVID-19. The research team uses the Pool OLS method, with the panel data of 11 342 observations from 107 listed firms in these five sectors in the period January-June 2020. The key findings are (i) all sectors' stock returns are negatively affected by daily new confirmed cases of COVID-19, the hardest hit is on the financial sector, followed by FMCG, healthcare, oil and gas, and telecommunications sectors. Vietnam did not have many affected cases, but low average income makes investors and consumers more careful and hesitate to spend/invest; (ii) in contrast to prior studies, stimulus packages did not accelerate the growth of stock returns in all sectors, with the order from most to least negatively affected: finance, oil and gas, telecommunication, healthcare, and FMCG. The slow implementation made investors skeptical of the growth potential of firms, they assess the stimulus packages as the signs of economic downturn. This fact leads to different recommendations for the Vietnamese Government in combating COVID-19.

Keywords: COVID-19, Stimulus Package, Stock Market Reaction, Stock Returns, Vietnam

1. Introduction

The COVID-19 pandemic started in December 2019 has catastrophic impacts on global economic development and stock markets (Raheem et al., 2021; Udah & Francis, 2021, Chowdhury et al., 2021; Narayan et al., 2021; Gherghina et al., 2020; Liu et al., 2020; Ashraf 2020; Baeket al.l, 2020; Rizwan & Ahmad, 2020; Phan & Narayan, 2020). However, few studies focused on comparing its impacts on different sectors, as some sectors become rising stars while others are sinking stones. Most countries have policy responses to the COVID-19 pandemic, including huge stimulus supports programs, but few studies on how effective they are, how the market reacts to these supports. Vietnam is ranked as one of the best countries in the world for handling COVID-19 (Galloway, 2021), and one of 26 countries having positive economic growth in 2020, while the other 167 experience negative growth

(IMF, 2021; Statistics Times, 2021). However, Vietnam's economy is still badly impacted by the COVID-19 pandemic. Therefore, the case of Vietnam is interesting to discover to answer the questions: (1) What are the impacts of COVID-19 on the stock return of five key sectors (finance, fast-moving-consumer-goods (FMCG), healthcare, oil and gas, and telecommunication)? (2) What is the impact of stimulus packages – one of the key pandemic-related policy responses - on the stock market and these sectors; (3) What are policy implications for combating with COVID-19 economically?

2. Literature Review

2.1 Impact of COVID-19 pandemic nexus on stock return of different sectors

Coronavirus pandemic delays economic activities worldwide (World Bank, 2020). It has created an uncommon risk level, leading investors to suffer substantial losses within a brief time (Zhanget al.l, 2020). Many studies conclude the negative relationship between stock returns and the COVID-19 pandemic regardless of research scope. Examining 64 countries with panel data analysis technique, Ashraf (2020) concludes that stock market returns decline as the number of confirmed cases increases in all countries; and the growth in the number of confirmed cases has a more powerful impact than the growth in the number of deaths. He et al. (2020) supports the idea that COVID-19 had a negative but short-term impact on the stock markets when analyzing daily stock returns in eight developed countries using conventional t-tests and non-parametric Mann–Whitney tests. With the Chinese stock market case, Al-Awadhiet al.l (2020) reveals the serious adverse impact of daily growth in the total confirmed cases and the total deaths on stock returns to all companies. Chowdhuryet al.l (2021) analyze the case of 12 countries to find out the serious negative impact of the pandemic on stock market returns, of which European markets were the worst sufferers. In Vietnam, Anh and Gan (2020) also demonstrate that the daily number of COVID-19 cases harms the Vietnamese stock returns, but the stock market performed oppositely before and during the nationwide lockdown.

However, COVID-19 does not badly impact all sectors. It creates opportunities for some sectors to boost significantly while diminishing many other sectors. In the US, the market volatility in many industries, including consumer products, was related to the panic-inducing news of COVID-19 (Haroon & Rizvi, 2020). In China, the COVID-19 outbreak had a minor impact on health, information technology (IT), and telecommunications stock returns (Liew & Puah, 2020). During the pandemic, IT and pharmaceutical industry stock returns in China significantly performed the best in the market, while stock returns for beverage, air transport, water, and highway transport sectors were worse than the market (Al-Awadhiet al. l, 2020). On the Turkish stock market, insurance and banking were among the most adversely affected sectors, while food-beverage, wholesale, and retail trade were among the less affected sectors from the outbreak (Ozturk et al., 2020). By March 2020, the stock return of the oil industry was the most volatile (Mazuret al. l, 2021). Natural gas experienced a positive increase in stock return amid the pandemic, resulting from byproduct produced only through the refining of oil for crude petroleum producers. Due to the steep drop in oil prices in March 2020, crude producers agreed to cut oil output, which automatically decreased natural gas demand. This had a positive impact on natural gas market prices and natural gas producers' projected potential cashflows. In Australia, Alam et al. (2020) find out the positive impact of COVID-19 on the stock return of the Telecommunications and Technology sectors during the pandemic, resulting from the skyrocketing demand for services to work and study from home (Ramelli & Wagner, 2020). However, firms in the sector tend to be similarly affected, due to close resemblance in corporate finance, vulnerable to macroeconomic shocks, and faced by fluctuations in supply and demand (Rizvi & Arshad, 2018; Moskowitz & Grinblatt, 1999).

Although the outbreak of COVID-19 had a more powerful consequence on emerging Asian markets than on emerging markets in Europe (Topcu & Gulal, 2020), little previous research investigates in individual countries. In India, only the FMCG business had seen a good stock return due to their increased need for necessary goods, while other businesses experienced a sharp decline (Rakshit & Basistha, 2020; Chaudharet al. al, 2020). In Vietnam, the most severely impacted sector on Ho Chi Minh City Stock Exchange (HOSE) was the financial sector, followed by the industrial and consumer goods sectors before the lockdown. On Hanoi Stock Exchange

(HNX), pre-lockdown harmed the utility sector the most. Significantly, the lockdown positively influenced all the selected sectors' stock performance (Anh & Gan, 2020).

2.2 Impact of stimulus packages on the stock market

Governments have undertaken various economic responses to limit the economic impacts of the COVID-19 pandemic, of which stimulus packages are mostly utilized. Recessions are not self-correcting, so governments should take actions to reduce their severity (Narayan et al., 2021; Phan & Narayan, 2020; Keynes, 1964).

When assessing the effects of COVID-19 and governments' stimulus package on the stock market of the 25 most-affected countries, Phan and Narayan (2020) received mixed results. In 11 countries, including France, United Kingdom, Spain, Italy, Russia, Israel, Peru, South Korea, Japan, Chile, and Poland, there was a positive reaction to the stock market on the day the stimulus package was announced. The stock markets in the remaining countries showed a negative reaction. A pattern was recognized that the success of the stimulus package in promoting the stock market's positive response sequenced the imposing of lockdown. For the case of 26 emerging stock markets listed by Morgan Stanley Capital International (MSCI), the impact of the outbreak is smaller thanks to the governments' quick response and the generous size of announced stimulus packages (Topcu & Gulal, 2020). Nevertheless, in many developing countries, stimulus packages may be less effective due to weak monetary transmission, small multipliers, slow implementation (Loayza & Pennings, 2020). Harjoto et al. (2020) find that the US stock market experienced positive abnormal returns from the Fed stimulus compared to others. Narayanet al.l (2021) found down that lockdowns travel bans, and economic stimulus packages all had a positive effect on the G7 stock markets.

2.3 Impact of COVID-19 on five sectors: Healthcare, Telecommunication, Finance, FMCG, Oil and Gas

The current COVID-19 pandemic is putting enormous pressure on health care systems around the world. Pharmaceutical organizations have become the overwhelming focus in the COVID-19 battle. The healthcare sector in Vietnam has also emerged in the COVID-19 pandemic (World Bank, 2020). Until May 2020, Vietnam was one of the few countries that have successfully slowed down the pandemic with its adaptive health system organization model (Nguyen et al., 2020). Due to the COVID-19 pandemic, Vietnam has a potential face mask market (Huynh, 2020; La et al., 2020). More than 1.13 billion medical masks of all kinds have been exported by Vietnamese companies from the beginning of the year to the end of October 2020 (Customs of Vietnam, 2020).

Telecommunication is an essential sector in the context of COVID-19. Telecommunications infrastructure and its services are crucial to keep individuals and organizations connected and active due to online education, work, entertainment, etc (Khan, 2021). In Vietnam, the sector has been expanding since the early days of COVID-19 (La et al., 2020). The Internet supported families in every aspect of their lives, including educational support and a bridge to exchange goods (Dung & Trang, 2020; Pham & Ho, 2020; Ha & Thuy, 2020; Pham et al., 2020).

COVID-19 has a major effect on the financial market since it triggered a rise in non-performing loans as a result of borrowers' income losses and a high number of depositor withdrawals in a brief period (Goodell, 2020). The decline in economic activity caused by COVID-19 also decreases microfinance institutions' financial efficiency (Zheng & Zhang, 2020), and the crisis and the countercyclical lending role put banking systems under considerable stress (Demirguc-Kunt et al., 2020). In terms of the insurance market, there is also an implication of the pandemic for life insurance companies. In China's insurance market, COVID-19 has lowered commercial insurance premium revenue, monthly year-over-year premium growth rate, insurance density, and insurance depth (Wang et al., 2020). According to the General Statistics Office of Vietnam (GSO), credit growth of the first six months of 2020 has the lowest level (2,45%) compared to the same period from 2016 to 2020. The reduction income caused a delay in the payment of premiums of valid insurance contracts and unwillingness to buy new insurance packages. The stock market plummeted with total mobilization in the first six months down 37% (the total capital mobilization was estimated at VND94.6 trillion) compared to the same period last year. All credit institutions, including foreign finance companies and banks, play an important role in supporting businesses, people damaged by the pandemic by the means of rescheduling the repayment terms, exempting, reducing interest rates.

From a daily index of consumer panic in 54 countries in the period of January- April 2020, Keane and Neal (2020) showed widespread consumer panic in most countries, especially during March. Both domestic transmission and global transmission of viruses contribute significantly to consumer panic. The FMCG has suffered the least decline in contrast to other sectors (Chaudhary et al., 2020). However, many studies pointed out the bad consequences of the COVID-19 pandemic to the food supply chain in FMCG, as countries close their border to prevent the spread of the coronavirus (Rizou et al., 2020; Hobbs, 2020). FMCG household consumption expenditure in Vietnam recorded sudden growth in the first six months of 2020, due to the impact of social distancing. Amid the health crisis, consumers shopped with larger shopping carts due to stockpiling demand and panic buying, the main driver of the double-digit growth of FMCG (Kantar, 2020). Rumors and fake news about COVID-19 also fueled unneeded community action (Ha et al., 2020).

Pandemics may reduce oil demand, making oil prices decrease (Qin et al., 2020). During the COVID-19 crisis, the oil market became inefficient (Gil-Alana & Monge, 2020) and the COVID-19 pandemic has a statistically significant positive effect on crude oil returns and stock returns in the US (Liu et al., 2020). Researchers should not ignore the oil market when evaluating the pandemics' impact (Qinet al.l, 2020). However, there is little scholarly research on the effects of COVID-19 on the whole oil and gas sector in Vietnam. The oil and gas sector of the Vietnam Oil and Gas Group PVN was experiencing difficulties. The reason is that oil prices while having a powerful influence on oil and gas exploration and production, plummeted due to lower demand and lower gasoline prices. All phases from exploitation, support services, product distribution are significantly affected by the influence of COVID-19 (Duc et al., 2020).

3. Data

This study investigates the impacts of the COVID-19 pandemic and the Vietnam government's stimulus packages on the stock returns of 107 listed firms on HOSE and HNX, including 16 firms from the Healthcare sector, 9 firms from the Telecommunications sector, 41 firms from the Financial sector, 30 firms from the FMCG sector, and 11 firms from the Oil and Gas sector. Data of daily stock prices are employed from Datastream and firm-specific characteristics are taken from firms' financial statements posted on vietstock.com. Macroeconomic data was retrieved from the General Statistics Office of Vietnam (GSO) and investing.com. The time interval is from January 30, 2020 to June 30, 2020. January 30 was the first trading day of the Vietnam stock market since the first confirmed COVID-19 case and the first trading day after the Lunar New Year holiday. The start date of stimulus packages was March 4, as Directive 11, the first official document of the government regarding stimulus packages was issued on that day. The daily number of new confirmed cases is archived by the Ministry of Health in Vietnam at https://ncov.vncdc.gov.vn/. There is a total of 11 342 observations in the study.

4. Methodology

The outbreak does not impact the stock return performance at a specific point of time but for months (Narayanet al.l, 2021; Al-Awadhet al.al, 2020; Ashraf, 2020; Anh & Gan, 2020). The different panel-data regression methods (FEM/REM/Pooled OLS) are checked to find out which one is the most appropriate to analyze the differences in impacts at a sectoral level regarding an event exist because the impact of omitted variables is controlled (Al-Awadet al. al, 2020; Ashraf, 2020; Anh & Gan, 2020). Following are two regression models applied in this study.

$$Return_{i,t} = \beta_0 + \beta_1 COVID19_t + \beta_2 ROE_i + \beta_3 DE_i + \beta_4 ER_t + \beta_5 MS + \beta_6 CPI + \varepsilon_{0i,t} \quad (1)$$

$$Return_{i,t} = \beta_7 + \beta_8 COVID19_t + \beta_9 ROE_i + \beta_{10} DE_i + \beta_{11} ER_t + \beta_{12} MS + \beta_{13} CPI + \gamma_0 D\_AFSP + \varepsilon_{1i,t} \quad (2)$$

Where:

$Return_{i,t}$ is the stock return of firm i on day t calculated by the formula $Return_{i,t} = \ln (SP_{i,t} - SP_{i,t-1})$, where $SP_{i,t}$ is the closing price of firm i's stock on day t and $SP_{i,t-1}$ is the closing price of firm i's stock on day t-1.

$COVID19_t$ is the daily new case of COVID-19 on day t.

ROE_i is the quarterly return on equity of firm i.

DE_i is the quarterly debt to equity of firm i.

ER_t is Vietnam's Exchange Rate against USD on day *t*.
MS is the monthly money supply.
CPI is the monthly consumer price index.
D_AFSP is the dummy variable for the stimulus packages which equals 1 after March 4, and 0 otherwise.

This paper has two sets of hypotheses. The first set investigates whether the daily new cases of COVID-19 have an impact on the stock return performance of each of the five sectors, which are Healthcare, Telecommunication, Finance, FMCG, and Oil and Gas. The second set involves evaluating the efficiency of stimulus packages to the sectoral stock returns. After testing those two sets of hypotheses for each sector, the impact on the five sectors in both cases is ranked to conclude the impact level among them.

Table 1: Key independent variables and hypotheses in the models

Variables	Hypothesis	References
Daily new cases of COVID-19 (COVID19)	H1: The daily new cases of COVID-19 positively impacted on the stock return of the Healthcare sector	Sharet al. al, 2020; Al-Awaet al.t al, 2020; Maet al.t al, 2020; Cet al.t al, 2009
	H2: The daily new cases of COVID-19 positively impacted on the stock return of the Telecommunication sector	Alam et al, 2020; Ramelli & Wagner, 2020
	H3: The daily new cases of COVID-19 negatively impacted on the stock return of the Financial sector	Chaudhary R et al, 2020; Öztürk et al, 2020; Wang et al, 2020; Anh & Gan, 2020
	H4: The daily new cases of COVID-19 negatively impacted on the stock return of the FMCG sector	Rizoet al.al, 2020; Hobbs, 2020; Mazet al. al, 2020; Chaudhaet al. al, 2020; Haroon & Rizvi, 2020
	H5: The daily new cases of COVID-19 negatively impacted on the stock return of the Oil and Gas sector	Mazur et al, 2020; Qin et al, 2020; Gil-Alana & Monge, 2020
Stimulus packages amid COVID-19 pandemic (D_AFSP)	H6: The stimulus packages positively impacted on the stock return of the Healthcare sector	Narayan et al, 2021; Topcu & Gulal, 2020; Harjoto et al, 2020; Loayza & Pennings, 2020; Phan & Narayan, 2020; Liu et al, 2018
	H7: The stimulus packages positively impacted on the stock return of the Telecommunication sector	
	H8: The stimulus packages positively impacted on the stock return of the Financial sector	
	H9: The stimulus packages positively impacted on the stock return of the FMCG sector	
	H10: The stimulus packages positively impacted on the stock return of the Oil and Gas sector	

Source: Authors' compilation

Data processed are analyzed by the following steps: (1) use descriptive statistics analysis to report quantitative data's characteristics; (2) examine Pearson correlation; and (3) conduct regression analysis. Depending on β_0 and β_7, there will have different panel model requirements. Hausman test is performed to choose the more appropriate estimator for the models, between fixed and random effect estimators (Hausman, 1978). In the case where the fixed effects model is adopted, β_0 and β_7 are treated as regression parameters. In the case where the random-effects model is adopted, β_0 and β_7 are treated as components of the random disturbance. Moreover, F-test and BreuchePagan test are performed to check the existence of firm-specific effects. The null hypothesis of the two tests is that β_0 and β_7 are equal for all the firms tested. If the null hypothesis is rejected, which is the case where it is assumed that there is an equal individual firm effect across all firms tested, then the pooled OLS is consistent

and efficient. After choosing the optimal model for the study, the model is tested by implementing a multi-collinearity test based on the Variance Inflation Factor (VIF); autocorrelation test in panel data (Wooldridge, 2010), and the heteroskedasticity test (White, 1980).

5. Discussion Results

5.1 Descriptive statistics

The result from table 2 show that the outliers are eliminated, and the variables are descriptively qualified for analysis.

Table 2: Summary of descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Return					
Healthcare	1696	-0.000 321 50	0.032 295 50	-0.105 360 50	0.095 535 20
Telecommunication	954	-0.000 540 70	0.029 712 40	-0.105 360 50	0.095 310 20
FMCG	3180	-0.000 578 90	0.033 251 10	-0.105 384 10	0.096 404 90
Finance	4346	-0.000 639 20	0.035 209	-0.182 321 60	0.182 321 60
Oil and Gas	1166	-0.001 690 30	0.034 909 50	-0.105 360 50	0.095 55
ROE					
Healthcare	1696	0.042 061 20	0.033 634 90	-0.0005	0.1776
Telecommunication	954	0.033 884 90	0.032 021 70	-0.0039	0.1314
FMCG	3180	0.028 385 20	0.049 472 40	-0.1294	0.2014
Finance	4346	0.572 755 90	4.467 738	-16.39	14.49
Oil and Gas	1166	0.020 903 60	0.047 142	-0.0791	0.1894
DE					
Healthcare	1696	0.523 959 20	0.490 093 40	0.135 657	2.040 278
Telecommunication	954	1.297 28	1.065 645	0.351 059 80	4.533 378
FMCG	3180	0.849 241 70	0.547 157 60	0.1289	2.3999
Finance	4346	4.447 517	5.662 253	0.0059	18.735 54
Oil and Gas	1166	0.994 087 20	0.449 355 60	0.108 104 10	1.615 819
COVID19	11 342	3.160 377	6.569 424	0	41
ER	11 342	23 324.72	127.821 10	23 173.5	23 642.5
MS	11 342	1.09e+07	158 018.5	1.07e+07	1.11e+07
CPI	11 342	104 332.5	2 704.402	101 970	109 300
D_AFSP	11 342	0.226 415 10	0.418 529 30	0	1

Source: Authors' compilation

The average daily case of COVID-19 is about three cases per day with the highest number of confirmed cases per day is 41 cases. Among the five sectors, the average stock return of the Healthcare sector remains to be the most potential one with around -0.000 321 50, followed by Telecommunication (-0.000 540 70), FMCG (-0.000 578 90), Finance (-0.000 639 20), and Oil and Gas (-0.001 690 30).

5.2 Testing the correlation, appropriate regression model and the errors.

The result of Pearson correlation analysis of five sectors on all eight independent variables shows that: the daily number of new cases is negatively related to the stock return performance of all five sectors. A negative relation also exists between the stimulus packages and the stock return in all five sectors.

Most independent variables exhibit a relationship with others, which may cause a multi-collinear phenomenon. Specifically, there is a high level of correlation among the three macroeconomics variables at a confidence level of 99%. The COVID19 and D_AFSP variables also correlate to most of the other variables.

To evaluate whether FEM, REM, or Pooled OLS is more appropriate for both models mentioned, the authors run the Hausman test. The further results were checked through F-test for fixed effects with a P-value higher than 0.05, and the Lagrange multiplier test for random effects with P-value equal to 1.00 in all five sectors. As a result, Pooled OLS is the optimal model for this study.

The multi-collinearity test is also implemented to inspect this error among independent variables. Both models from all five sectors have no multi-collinearity with the VIF value smaller than 10. There is also no autocorrelation in all sectors with a P-value above 0.05. However, the results of the heteroskedasticity test point out the occurrence of heteroskedasticity in the model with a P-value equal to .000 in all sectors. In this case, the Feasible generalized least squares method (FGLS) helps to fix the heteroscedasticity defects. The reason is that the method will estimate the model based on the OLS method (even in the case of autocorrelation and heteroscedasticity). The errors drawn from the model will be used to estimate the variance-covariance matrix of the error of the model.

5.3 Regression result and analysis

Table 3 shows the result of the first regression model. Daily new cases of COVID-19 have a negative impact on the stock return performance of all sectors.

Table 3: Impacts of the daily case of COVID-19 on sectors.

	Healthcare	Telecommunication	Finance	FMCG	Oil and Gas
COVID19	-0.000 386***	-0.000 321**	-0.000 759***	-0.000 585***	-0.000 376***
	(-3.49)	(-2.23)	(-10.31)	(-6.61)	(-2.59)
ROE	-0.008 89	-0.005 50	-0.000 001 81	-0.004 32	-0.005 89
	(-0.34)	(-0.15)	(-0.02)	(-0.39)	(-0.25)
DE	-0.000 249	0.001 09	0.000 016 80	0.000 241	-0.000 409
	(-0.14)	(0.86)	(0.23)	(0.23)	(-0.21)
ER	0.000 018***	0.000 017 40**	0.000 022***	0.000 029***	0.000 017 10*
	(2.62)	(1.97)	(5.03)	(5.32)	(1.93)
MS	1.05e-08*	1.70e-08**	2.03e-08***	1.34e-08***	1.20e-08
	(1.85)	(2.00)	(5.43)	(2.90)	(1.55)
CPI	-0.000 000 507	-0.000 000 483	-0.000 001***	-0.000 000 422	-0.000 000 381
	(-1.34)	(-0.96)	(-2.98)	(-1.39)	(-0.76)
_cons	-0.471***	-0.540**	-0.668***	-0.771***	-0.490**
	(-2.74)	(-2.33)	(-5.84)	(-5.58)	(-2.15)

Note(s): The numbers in parentheses are standard errors. *, **, *** indicate significance levels at 10%, 5%, 1%

Source: Authors' compilation

The results confirm that stock returns are negatively affected by the pandemic, which is similar to the result of Anh & Gan (2020). In detail, the Telecommunications sector is hit the least adversely at a 95% confidence level, which is also supported by Al-Awadet al. al (2020), Liew and Puah (2020). Telecommunications are expanding in Vietnam as analyzing above. During the pandemic, the internet became the main factor connecting people for work, school, etc. Additionally, the digital transformation trend also contributes to the explosion of the Telecommunications sector. Different from the prior studies, the sample includes Oil and Gas sector, and the results show that that the sector is less severe than the Healthcare, and FMCG sectors. The long-term expectation of investors for the Oil and Gas sector is the main force for this phenomenon. It is the belief in the recovery of oil price when businesses around the world will return to the normal production cycle and the effectiveness in price adjustments of the government, especially when the Vietnam government performs very well in controlling the disease. Meanwhile, even though there is a significant rise during the pandemic in the Healthcare sector (the sharp increase in the consumption of masks, antiseptic disinfectant liquid, etc.) and FMCG sector (panic buying), it is believed to be a short-term effect of the pandemic. Stockpiling goods leads to storing without consumption, which easily drops the sales number in the following months. The phenomenon, thus, does not benefit the businesses too much. The financial sector remains the most vulnerable sector, which is explained by the considerable stress of the crisis and the countercyclical lending role that credit institutions suffer. In table 4, after supplementing the stimulus packages into the model, the study solves the second set of hypotheses.

Table 4: Impacts of the daily case of COVID-19 and support packages on sectors.

	Healthcare	Telecommunication	Finance	FMCG	Oil and Gas
COVID19	-0.000 35***	-0.000 288**	-0.000 700***	-0.000 553***	-0.000 332**
	(-3.16)	(-1.98)	(-9.44)	(-6.18)	(-2.27)
D_AFSP	-0.006 17**	-0.006 66*	-0.010 80***	-0.005 73***	-0.008 97**
	(2.27)	(1.89)	(5.98)	(2.63)	(2.52)
ROE	-0.008 33	-0.000 569	-0.000 000 572	-0.003 66	-0.004 51
	(-0.32)	(-0.02)	(-0.00)	(-0.33)	(-0.19)
DE	-0.000 243	0.001 08	0.000 016 20	0.000 244	-0.000 390
	(-0.14)	(0.86)	(0.22)	(0.23)	(-0.20)
ER	0.000 024***	0.000 024 90***	0.000 034***	0.000 035***	0.000 027***
	(3.32)	(2.60)	(7.04)	(5.92)	(2.79)
MS	2.61e-08***	3.43e-08***	4.80e-08***	2.81e-08***	3.52e-08***
	(2.93)	(2.75)	(8.11)	(3.89)	(2.94)
CPI	-0.000 001**	-0.000 000 953*	-0.000 002***	-0.000 000 80**	-0.000 001 02*
	(-2.22)	(-1.70)	(-5.39)	(-2.43)	(-1.82)
_cons	-0.753***	-0.857***	-1.166***	-1.033***	-0.904***
	(-3.56)	(-3.03)	(-8.29)	(-6.06)	(-3.23)

Note(s): The numbers in parentheses are standard errors. *, **, *** indicate significance levels at 10%, 5%, 1%

Source: Authors' compilation

On the contrary with the positive effects of stimulus packages on the stock markets of many countries (Phan & Narayan, 2020), the stimulus packages in Vietnam left a negative influence on all five sectors. It can be implied that in emerging countries, due to weak monetary transmission and small fiscal multipliers (Loayza & Pennings, 2020), investors are skeptical about the efficiency of the stimulus packages' disbursement. In particular, the Financial sector is again the most negatively affected, followed by the Oil and Gas sector, the Telecommunications sector, and the Healthcare sector. The FMCG is the least affected of the five sectors. A possible reason is that the stimulus packages target non-financial business sectors such as agriculture, textiles, footwear, automotive, aviation, electronics, food processing, and tourism sectors. It is then implied that the pandemic would affect non-financial businesses less than financial firms and the stock market, in return, indicates this valuation (Anh & Gan, 2020). Besides, Directive 11 assigned relevant agencies to ensure the supply of goods to meet consumer demand and consolidate the domestic market, therefore, it is a good perspective to invest in the FMCG sector.

Table 5: Summary of regression results

Variables	Sector	Coefficient (p-value)	Expected signal	Actual signal	Significant level	Hypothesis testing result
COVID-19 daily new cases	Finance	-0.000 759	-	-	1%	Support
	FMCG	-0.000 585	-	-	1%	Support
	Healthcare	-0.000 386	+	-	1%	Not support
	Oil and Gas	-0.000 376	-	-	1%	Support
	Telecommunication	-0.000 321	+	-	5%	Not support
Stimulus Packages	Finance	-0.010 80	+	-	1%	Not support
	Oil and Gas	-0.008 97	+	-	5%	Not support
	Telecommunication	-0.006 66	+	-	10%	Not support
	Healthcare	-0.006 17	+	-	5%	Not support
	FMCG	-0.005 73	+	-	1%	Not support

Source: Authors' compilation

From the result of panel-data regression models, this study shows that the daily new confirmed COVID-19 cases negatively impacted stock returns of all five examined sectors, the order from most affected to least affected is: Finance, FMCG, Healthcare, Oil and Gas and Telecommunication.

Hypotheses H3, H4, H5 are supported. As with empirical evidence from other countries, in Vietnam, all credit institutions, including foreign finance companies and banks play an important role in supporting businesses, people damaged by the pandemic by the means of rescheduling the repayment terms, exempting, reducing of interest rates etc. Banks during the pandemic also suffer from profit loss due to role to support businesses. The reduced income also drops the willingness for any kinds of investment, but forces people save more for daily consumption. The stockpiling behavior under uncertainty is the main factor for the sudden growth in sales of FMCG. However, when people have moderated their consumption along with positive news about disease prevention, the demand for FMCG will return back to normal. The phenomenon, in fact, causes the sudden stress for the supply chain rather than bring any benefit for FMCG businesses. The Oil and Gas is a particular sector because it is affected by the oil price trend in the world. Since the oil price decrease due to low demand for transportation and the oil market became inefficient during the pandemic, the stock returns of the sector are affected negatively.

However, the stock returns of two sectors of healthcare and telecommunication are also badly affected, opposite to previous studies (H1 and H2 are not supported). It can be explained from the fact that: Vietnam has not many affected cases (By June 2020, Vietnam only had 355 cases/97.3 million of population, no death, 76 days having no new cases (PV, 2020). However, Vietnam's average income is still low (USD 2715 per annum (World Bank, 2020). Therefore, both investors and consumers are very careful and hesitate to spend/invest, and they focus more on keeping their investment/consumption focusing on necessities. The healthcare businesses are on high demand during the pandemic, however, those companies in Vietnam are still weak in terms of investment in expansion, R&D and, at the same time, suffer from the fierce competition with foreign companies. Although consumptions of masks, antiseptic disinfectant liquid etc. increase suddenly, the phenomenon is short-term and not enough to compensate the difficulties healthcare businesses undergo.

The stimulus packages in Vietnam had negative influences on stock returns of all sectors, which are opposite to previous studies (hypotheses from H6 to H10 are not supported). The order of sectors from most to least negatively affected is Finance, Oil and Gas, Telecommunication, Healthcare, FMCG.

Vietnam is one of the best countries in handling the COVID-19 pandemic (Galloway, 2021;et al.t al, 2020;et al.t al, 2020; Tet al.t al, 2020). The government of Vietnam has several stimulus monetary and fiscal packages since the outbreak of COVID-19, with a total of 6 packages and an amount of approximately US$ 23 billion (UN Vietnam, 2020). However, the implementation of these packages by June 2020 was still very slow, due to the

complicated rules and procedures for defining the target groups and disbursement (UN Vietnam, 2020; Tien Long, 2020, Loayza & Pennings, 2020). Also, stimulus packages in emerging countries may be less effective than those in developed nations, and sometimes even caused adverse impacts such as higher inflation, higher government debt, less confidence of the investors in debt sustainability (Wolf, 2020). Therefore, investors in the Vietnam stock market remain skeptical of the growth potential of firms during the pandemic and the efficiency of the stimulus packages' disbursement. Besides, this negative signal shows investors' reaction in assessing the stimulus packages as the signs of an economic downturn.

6. Policy implications

To overcome the COVID-19 pandemic better and ensure more efficiency of the stimulus packages, some policy implications for Vietnam are proposed.

Government of Vietnam has proactively reacted to the COVID-19 from beginning such as: strong national propaganda of the COVID-19 to all citizen, clear guidelines of the emergency responses, medical measures, blockade of the schools, travel bans, social distancing, and nationwide lockdown, financial supports, and other measures) to restrain the spread of the virus to protect stock markets (Galloway, 2021). These measures should be kept constantly and strictly to maintain the good results of preventing and combating COVID-19, to bring more confidence to consumers and investors and boost economic growth. In addition, to ensure the efficiency and effectiveness of stimulus packages, Government should enhance the implementation faster and choose the most appropriate target groups, showing signals of stimulus packages as the great efforts for economic growth.

For the investors, the empirical results prove that different sectors will have a different severity of COVID-19 impact. Thus, investors should diversify investment portfolios across both financial and non-financial sectors to reduce the risk of being affected by market volatility in future similar global-scale pandemics. Besides, since the market in pandemics can be extremely volatile, investors should remain calm, take a long view, and make investment decisions based on the firm's overall value rather than focus on day-to-day fluctuations.

7. Limitation

This study is subjected to potential limitations. Only five sectors of the Vietnam stock market are investigated. This study's findings do not reflect the whole impact of the COVID-19 pandemic and stimulus packages on other sectoral stock returns. The time frame is ended on June 30, 2020. Future researchers may extend the scope to more sectors, more duration with other emerging countries to observe the general patterns of sectoral stock returns during pandemics.

References

Alam, M. M., Wei, H., & Wahid, A. N. (2020). COVID-19 outbreak and sectoral performance of the Australian stock market: An event study analysis. *Australian Economic Papers*. https://doi.org/10.1111/1467-8454.12215

Al-Awadhi, A. M., Alsaifi, K., Al-Awadhi, A., & Alhammadi, S. (2020). Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns. *Journal of Behavioral and Experimental Finance*, *27*. https://doi.org/10.1016/j.jbef.2020.100326

Anh, D. L. T., & Gan, C. (2020). The impact of the COVID-19 lockdown on stock market performance: Evidence from Vietnam. *Journal of Economic Studies*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/JES-06-2020-0312

Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? *Research in International Business and Finance*, *54*. https://doi.org/10.1016/j.ribaf.2020.101249

Baek, S., Mohanty, S. K., & Glambosky, M. (2020). COVID-19 and Stock Market Volatility: An Industry Level Analysis. *Finance Research Letters* 37. https://doi.org/10.1016/j.frl.2020.101748

Chaudhary, R., Bakhshi, P., & Gupta, H. (2020). The performance of the Indian stock market during COVID-19. *Investment Management & Financial Innovations*, *17*(3), 133. http://dx.doi.org/10.21511/imfi.17(3).2020.11

Chen, C.-D., Chen, C.-C., Tang, W.-W., & Huang, B.-Y. (2009). The positive and negative impacts of the sars outbreak: A case of the taiwan industries. *The Journal of Developing Areas*, *43*(1), 281–293. https://doi.org/10.1353/jda.0.0041

Chowdhury, E.K., Khan, I.I. & Dhar, B.K. (2021). Catastrophic impact of COVID-19 on the global stock markets and economic activities. *Business and Society Review, Early View*. https://doi.org/10.1111/basr.12219

Customs of Vietnam. (2020). Companies exported medical masks in October 2020. Retrieved from https://www.customs.gov.vn/Lists/ThongKeHaiQuan/ViewDetails.aspx?ID=1874

Demirgüç-Kunt, A., Morales, A., & Ruiz Ortega, C. (2020). Banking sector performance during the COVID-19 crisis. *SSRN Electronic Journal*. https://dx.doi.org/10.2139/ssrn.3689789

Galloway, A. (2021, January 28). Analysis ranks the countries that handled COVID-19 best. *The Sydney Morning Herald.* Retrieved from https://www.smh.com.au/politics/federal/analysis-ranks-the-countries-that-handled-COVID-19-best-20210127-p56x3g.html

General Statistics Office. (2020). *Socio-economic situation in the second quarter and six months of 2020*. Retrieved February 14, 2020, from https://www.gso.gov.vn/en/data-and-statistics/2020/07/socio-economic-situation-in-the-second-quarter-and-the-first-6-beginning-months-of-2020/

Gherghina, Ștefan C., Armeanu, D. Ștefan, & Joldeș, C. C. (2020). Stock Market Reactions to COVID-19 Pandemic Outbreak: Quantitative Evidence from ARDL Bounds Tests and Granger Causality Analysis. *International Journal of Environmental Research and Public Health, 17*(18). https://doi.org/10.3390/ijerph17186729

Gil-Alana, L. A., & Monge, M. (2020). Crude oil prices and COVID-19: Persistence of the shock. *Energy Research Letters.* https://doi.org/10.46557/001c.13200

Goodell, J. W. (2020). COVID-19 and finance: Agendas for future research. *Finance Research Letters*, *35*. https://doi.org/10.1016/j.frl.2020.101512

Ha, B. T. T., Ngoc Quang, L., Mirzoev, T., Tai, N. T., Thai, P. Q., & Dinh, P. C. (2020). Combating the COVID-19 epidemic: Experiences from vietnam. *International Journal of Environmental Research and Public Health*, *17*(9). https://doi.org/10.3390/ijerph17093125

Ha, N. T., & Luong Thuy, H. D. (2020). Consumer behaviour towards vietnamese online shopping websites in the COVID-19 pandemic. *VNU Journal of Science: Economics and Business*, *36*(3). https://doi.org/10.25073/2588-1108/vnueab.4342

Harjoto, M. A., Rossi, F., & Paglia, J. K. (2020). COVID-19: Stock market reactions to the shock and the stimulus. *Applied Economics Letters*, 1–7. https://doi.org/10.1080/13504851.2020.1781767

Haroon, O., & Rizvi, S. A. R. (2020). COVID-19: Media coverage and financial markets behavior—A sectoral inquiry. *Journal of Behavioral and Experimental Finance*, *27*. https://doi.org/10.1016/j.jbef.2020.100343

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, *46*(6), 1251. DOI: 10.2307/1913827

He, P., Sun, Y., Zhang, Y., & Li, T. (2020). COVID–19's impact on stock prices across different sectors—An event study based on the Chinese stock market. *Emerging Markets Finance and Trade*, *56*(10), 2198–2212. https://doi.org/10.1080/1540496X.2020.1785865

Hobbs, J. E. (2020). Food supply chains during the COVID-19 pandemic. *Canadian Journal of Agricultural Economics/Revue Canadienne d'agroeconomie*, *68*(2), 171–176. https://doi.org/10.1111/cjag.12237

Huynh, T. D. (2020). The more I fear about COVID-19, the more I wear medical masks: A survey on risk perception and medical masks uses. medRxiv.

IMF (2021). World Economic and Financial Survey – World Economic Outlook Database.

Keane, M. P., & Neal, T. (2020). Consumer Panic in the COVID-19 Pandemic. *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.3600018

Keynes, J. M. (1964). *The general theory of employment, interest, and money* (1st Harvest/HBJ ed). San Diego: Harcourt, Brace, Jovanovich.

Khan, M. K. (2021). Importance of telecommunications in the times of COVID-19. *Telecommunication Systems*, *76*(1), 1–2. https://doi.org/10.1007/s11235-020-00749-8

La, V.P., Pham, T.H., Ho, M.T., Nguyen, M.H., P. Nguyen, K.L., Vuong, T.T., Vuong, Q.H. (2020a). Policy Response, Social Media and Science Journalism for the Sustainability of the Public Health System Amid the COVID-19 Outbreak: The Vietnam Lessons. *Sustainability*, *12*(7), 2931. https://doi.org/10.3390/su12072931

Liew, V. K.-S., and Puah, C.-H. (2020). Chinese Stock Market Sectoral Indices Performance in the Time of Novel Coronavirus Pandemic. *MPRA Paper.* Retrieved April 1, 2020, from https://mpra.ub.uni-muenchen.de/100414/

Liu, Q., Pan, X., & Tian, G. G. (2018). To what extent did the economic stimulus package influence bank lending and corporate investment decisions? Evidence from China. *Journal of Banking & Finance*, *86*, 177–193. https://doi.org/10.1016/j.jbankfin.2016.04.022

Loayza, N. V., and Pennings, S. (2020). Macroeconomic Policy in the Time of COVID-19. *Policy Notes. World Bank*. https://doi.org/10.1596/33540

Mazur, M., Dang, M., & Vega, M. (2021). COVID-19 and the march 2020 stock market crash. Evidence from S&P1500. *Finance Research Letters*, *38*. https://doi.org/10.1016/j.frl.2020.101690

Moskowitz, T. J., and Grinblatt, M. (1999). Do Industries Explain Momentum? *The Journal of Finance* 54, no. 4: 1249–90. https://doi.org/https://doi.org/10.1111/0022-1082.00146

MSCI. (2020). *Market classification*. Retrieved March 3, 2021, from https://www.msci.com/market-classification

Narayan P. K., Phan D. H. B. & Liu G., COVID-19 lockdowns, stimulus packages, travel bans, and stock returns, *Finance Research Letters*. https://doi.org/10.1016/j.frl.2020.101732

Nguyen Anh Duc, Nguyen Thi Thuy Tien, & Nguyen Huong Chi. (2020). Influence of crude oil prices and the COVID-19 epidemic on production and business activities of the Vietnam National Oil and Gas Group. *Petrovietnam Journal*, *11*, 26–36. https://doi.org/10.47800/PVJ.2020.11-03

Nguyen, H. V., Hoang, M. V., Dao, A. T. M., Nguyen, H. L., Nguyen, T. V., Nguyen, P. T., … Gilmour, S. (2020). An adaptive model of health system organization and responses helped Vietnam to successfully halt the COVID-19 pandemic: What lessons can be learned from a resource-constrained country. *The International Journal of Health Planning and Management*, *35*(5), 988–992. https://doi.org/10.1002/hpm.3004

Öztürk, Ö., Şişman, M. Y., Uslu, H., & Çıtak, F. (2020). Effects of COVID-19 outbreak on turkish stock market: A sectoral-level analysis. *Hitit Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *13*(1), 56–68.

Pham, H.-H., & Ho, T.-T.-H. (2020). Toward a 'new normal' with e-learning in Vietnamese higher education during the post COVID-19 pandemic. *Higher Education Research & Development*, *39*(7), 1327–1331. https://doi.org/10.1080/07294360.2020.1823945

Pham, V. K., Do Thi, T. H., & Ha Le, T. H. (2020). A study on the COVID-19 awareness affecting the consumer perceived benefits of online shopping in Vietnam. *Cogent Business & Management*, *7*(1). https://doi.org/10.1080/23311975.2020.1846882

Phan, D. H. B., & Narayan, P. K. (2020). Country responses and the reaction of the stock market to COVID-19—A preliminary exposition. *Emerging Markets Finance and Trade*, *56*(10), 2138–2150. https://doi.org/10.1080/1540496X.2020.1784719

PV (2020). *Update of COVID-19 situation in Vietnam by June 30, 2020*. Retrieved from http://baoquangninh.com.vn/dichbenhncov/202006/cap-nhat-tinh-hinh-dich-COVID-19-ngay-3062020-2489771/

Qin, M., Zhang, Y.-C., & Su, C.-W. (2020). The essential role of pandemics: A fresh insight into the oil market. *Energy RESEARCH LETTERS*. https://doi.org/10.46557/001c.13166

Raheem, A., Almayyahi, A., Mohammed, M.A., Alnoor, A., Abbas, S. & Khattak, Z.Z. (2021). *The Influence of InternationalAccounting Standards on the Economic Development Aftermath of COVID-19. International Journal of Innovation, Creativity and Change*, 15 (3), 111-125.

Rakshit, B., & Basistha, D. (2020a). Can India stay immune enough to combat COVID-19 pandemic? An economic query. *Journal of Public Affairs*, *20*(4), e2157. https://doi.org/10.1002/pa.2157

Ramelli, S., & Wagner, A. F. (2020). What the stock market tells us about the post-COVID-19 world. *Nature Human Behaviour*, *4*(5), 440–440. https://doi.org/10.1038/s41562-020-0869-y

Rizou, M., Galanakis, I. M., Aldawoud, T. M. S., & Galanakis, C. M. (2020). Safety of foods, food supply chain and environment within the COVID-19 pandemic. *Trends in Food Science & Technology*, *102*, 293–299. https://doi.org/10.1016/j.tifs.2020.06.008

Rizvi, S. A. R., & Arshad, S. (2018). Understanding time-varying systematic risks in Islamic and conventional sectoral indices. *Economic Modelling*, 70, 561-570. https://doi.org/10.1016/j.econmod.2017.10.011.

Rizwan, M. & Ahmad, N. (2020). *The Role of Channel Integration in Customer Movement from Offline Channel to Online Channel in a Multichannel Environment. International Journal of Innovation, Creativity and Change*, 14 (10), 63-79.

Sharma, V., Majee, C., Kaushik, R., Sharma, D., Kumari, S., Sawanny, R., Abdali, B. (2020). Corona virus outbreak and it's impact on the global pharmaceutical industries. *Journal of Applied Pharmaceutical Sciences and Research*, 11–14. 10.31069/japsr.v3i3.3

Statistics Times (2021). https://statisticstimes.com/economy/countries-by-projected-gdp-growth.php

Tien Long (2020). Difficulties and drawbacks in implementing the COVID-19 support packages. *Tuoi Tre News.* Retrieved October 20, 2020, from https://tuoitre.vn/co-kho-khan-vuong-mac-trong-chi-tra-ho-tro-cac-goi-COVID-19-20201020113231719.htm

Topcu, M., & Gulal, O. S. (2020). The impact of COVID-19 on emerging stock markets. *Finance Research Letters*, *36*, 101691. https://doi.org/10.1016/j.frl.2020.101691

Tran, T. P. T., Le, T. H., Nguyen, T. N. P., & Hoang, V. M. (2020). Rapid response to the COVID-19 pandemic: Vietnam government's experience and preliminary success. *Journal of Global Health*, *10*(2). 10.7189/jogh.10.020502

Udah, H. & Francis.A. (2021). *COVID-19: Challenges, Opportunities, and the Future of Social Work. International Journal of Innovation, Creativity and Change*, 5 (1), 57-74.

UN Vietnam (2020). *UN Assessment on Economic Impacts of COVID-19 and Strategic Policy Recommendation for Vietnam*. https://vietnam.un.org/en/95127-un-assessment-social-and-economic-impact-COVID-19-vietnam

Wang, Y., Zhang, D., Wang, X., & Fu, Q. (2020). How does COVID-19 affect china's insurance market? *Emerging Markets Finance and Trade*, *56*(10), 2350–2362. https://doi.org/10.1080/1540496X.2020.1791074

White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, *48*(4), 817. 10.2307/1912934

Wolf, M. (2020). Emerging Markets Outlook: Present tense, future tense. *Deloitte Insights*. Retrieved September 24, 2020, from https://www2.deloitte.com/us/en/insights/economy/emerging-market-economies-coronavirus-pandemic.html

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed). Cambridge, Mass: MIT Press.

World Bank (2020). *GDP per capita (current US$ - Vietnam)*. Retrieved from https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=VN

World Bank. (2020a). Taking Stock, July 2020: What Will Be the New Normal for Vietnam? The Economic Impact of COVID-19.

World Bank. (2020b). The global economic outlook during the COVID-19 pandemic: A changed world. Retrieved March 3, 2021, from World Bank website: https://www.worldbank.org/en/news/feature/2020/06/08/the-global-economic-outlook-during-the-COVID-19-pandemic-a-changed-world

Worldpanel Kantar. (2020). FMCG Monitor June 2020.

Zhang, D., Hu, M., & Ji, Q. (2020). Financial markets under the global pandemic of COVID-19. Finance Research Letters, 36, 101528.

Zheng, C., & Zhang, J. (2021). The impact of COVID-19 on the efficiency of microfinance institutions. *International Review of Economics & Finance*, *71*, 407–423. 10.1016/j.iref.2020.09.016

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 35-46
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.343

The Relevance of Good Corporate Governance Practices to Bank Performance

Muhammad M. Ma'aji[1], Ediri O. Anderson[1], Christine G. Colon[1]

[1] CamEd Business School, Phnom Pehn, Cambodia

Correspondence: Muhammad M. Ma'aji, CamEd Business School, No. 64 Street 108, Phnom Penh Cambodia. Tel: +855 9625 96004. E-mail: muhammad@cam-ed.com

Abstract
The purpose of this paper is to examine how corporate governance instruments impact firm value in the context of Cambodian banks. This paper considers foreign and domestic-owned banks in Cambodia. This study opts for a balanced sample of foreign and domestic owned banks for the period 2014-2018. Panel data regression is adopted for estimation of main results. The suitable model, i.e. fixed and random effect model is selected using the Hausman specification test where the result shows that the random effect model using generalized least square (GLS) regression is more suitable for the analysis. The findings show that Cambodian banks are having a substantially higher percentage of NEDs on their board, high implementation of governance procedures on board committees where on average the banks are having more than the required two board committees (audit and risk committees) as required by the Prakas on the governance of banks by National Bank of Cambodia. The average board size is around 8 members of which at least 3 members are having a postgraduate degree or a professional qualification. Policymakers need to improve on their supervisory function as the majority of the domestic and some foreign banks do not disclose their annual reports on their company website as required by the Prakas on Corporate Governance of Banks operating in Cambodia. Moreover, amendments should be made to the current corporate governance code for financial institutions as there are no explanatory notes that guide companies and therefore, the current guideline is open to individual and subjective interpretation.

Keywords: Board Size, Board Independence, Board Meetings, Corporate Governance

JEL: G30, G39

Introduction

Cambodia has maintained strong economic growth over the last two decades, achieving on average 7 percent GDP growth. This remarkable achievement to some extent is linked to improving corporate governance practices among businesses in Cambodia especially the financial institutions leading to increase public confidence in the banking system among businesses, depositors, investors, business partners, and attracting more foreign direct investment (FDI) (Sokhorng, 2016). Financial institutions such as commercial banks are considered to be the engine growth

of economic development and sustainability of many countries as they give out credit to businesses and individuals that will stimulate economic activities (Berger, Klapper, Peria & Zaidi, 2008; Cheng & Degryse, 2010; Andrianova, Demetriades & Shortland, 2008). Commercial banks play a central role within the economy as they attract citizens' savings in the form of deposits, offer means of payment for goods and services, and finance the development of businesses. Banks are subject to stricter regulations in comparison with other entities because they are responsible for protecting the rights of the depositors, ensuring the stability of the payment system, and reducing unsystematic risk. Therefore, weak and ineffective corporate governance mechanisms in the banking sector can affect banks' performance and the economy as a whole (Allen, Qian & Qian, 2005; Zakaria et al., 2018). Hence, the implementation of strong governance practices in the sector is essential to have effective and robust bank systems and maintain a high level of public confidence in the system (BCBS, 2006; Burlaka, 2006; Gebba, 2015; Levine, 2013; Zakaria et al., 2018).

Good corporate governance practices make companies more accountable and transparent to their various stakeholders by balancing the interests of all stakeholders, including those to whom the company has legal, contractual, social, and market-driven obligations as well as to non-shareholder stakeholders, including employees, investors, creditors, suppliers, local communities, customers, and policymakers (Albrecht, 2016; Cheng & Degryse, 2010; Demitriades et al., 2008; OECD, 2015). Effective governance contributes to the development and increased access to capital by encourages new investments, boosts economic growth, and provides employment opportunities. For the banking sector specifically, improved corporate governance will boost the confidence of investors, reduces the risk of capital outflow from the economy, and at the same time, increases the flow of capital into the economy (Pagano & Volpin, 2004; Shleifer & Vishny, 1997; Stein & Daude, 2001; Talamo, 2009; Talamo, 2011). The degree of adherence to the basic principles of corporate governance by the banks at the corporate level enhances the confidence of shareholders and potential investors require access to regular and reliable information in detail for them to assess the management. Therefore, good corporate governance in the banking sector will help better manage risk, enhance internal control, and ensuring sustainable growth for the sector.

A considerable number of studies have been conducted before and after the global financial and banking crisis of 2007–2008 to enhance the understanding of bank governance and to assessed specific features of banks and their influence on the corporate governance mechanism (Gebba, 2015; Kirkpatrick, 2009; Laeven, 2013; Levine, 2004; Marcinkowska, 2012; Macey and O'Hara, 2003; Maxfield et al., 2018). However, most of the existing literature mainly seeks evidence from the developed countries. Therefore, there is still room for contribution to the literature on the effectiveness of corporate governance mechanisms in the banking sector with evidence from developing countries such as Cambodia. Furthermore, since the implementation of the corporate governance code for banks and other financial institution in 2008 namely "Prakas on Governance in Banks and Financial Institutions" (Corporate Governance Code on Banks) by the National Bank of Cambodia (NBC), there is only one empirical study that investigates governance practices in the banking sector (Cheaseth, Samreth, & Sethyraon, 2010). Therefore, more studies are needed to investigate the current governance practices in the banking sector and assess how the practices affect banks' performance. Additionally, comparing the level of corporate governance practice in Cambodia to other ASEAN countries, there is still a need for improvement in terms of corporate transparency, accountability, shareholder protection mechanisms, and improve risk management in Cambodia (Sokhorng, 2016). Without transparency and accountability that ensures good governance, many corporations might go through considerable failures that will surely undermine the general economic development of a country (Jensen, 2001).

The objectives of this study are to investigate the impact of corporate governance instruments on firm performance by using an appropriate proxy of return on asset (ROA) for an emerging economy. The current study makes several contributions to the literature. It provides evidence of how corporate governance affects bank performance by using an appropriate performance proxy. Furthermore, it makes a practical contribution to the management of these banks and the policymakers at large. Therefore, the study will provide new empirical evidence on the influence of corporate governance on bank performance.

Theoretical and empirical background

Managers have both the ability to commit the organization to any form of contracts and transactions they deem appropriate as they act on behalf of the shareholders. As such there is a need for good corporate governance mechanisms to ensure that the managers are responsible and accountable to shareholders in protecting their interest, hence reducing conflict of interest. A sound and effective governance system in an organization will have an impact on the long-term sustainability of the business and generate greater wealth for the shareholders. Managers should be good stewards whose behaviors are aligned with the objectives of their principals (Davis, Schoorman & Donaldson, 1997; Jensen & Meckling, 1976).

Extensive studies have investigated the relevance of good corporate governance mechanism, such as board tasks, duality, executive compensation, board size and board independence, board committee, and firm value in developed countries for instance, (Coles and Hesterly, 2000; Daily & Dalton, 1994; Elsayed, 2007; Jensen, 1993; Yermack, 1996). However, in frontier markets, there is scant literature to investigate the impact of good corporate governance instruments on firm value, such as the study by Arora and Sharma (2016). To achieve the objectives of this study, further discussions related to the literature and hypothesis development process were discussed in the following section.

Board size is the number of directors on the board. Finding the right board size that affects its capacity to function efficiently and effectively has been a matter of continuing debate (Dalton, Daily, Johnson & Ellstrand, 1999; Hermalin & Weisbach, 2003; Yermack, 1996). The number of directors on a company's board is proved to be a significant indicator of firms' performance. A larger board can increase firms' performance (Anderson & Reeb, 2003; Coles et al., 2008; Klein, 1998). Large board size is associated with having quality advice and counsel to the CEO, thus better performance (Chaganti et al. 1985; Dalton et al. 1999). Moreover, a company with a large board would have access to diverse skills, expertise, and experience from different members to help counsel the CEO effectively on investment opportunities and business improvement (Eisenberg, Sundgren, & Wells, 1998). Having a large board size also enable companies to have access to more resources and information that would assist the management in formulating strategies (Lehn, Sukesh, & Zhao, 2004).

However, on the contrary, some literature finds that board size smaller boards have a stronger relationship between firm performance (Guest, 2009; Jensen, 1993; Wu, 2004; Yermack, 1996). A large number of directors on board is difficult to coordinate. Some directors may not contribute and may tag along as free-riders which reduces the efficiency of the board. A large board could also result in less meaningful discussion, since expressing opinions within a large group is generally time-consuming and difficult (Dalton et al., 1999; Lipton & Lorch, 1992). Instead, Jensen (1993) recommended a small board because of efficiency in decision making due to greater coordination and lesser communication problems. A smaller board of directors is more effective in monitoring and controlling activities as strategic decisions could be made faster (Certo, Richards, & Dalton, 2006).

H1: There is a relationship between board size and firms' performance.

Studies have shown that the presence of independent non-executive directors (NEDs) on companies' boards increases overall performance (Dowell et al., 2011; Elloumi & Gueyie, 2001; Guillet et al., 2013; Krause & Semadeni, 2013; Ong & Wan, 2001). This is because NEDs act as business advisers to the board of companies and as well as acting as watchdogs to ensure that the executive directors (EDs) live to their primary responsibilities of maximizing shareholder's wealth. According to Nowak and McCabe (2008), the presence of NEDs on the board would provide a safeguard for a balance of power or management relationship and will provide a variety of independent thinking, and a majority of them could reduce the dangers of 'group think.' NEDs can potentially assist the company during a crisis because the company can have access to useful resources and information and can improve relationships with the external environment facilitate by outside directors (Dowell et al., 2011; Pfeffer & Salancik, 1978). The presence of NEDs would benefit the company to have better access to external resources and management competencies as in some cases the independent directors can replace the managers when necessary (Hillman & Dalziel, 2003; Weisbach, 1988).

However, Kakabadse, Yang, and Sanders (2010) narrated the effectiveness of NEDs in China is determined by their formal independence, information accessibility, incentives provided, and competency. However, they found out that the NEDs system in China was weak because there was too much intervention of controlling shareholders and there was a lack of understanding of the functions of NEDs. Similarly, Wooi and Ming (2009) indicated that the NEDs have failed in their internal monitoring role in Malaysian Government Linked Companies (GLCs).

H2: There is a relationship between independent non-executive directors and firms' performance.

According to Fama and Jensen (1983) boards of directors have the fiduciary responsibility of acting on behalf of the shareholders. To effectively monitor executive management and to perform their fiduciary role, the board delegates most of the responsibilities to committees (Adams, 2003; Guo & Masulis, 2015). Some of these committees are formed ad-hoc for a specific task, while some are standing committees delegated with specific and narrowly defined functions. The committees are composed of expertise board members who technically deal with specialized issues that the board as a whole will waste much time handling. Studies have shown that the establishment of a board committee facilitates effective governance (Adams, 2003; Klein, 1998). The number and functions of these committees vary across firms, and roles are sometimes combined. For instance, all firms in the S&P 500 sample have at least one standing committee, with the average firm having three committees. The most common among these committees are the audit committee, the nomination committee, and the compensation committee.

Empirical evidence suggests many board important decisions are made at the board committees and then the recommendations of these committees are placed before the full board for deliberation (Klein, 1998). The establishment of board committees is expected to have a positive effect on corporate performance, but relatively little empirical research has been conducted in this area (McMullen, 1996). There is some empirical evidence on the positive relationship between the independent audit committee and reliable financial reporting (McMullen, 1996). Nevertheless, Klein (1998) could not detect any relationship between the presence of oversight board committees, except finance and investment committees, with the firm performance of the US companies. Similar to their US counterparts, Vafeas and Theodorou (1998) and Dulewicz and Herbert (2004) could not detect any significant relationship with the UK sample.

In Cambodia, commercial banks are required to have only two committees namely, an audit and risk committee by the Prakas on Governance in Bank and Financial Institution of National Bank of Cambodia of 2008. Furthermore, the Prakas also encouraged commercial banks to have a remuneration or a nomination committee (which lies at the bank's discretion). For the sample banks selected, almost all of the firms are having the required audit and risk committee, but not many of them have a remuneration committee or a nomination committee.

H3: There is a positive relationship between board committees and firms' performance.

Board diversity suggests that boards should reflect the structure of the society and appropriately represent the gender, ethnicity, and professional backgrounds and experiences that would allow the work of the board to be undertaken most efficiently. Boards are concerned with having the right composition to provide diverse perspectives (Milliken & Martins, 1996; Biggins, 1999). Setting strategic directions, making strategic choices, and supervising management decisions are among the key responsibilities of the board of directors. Doing so requires each board member to be fully equipped with management knowledge such as finance, accounting, marketing, information systems, legal issues, and other related areas to the decision-making process. This requirement implies that the quality of each board member will contribute significantly and positively to management decisions which are then translated into the firm's performance (Nicholson & Kiel, 2004; Fairchild & Li, 2005; Adams & Ferreira, 2007).

Moreover, it is argued that board members with older age will have much more experience compared to a younger age director. They can be valuable resources to firms given their wealth of business experience and professional connections accumulated throughout their long careers. Moreover, since they are most likely to have retired from their full-time jobs, they should have more time available to devote to their board responsibilities (Masulis, Wang,

Xie & Zhang, 2018). Thus, this experience is expected to positively contribute to the better performance of a firm. However, older-age board member appears to be more aggressive and dictatorial with decisions. These characteristics of board members may result in risky decision-making, which may undermine a firm's performance (Carlson & Karlsson, 1970). Older-age directors can face declining energy, physical strength, and mental acumen, which can undermine their monitoring and advisory functions. They can also have less incentive to build and maintain their reputation in the director labor market, given their dwindling future directorship opportunities and shorter expected board tenure as they approach normal retirement age (Masulis et al., 2018). The preceding discussion leads us to formulate the following hypotheses:

H4: There is a positive relationship between the board's educational level and firms' performance.

H5: There is a positive relationship between the board's level of experience and firms' performance.

Methodology

Data

To carry out the present study, the selected horizon period for the study is from 2014 to 2018. Since the study focuses on investigating the relevance of good corporate governance practices to firm value by comparing foreign and domestic owned commercial banks in Cambodia, the study initially includes all the 42 commercial banks operational during the mentioned period under the supervision of the National Bank of Cambodia (NBC). Subsequently, information on these banks was obtained from the following databases:

- From the NBC database, corporate information such as banks' profile information, the balance sheets, and income statements among other records of all commercial banks in Cambodia was obtained.
- From the annual financial statements reports that corporate governances report issued by the different banks. Information such as the number of total directors, the number of independent directors, and the number of female directors was obtained. With all this information in hand, the study approximates the size of the board by the number of directors that it contains; estimate the independence through the relative importance of the number of independent non-executive directors relative to the total number of directors on the board.

To form part of the sample, the bank's data must be available during the period of study. Banks with unavailable financial performance data or governance data were excluded. After vetting through the availability of data, the number of commercial banks that make up the final sample consists of a balanced panel data of 35 firms with 491 observations.

Model

The model used in this study is adopted from the previous studies of Bhat, Chen, Jebran, and Bhutto (2018) and Rashid and Islam (2013). The data set in this study contains pooled observations on cross-section and time-series data. To estimate such a pooled data model, we use the panel data techniques which may be written as:

$$Y_{it} = \alpha + X_{it}\beta + \delta i + \lambda_t + \mu_{it};\ i = 1, 2, \ldots\ldots, N;\ \text{and}\ t = 1, 2, \ldots\ldots, T \qquad (1)$$

where;

Y_{it} is the dependent variable;

α represent the overall constant in the model;

X_{it} is a k-vector of regressors;

δi represent cross-section specific effects;

λ_t represent period-specific effects;

μ_{it} is the error terms;

i is the number of cross-section units (firm); and

t is the number of periods.

A panel regression models have been formulated to examine the relationship of corporate governance mechanism and firm value. Thus equation (1) can be rewritten as follows:

$$Y^{J}_{it} = \beta_0 + \beta_1 BDS_{it} + \beta_2 NED_{it} + \beta_3 BCM_{it} + \beta_4 BED_{it} + \beta_5 BEP_{it} + \beta_6 LTA_{it} + \beta_7 EFF_{it} + \alpha_i + \lambda_t + \mu_{it} \quad (2)$$

where;

Y denotes firm performance;

j ROA; and

i 2014, 2015, 2016, 2017 and 2018.

Description of Variables

In the multiple regression models, the firm performance is measure as return on asset (ROA) is the dependent variable, board size, non-executive director, board committees and board member experience are explanatory variables, and firm size as control variables. Board size (BSZ) is the number of executives and non-executive directors on the board, non-executive director (NED) is the proportion of non-executive directors on the board at the year-end, board committee (BCM) is a dummy variable that equals 1 if the bank is having more board committees more than the required two board committees by NBC, otherwise zero, board experience (BEP) is the average age of all directors on the board and board education level (BED) is the number of directors with postgraduate degrees. Firm-specific characteristics which are considered to affect firm performance such as firm size (LTA) and firm efficiency (EFF) have also been incorporated into the model. The definition of variables in the panel regression models is given in table 1.

Table 1: Variables measurement

Variables	Definition	Measurement
Dependent variables		
ROA	Return on asset	Net profit for the year to total assets.
Explanatory variables		
BSIZE	Board size	Many executive and non-executive directors on the board.
NEDs	Non-executive director	The proportion of Non-executive directors on the board at the year-end.
BEXP	Board member's working experience	The average age of all directors on the board.
BEDU	Board member's educational level	Several directors with postgraduate degrees or professional qualifications.
BCMT	Board committees	Dummy variables that equal 1 if the bank is having more board committees more than the required two board committees by NBC, otherwise zero.
Control variables		
EFFC	Bank's efficiency	The ratio of interest income plus non-interest income to the total asset.
LTA	Bank size	Natural logarithm of the book value of total assets.

Board size (BSIZE), Non-executive directors (NEDs), Board committees (BCMT), Board member education (BEDU), Board member experience (BEXP), Natural logarithm of the total asset (LTA), Bank's efficiency (EFFC).

Statistical Analysis

A descriptive analysis was carried out to understand the mean differences of the variables used in the samples. Then, diagnostic tests were carried out, such as the Pearson correlation test is conducted among the explanatory variables to check for multicollinearity (Bhat et al., 2018; Rashid & Islam, 2013). Panel ordinary least square with random-effects and fixed-effects is applied on two data sets to investigate the relationship between dependent and

independent variables. Suitable panel regression for both data sets is determined based on the Hausman test (Hausman, 1978) and Breusch–Pagan test (Breusch & Pagan, 1979). The Hausman test can help you to choose between a fixed-effects model or a random-effects model. The null hypothesis is that the preferred model is random effects; The alternate hypothesis is that the model has fixed effects. The Hausman test also generates a chi-squared probability and if that value is greater than the significant value (5%) then the null hypothesis is accepted (Chmelarova, 2007). This is important when analyzing panel data to achieve robust results for variables that have been omitted or not considered. The econometric model used in this study has been used in many previous studies such as by Arora and Sharma (2016) and Bhat et al. (2018).

Results and Discussions

Descriptive Analysis

Table 1 present the descriptive statistics for the variables used, grouped by the characteristics of the board analyzed, the performance of the firm, and other variables of interest that will be used as control variables. The statistics for the sample firms, including mean, standard deviation, and standard error of the mean for all banks in the sample. The mean value of ROA is 0.014, on average, the sample banks have a board size of 7.68 of which around 52.33 percent of the directors are non-executive directors. It can therefore be established that banks in Cambodia also have a substantially higher percentage of NEDs on their board, which supports the idea of agency theory by reducing the conflict of interest that insider directors may have. Based on the mean value, it is likely that Cambodian banks will establish more board committees high than the required two committees namely audit and risk committee as per the Prakas on governance for commercial banks. Consequently, a conclusion can be made that there is a high implementation of governance procedures of this mechanism. Furthermore, on average, 2.57 of the board members are having a postgraduate degree and the average experience of the board members is around 42.24 years. The mean value of the ratio of non-performing loans to total loans is 34.97 percent while the mean value of the bank size is 14.33.

Table 2: Summary of the descriptive statistics.

					Collinearity Statistics	
Variables	**Mean**	**Std. Dev.**	**Std. Error Mean**	**Prob.**	**Tolerance**	**VIF**
ROA	0.0143	0.014	0.001	0.002***	-	-
BSIZE	7.6827	3.097	0.257	0.5084	0.847	1.180
NEDs	0.5233	0.233	0.019	0.038**	0.834	1.200
BCMT	0.5893	0.495	0.041	0.0813*	0.941	1.062
BEDU	2.5724	0.963	0.080	0.1580	0.850	1.177
BEXP	42.241	10.01	0.832	1.6435	0.902	1.108
LTA	14.333	1.622	0.135	0.2611	0.835	1.198
EFFC	0.3497	0.952	0.079	0.016***	0.928	1.078

*, **, *** significant at 10 percent, 5 percent, and 1 percent levels respectively. Board size (BSIZE), Non-executive directors (NEDs), Board committees (BCMT), Board member education (BEDU), Board member experience (BEXP), Natural logarithm of a total asset (LTA), Bank's efficiency (EFFC). The number of observations is 145.

Moreover, a Pearson correlation test was employed to investigate the relationship between the independent variables, and the results are summarized in Table 3. The findings show that the correlations among the variables are relatively low ranging from -0.007 to 0.162. To further verify that multicollinearity is not a problem in this study, a variance inflation factor (VIF) was reported in Table 2. If the variables have VIF values greater than 10, or tolerance values lower than 0.10, then they were considered to have multicollinearity problems (Gujarati, 2003). Since all the variables had VIF values ranging from 1.062 to 1.200 shown in table 2, hence, the results suggest that there was no multicollinearity problem in the study. Therefore, all the independent variables can be used within the regression model (Gujarati & Porter, 2009).

Table 3: Pearson correlation analysis

	BSIZE	NEDs	BCMT	BEDE	BEXP	LTA	EFFC
BSIZE	1						
NEDs	-0.288**	1					
BCMT	-0.083	-0.102	1				
BEDU	0.138	-0.122	-0.074	1			
BEXP	-0.043	0.162	-0.180*	-0.081	1		
LTA	0.089	0.164*	-0.036	-0.324**	0.160	1	
EFFC	0.120	0.088	-0.007	0.125	-0.153	-0.019	1

*, **, *** significant at 10 percent, 5 percent, and 1 percent levels respectively. Board size (BSIZE), Non-executive directors (NEDs), Board committees (BCMT), Board member education (BEDU), Board member experience (BEXP), Natural logarithm of the total asset (LTA), Bank's efficiency (EFFC).

Furthermore, to examine which model is appropriate, the study conducted Hausman and Breusch–Pagan test on the data set. The results from the Hausman test run emphasized the use of the random-effects model since the chi^2 (7) is 12.88 with a prob > Chi^2 = 0.075 is greater than 0.05, as such the null hypothesis confirms that the preferred model is the random-effects model. Similarly, the result of the Breusch–Pagan test shows a $chibar^2$ (01) of 21.26 with a prob > $chibar^2$ of 0.000, thus supporting the use of a random-effect model. Therefore, this study will run the random-effects model using generalized least square (GLS) regression to examine the relevance of good corporate governance practices on bank performance. The random-effects model refers to a model with non-different (constant) slope but with varying or different intercepts based on cross-section (in this case is the banks) randomly instead of in a fixed manner (Gujarati, 2004).

The results of the GLS regression are shown in table 4. The result shows that there is enough evidence at a statistical significance level of 5 percent for BEDU to have a positive impact on a bank's performance. This means that an increase of one board member with a postgraduate degree or professional qualification is expected to increase the performance of the banks on average by 0.216. The finding supports hypothesis 4 and consistent with previous studies (Adams & Ferreira, 2007; Berger, Kick & Schaeck, 2014; Fairchild & Li, 2005; Nicholson & Kiel, 2004) emphasizing that a higher level of board member's qualification will enable them to steer the company in the right direction by making better corporate decisions. Setting strategic directions, making strategic choices, and supervising management decisions are among the key responsibilities of the board of directors. Therefore, a board member should be fully equipped with business management knowledge such as finance, accounting, marketing, information systems, legal issues, and other related areas relevant to the decision-making process (Berger et al., 2014; Khanchel, 2007; Nicholson & Kiel, 2004). This requirement implies that the quality of each board member will contribute immensely to the management decisions which if successful will then translated into the firm's performance.

Table 4: Results of Random-effect GLS Regression Model

Variables	Coefficient	Std. Error	t-statistics	Prob.
Constant	-0.030	0.01464	-2.268	0.025**
BSIZE	-0.033	0.00058	-0.371	0.071*
NEDs	0.066	0.00783	0.739	0.461
BEXP	0.085	0.00174	1.020	0.309
BEDU	0.216	0.01188	2.446	0.016***
BCMT	0.085	0.00217	0.994	0.032**
EFFC	0.225	0.01153	2.532	0.012***
LTA	0.096	0.00077	1.136	0.258
Model Test Results				
R^2	0.3561			
Adjusted R^2	0.2156			
Wald Chi^2	7.79*			
sigma_u	0.0245			
sigma_e	0.0116			
rho	0.8150 (fraction of variance due to u_i)			

*, **, *** significant at 10 percent, 5 percent, and 1 percent levels respectively. Board size (BSIZE), Non-executive directors (NEDs), Board committees (BCMT), Board member education (BEDU), Board member experience (BEXP), Natural logarithm of the total asset (LTA), Bank's efficiency (EFFC).

Furthermore, the findings show that BCMT has a positive impact on bank performance and is statistically significant at a 5 percent level. The result indicates an increase in board committees will result in a higher bank performance on average by 0.085. The result supports hypothesis 3 and is in line with previous studies (Lam & Lee, 2012; McMullen, 1996; Sanchez, Odriozola & Luna, 2020) where empirical findings reveal that board committee (especially nomination committee) is positively related to firm performance. Having several board committees significantly improving banks' accountability and transparency by reducing individual free-riding and enabling outside directors to perform their monitoring duties more effectively through greater separation from management (Chen & Wu, 2016). It will also reduce the CEO's bargaining power as the committee members especially outsider directors be insulated from the CEO's influence. Moreover, having some committees through the process of decentralization will allow for knowledge specialization (De Kluyver, 2009) thereby benefiting firms because the monitoring and advising tasks of boards are complex and require firm-specific knowledge (Kim et al., 2014). Having many board committees will bring about specialization and allow for a more efficient task allocation to directors, leading to task-division efficiency and consequently improving the firm's performance.

Additionally, BSIZE is statistically significant and negatively correlated with bank performance. The result indicates that a smaller board of directors is associated with higher bank performance. A decrease of one board member could potentially increase bank performance by 0.033. The finding is in line with hypothesis 1 and consistent with previous studies (Bhat et al., 2018; Hermalin & Weisbach, 2003; Khanchel, 2007; Ma'aji, Abdullah & Karen, 2019; Ma'aji, Abdullah & Karen, 2018). Smaller board sizes are better than larger ones that may be the plague with free rider and monitoring problem and therefore are expected to experience fewer communication and coordination problems, thus improving performance (Hermalin & Weisbach, 2003; Khanchel, 2007; Ma'aji et al., 2019; Ma'aji et al., 2018). From the sampled banks, some of the banks are having board member s ranging from 17 to 15 people. This could potentially result in less meaningful discussion, since expressing opinions within a large group is generally time-consuming and difficult (Dalton et al., 1999; Lipton & Lorch, 1992). Therefore, a smaller board would be more effective in monitoring and controlling activities as strategic decisions could be made faster (Certo, Richards, & Dalton, 2006). Ma'aji et al. (2019) also found that smaller board size is associated with reducing the probability of bankruptcy among companies. However, NEDs and BEXP are both having a positive impact on bank performance but not statistically significant.

Moreover, control variables bank efficiency (EFFC) has a positive and statistically significant relationship with a performance at a 5 percent level. This suggests that the higher the efficiency of the banks, the higher the bank performance. Bank size (LTA) as a control variable is having a positive relationship with firm performance but the correlation is not statistically significant. However, through the correlation matrix, various governance factors are having a positive relationship such as BSIZE, NEDs, and BEXP with the size of the bank. For example, it is widely accepted that larger firms are more likely to have larger boards (see, for example, Cicero, Wintoki, & Yang, 2008).

Conclusion

This section summarized the main findings of the research. The study has conducted empirical research on the relevance of good corporate governance practices to bank's performance. The research contributions are two folds. First, the descriptive analysis of the bank dataset documents several interesting features about the corporate governance practices among banks in Cambodia. Over the study period between 2014 to 2018, banks in Cambodia have seen on average an increase in profitability. Furthermore, banks are having a substantially higher percentage of NEDs on their board, there is a high implementation of governance procedures on board committees were on average banks in Cambodia are having more than the required two board committees (audit and risk committees) as per required by the Prakas on the governance of banks by NBC. The average board size is around eight members of which at least three members are having a postgraduate degree or a professional qualification.

Secondly, GLS regression analysis sheds light on the influence of corporate governance practice on bank performance. The study finds that having a board member with a postgraduate degree or a professional qualification is expected to increase bank performance. Similarly, having some number of board committees will result in a higher bank performance while a smaller board size is associated with higher bank performance. Non-executive directors and the experience of a board member are found to have a positive impact on bank performance but not statistically significant.

Recommendations

Through the cause of this study, we observed that some banks in Cambodia are subsidiaries of a conglomerate and they use the same directors from those businesses that are unrelated to the bank industry. Therefore, the directors lack experience in the new venture and will not contribute to a meaningful board room discussion as it not their area of expertise. For example, some executive board members are medical doctors, engineers by profession and lack any professional qualification that is related to banking which could have helped them to contribute more to board deliberations. Policymakers will have to improve on their supervisory function and role as the majority of the domestic and some foreign banks are not disclosing their annual reports on their respective company website as required by the Prakas on CG of Banks. This will not enable shareholders, investors, and the bank's creditor to make timely and inform investment decisions. More amendments should be made to the current CG Code on financial institutions as the guidelines provided are too general and lack explanatory notes that would interpret and guide banks towards successful compliance and therefore open to individual interpretations and encourage subjective interpretation of the Code. Lawton and Nestor (2010) argued that very few jurisdictions had devised extensive bank-specific governance requirements.

Furthermore, there is also a need for the foreign banks to also implement the local CG requirements to improve consistency and uniformity among the banks in Cambodia. Policymakers should develop a policy that will require foreign banks in Cambodia to follow the strictest rules of governance between Cambodia or the home country of the parent company (and they should disclose information on the CG of their country on their website). Currently, the Prakas did not recommend best practices of hiring executives and NEDs to the board. Therefore, there should be recommendations of best practices for the directors' education qualifications and relevant experiences.

This paper opens many potential future avenues for research. In particular, more empirical and theoretical work is needed to understand information sharing in the context of the board of directors. Besides, it would be desirable to understand why specific committees, such as the strategy and technology committee, are rarely used and how they may impact performance. Moreover, it would be interesting to further examine how the use of board committees can lead to independent decision-making, lowering agency costs among others.

Acknowledgment
This research is fully supported by CamEd Business School, Phnom Pehn Cambodia, therefore the authors wish to express their gratitude to CamEd Business School for the financial support.

References

Adams, R. (2003). What do boards do? Evidence from board committee and director compensation data. Unpublished working paper. Federal Reserve Bank of New York, New York, NY.
Albrecht, W. (2016). Why good corporate governance is so important. BYU Wheatley Institution, Working Paper, https://wheatley.byu.edu/why-good-corporate-governance-is-so-importan t/
Andrianova, S., Demetriades, P., & Shortland, A. (2008). Government ownership of banks, institutions, and financial development. Journal of development economics, 85(1-2), 218-252.
Arora, A., & Sharma, C. (2016). Corporate governance and firm performance in developing countries: evidence from India. Corporate governance.
BCBS (2006) Enhancing Corporate Governance for Banking Organisations. Basel: Bank for International Settlements.

Berger, A.N., Kick, T., Schaeck, K. (2014). Executive board composition and bank risk-taking. Journal of Corporate Finance, 28, 48-65.

Berger, A. N., Klapper, L. F., Peria, M. S. M., & Zaidi, R. (2008). Bank ownership type and banking relationships. Journal of Financial Intermediation, 17(1), 37-62.

Bhat, K., Chen, Y., Jebran, K., & Bhutto, N. (2018). Corporate governance and firm value: a comparative analysis of state and non-state-owned companies in the context of Pakistan. Corporate Governance: The International Journal of Business in Society

Burlaka, M. V. (2006) 'Bank Corporate Governance: The Emerging Ukrainian Market Compared to International Best Practices,' Fordham Journal of Corporate & Financial Law, 11(4), 851–891.

Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. Econometrica: Journal of the Econometric Society, 1287-1294.

Cheaseth, S., Samreth, S., & Sethyraon, I. (2010). Board governance regulation, practices and their relationships with financial performance: Cambodian bank and microfinance institution context. The First Annual Online International Conference on Corporate Governance & Regulation in Banks, Sumy, Ukraine, May 27 – June 2, 2010.

Cheng, X., & Degryse, H. (2010). The impact of bank and non-bank financial institutions on local economic growth in China. Journal of Financial Services Research, 37(2-3), 179-199.

Chen, D., & Wu, A. (2016). The structure of board committees. Working Paper 17-032, available at https://www.hbs.edu/faculty/Publication%20Files/17-032_22ea9e7a-4f26-4645-af3d-042f2b4e058c.pdf

Chmelarova, V. (2007). The Hausman test, and Some Alternatives, with Heteroskedastic Data. Louisiana State University and Agricultural & Mechanical College, 2007. Retrieved 1/6/2007 from here (http://etd.lsu.edu/docs/available/etd-01242007-165928/unrestricted/ Chmelarova_dis.pdf).

Cicero, D., Wintoki, M. B., & Yang, T. (2008). Do firms adjust to a target board structure? Unpublished working paper, University of Georgia.

Coles, J. W., & Hesterly, W. S. (2000). Independence of the chairman and board composition: Firm choices and shareholder value. Journal of Management, 26(2), 195-214.

Cornett, M.M., Marcus, A.J. & Tehranian, H. (2008). Corporate governance and pay-for-performance: The impact of earnings management, Journal of Financial Economics, 87, (2): 357-373.

Daily, C.M. & Dalton, D.R. (1994). Bankruptcy and corporate governance: The impact of board composition and structure, Academy of Management Journal, 37: 1603-1617.

Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. Academy of Management Review, 22(1), 20-47.

Demitriades PO, Du J, Girma S, Xu S (2008) Does the Chinese Banking System Promote the Growth of Firms? University of Leicester Discussion Paper 08/6.

Dulewicz, V. and Herbert, P. (2004). Does the composition and practice of boards of directors bear any relationship to the performance of their companies? *Corporate Governance: An International Review*, 12(3), 263-80.

Elsayed, K. (2007). Does CEO duality affect corporate performance? *Corporate Governance: An international review*, 15(6), 1203-1214.

Fama, E., & Jensen, M. (1983). Separation of ownership and control. *Journal of Law and Economics*, 26, 301-325.

Gebba, T. R. (2015) 'Corporate Governance Mechanisms Adopted by UAE National Commercial Banks', Journal of Applied Finance & Banking, 5(5), 23–61.

Guest, M. (2009): The impact of board size on firm performance: evidence from the UK, The European Journal of Finance, 15:4, 385-404.

Guillet, B.D., Seo, K., Kucukusta, D. & Lee, S. (2013). CEO duality and firm performance in the US restaurant industry: Moderating role of restaurant type, International Journal of Hospitality Management, 33: 339-346.

Gujarati, D. (2004). Basic Econometric (Trans. S. Zain). Jakarta: Erlangga Publishers.

Guo, L., & Masulis, R.W. (2015). Board Structure and Monitoring: New evidence from CEO turnovers. *Review of Financial Studies*, 28(10), 2770-2811.

Hausman, J. A. 1978. Specification tests in econometrics. Econometrica 46: 1251–1271.

Jensen, M. (2001). Value maximization, stakeholder theory, and the corporate objective function. *Journal of applied corporate finance*, 14(3), 8-21.

Jensen, M., & Meckling, W. (1976). Theory of the firm: Management behavior, agency costs, and capital structure. *Journal of financial economics*, 3(4), 305-60.

Kakabadse, N. K, Yang, H. & Sanders, R. (2010). The effectiveness of non-executive directors in Chinese state-owned enterprises. *Management Decision*, 48(7), 1063-1079

Kirkpatrick, G. (2009) 'The Corporate Governance Lessons from the Financial Crisis, Financial Market Trends, 2009 (1), 61–87.

Klein, A. (1998). Firm performance and board committee structure. Journal of Law and Economics, 41(1), 275-303.

Krause, R. & Semadeni, M. (2013). Apprentice, departure, and demotion: An examination of the three types of CEO–board chair separation, Academy of Management Journal, 56(3), 805-826.
Laeven, L. (2013) 'Corporate governance: What's special about banks?', Annual Review of Financial Economics, 5(1), 63–92.
Macey, J. R., & O'hara, M. (2003). The corporate governance of banks. Economic policy review, 9(1).
Ma'aji, M., Abdullah, N., & Khaw, K. (2018). Predicting Financial Distress among SMEs in Malaysia. *European Scientific Journal*, 14, 91.
Ma'aji, M., Abdullah, N., & Khaw, K. (2019). Financial distress among SMEs in Malaysia: An early warning signal. *International Journal of Business & Society*, 20(2), 775-792.
Marcinkowska, M. (2012) 'Corporate Governance in Banks: Problems and Remedies', Financial Assets and Investing, 2 (2), 47–67.
Masulis, R. W., Wang, C., Xie, F., & Zhang, S. (2018). Directors: Older and Wiser, or Too Old to Govern? European Corporate Governance Institute (ECGI)-Finance Working Paper, (584).
Maxfield, S., Wang, L. and Magaldi de Sousa, M. (2018) 'The Effectiveness of Bank Governance Reforms in the Wake of the Financial Crisis: A Stakeholder Approach, Journal of Business Ethics, 150(2), 485–503.
McMullen, D.A. (1996). Audit committee performance: an investigation of consequences associated with audit committees. Auditing: A Journal of Practice and Theory, 15(1), 87-103.
Nowak, M. & McCabe, M. (2008). The independent director on the board of company directors. Managerial Auditing Journal, 23(6), 545-566
OECD (2015). G20/OECD principles of corporate governance. OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264236882-en
Ong, C., Wan, D. Board Structure, Board Process, and Board Performance: A Review & Research Agenda. Journal of Comparative International Management, 4(1), 3-24.
Pagano, M., & Volpin, P. F. (2005). The political economy of corporate governance. American economic review, 95(4), 1005-1030.
Rashid, K. & Islam, S. (2013). Corporate governance, complementarities and the value of a firm in an emerging market: the effect of market imperfections. Corporate Governance: The International Journal of Business in Society, 13(1), 70-87.
Sanchez, L., Odriozola D., & Luna, M. (2020). How corporate governance mechanisms of banks have changed after the 2007–08 financial crisis. *Global Policy*, 11(1), 52 – 61.
Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. The journal of finance, 52(2), 737-783.
Sokhorng, C. (2016). Firms flimsy on corporate governance. Phnom Penh Post News https://www. phnompenhpost.com/business/firms-flimsy-corporate-governance
Stein, E., & Daude, C. (2001). Institutions, integration, and the location of foreign direct investment. New horizons for foreign direct investment, 101.
Talamo, G. M. C. (2009). 2. FDI, mode of entry and corporate governance. Geography, Structural Change, and Economic Development: Theory and Empirics, 29.
Talamo, G. (2011). Corporate governance and capital flows. Corporate Governance: International Journal of Business in Society, 11(3), 228-243.
Vafeas, N. & Theodorou, E. (1998). The relationship between board structure and firm performance in the UK. *British Accounting Journal*, 30, 383-407.
Wooi, H. C & Ming, T. C (2009). Directors' Pay-Performance: A Study on Malaysian Government Linked Companies. CenPRIS Working Paper No. 110/09, Universiti Sains Malaysia
Wu, Y. (2004). The impact of public opinion on board structure changes, director career progression, and CEO turnover: Evidence from CalPERS' corporate governance program. *Journal of Corporate Finance,* 10, 199–227.
Yermack, D. 1996. Higher market valuation of companies with a small board of directors. Journal of Financial Economics 40: 185–221.
Zakaria, Z., Purhanudin, N. and Wahidudin, A. N. (2018) 'The Role of Board Governance on Bank Performance,' Journal of Finance & Banking Studies, 7(4), 38–50.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 47-58
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.344

The Relationship between Word-of-Mouth, Satisfaction, Trust and Loyalty in Herbal Medicine Industry

Peter Kwasi Oppong[1], Adelaide Gyawu[2], Clementina Araba Yawson[3]

[1] School of Management Sciences & Law, University of Energy & Natural Resources, Ghana. Email: peteroppong72@gmail.com
[2] School of Business & Management Studies, Cape Coast Technical University, Ghana. Email: akuagyawu@gmail.com
[3] School of Business, University of Cape Coast, Ghana. Email: clementina.yawson@stu.ucc.edu.gh

Correspondence: Peter Kwasi Oppong, School of Management Sciences & Law, University of Energy & Natural Resources, Ghana. Email: peteroppong72@gmail.com

Abstract
Favourable word-of-mouth, customer satisfaction and trust are essential elements for strengthening customer brand loyalty to gain a sustainable advantage in a competitive market. However, there is a relative scarcity of research on the impact of word-of-mouth and customer satisfaction on brand loyalty through the mediated role of brand trust in the herbal medicine market. Consequently, this research aimed to assess the impact of word-of-mouth and customer satisfaction on loyalty through the mediating role of trust in the herbal medicine market. A survey questionnaire was utilised to obtain empirical data from a sample of 265 customers through systematic sampling strategy. Covariance-based structural equation modelling was employed to examine the hypotheses formulated to achieve the aim of the study. The research established that positive word-of-mouth, satisfaction, and trust significantly impact loyalty in the herbal medicine market. More importantly, the research indicated that the customers` trust partially mediated the impact of word-of-mouth and customer satisfaction on loyalty in the herbal medicine market. Hence, this research contributes to advancing the extant brand management literature by establishing the intervening role of trust in the relationship between word-of-mouth, satisfaction and loyalty in the herbal medicine market. This research further provides a reference point to encourage the practitioners to develop and track the customers` word-of-mouth, satisfaction and brand trust to enhance loyalty in the industry.

Keywords: Word-of-Mouth, Satisfaction, Trust, Loyalty, Herbal Medicine

1. Introduction

The role of herbal medicines in health care delivery in recent years has gained considerable attention due to the growing demand to complement conventional therapies across the world. Herbal medicines "include herbal herbs,

herbal material, herbal preparations and finished herbal products, containing as active ingredients parts of plants, or other plant materials, or combinations thereof" (WHO, 2002, p.1).

WHO (2008) reported that about one-third of the developed world population had used complementary or alternative medicine (CAM) in their lifetime. It has also been estimated that roughly 70 to 95 percent of less developed countries` population depend on herbal medicines to combat ailments, deal with chronic diseases, and maintain fitness (WHO, 2011; Naresh & Reddy, 2016). Furthermore, more than half of Ghanaians depends on plant medicines to meet their health care needs (UNDP, 2007). In this regard, the Food and Drugs Authority (FDA) and the Traditional Medicine Practice Council (TMPC) have been mandated to regulate herbal medicinal products' production and retailing. Moreover, herbal medicines have been profiled as non-prescription medicines and are usually distributed in over-the-counter medicine shops, pharmacies, herbal stores and clinics (WHO, 2011; Essegbey, Awuni, Essegbey, Akuffobea, & Mica, 2014).

In the last few years, herbal medicine (HM) firms, especially those operating on a large scale have also adopted various forms of modern technologies to improve the quality of the products, ranging from the process to product innovations. This has given rise to manufacturing different well-designed packaged herbal medications such as pills, tablets, capsules, creams, and mixtures (Essegbey et al., 2014), sold in the local and international markets. Currently, HM firms are going through stiff competition resulting from new firms' entry and the proliferation of CAM and modern medicines. This might have resulted in abysmally low prices and, ultimately, lower profit margins in the industry. It has been asserted that favourable word-of-mouth behaviour (WOM), high level of satisfaction, and trust have a significant and positive effect on loyalty (Alhulail, Dick, & Abareshi, 2018; Akbar & Parvez, 2009; Vazifehdoost, Rahnama, & Mousavian, 2014). Greater loyalty is also linked to high market share, price premium, a barrier to entry of rival firms, resistance to rival activities, and long-term profitability (Aaker, 1991). This may ultimately support HM firms to grow and sustain themselves in the industry.

The significance of satisfaction, WOM and trust in enhancing loyalty is well-documented in the marketing literature (Chaudhuri & Holbrook, 2001; Alhulail et al., 2018; Vazifehdoost et al., 2014; Hanaysha, 2016; Akbar & Parvez, 2009). However, there is little or no research on the impact of WOM and satisfaction on loyalty through the mediating role of trust, particularly in the HM market. A previous study considered the mediating role of trust, satisfaction and quality in the impact of brand experience on satisfaction and loyalty (Moreira, da Silva, & Moutinho, 2017). For this purpose, this paper seeks to examine the mediating role of brand trust in the relationship between WOM, satisfaction and loyalty in the HM market. Consequently, this paper extends the prior studies by considering the impact of WOM and satisfaction on loyalty mediated by brand trust in the HM market. This research also serves as a point of reference to encourage the HM practitioners to build and manage WOM, satisfaction and customers` trust in their brands to strengthen loyalty in the industry.

2. Literature Review and Research Hypotheses

2.1 Brand Loyalty

Growing, enriching, and maintaining loyalty has long been acknowledged as one of the essential goals of a company's marketing efforts because it serves as a foundation for achieving a competitive distinctiveness in the market. Loyalty relates to the association between customers` attitude and the re-patronage of a specific brand (Dick & Basu, 1994). According to Lovelock and Wright (2002), loyalty refers to customers' voluntary decision to do business with a company for an extended period by patronising its offerings regularly and on exclusive basis, and recommending the offerings to his friends and associates. Customers' attitudes and behaviours are considered critical dimensions of loyalty (Kardes, Cronley, & Cline, 2011). Attitudinal loyalty indicates customers` total feelings about a brand, whilst behavioural loyalty refers to customers` predisposition to make repeated purchases. A study also revealed that attitudinal and purchase loyalty exert a greater impact on market share and relative price for a brand, respectively (Chaudhuri & Holbrook, 2001). Alternatively, Oliver (1999, p. 34) explained loyalty as "deeply held commitment to rebuy or re-patronise a preferred product or service consistently in the future, thereby causing repetitive same-brand or same-brand set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour." The author identified four stages of loyalty development,

namely cognitive, affective, conative and action. Thus, consumers first become loyal in the cognitive sense, then in the affective, conative, and finally, action or behavioural sense. Cognitive loyalty focuses on the brand's preference due to its performance, while affective loyalty is concerned with the consumer`s brand-likeability. Furthermore, conative loyalty emphasises repurchase intentions, whereas action loyalty reflects a dedication to repurchase action.

High customer brand loyalty can translate into a desire to pay a higher price, increase in market share and quantity of purchases, a barrier for new entities to enter the industry, repurchase intentions and positive WOM (Kotler & Keller, 2012; Dick & Basu, 1994; Aaker, 1991). Besides, greater brand loyalty plays a critical role in determining the value for a brand during its sale and purchase because a large loyal customer base is anticipated to provide a stable demand and profit to a firm (Aaker, 1991).

2.2 Word-of-Mouth

Word-of-mouth (WOM) communication has drawn academicians and practitioners' attention in the last few years because it plays a greater role in influencing consumer behavioural intentions. WOM has been defined as "informal, person-to-person communication between perceived non-commercial communicator and a receiver regarding a brand, a product, an organisation or a service" (Harrison-Walker, 2001, p. 63). Kardes et al. (2011) also explained WOM as product information conveyed by a consumer to another through face-to-face, phone, mail and/or the internet. In their view, WOM communication is credible and believable because consumers who engage in WOM are rarely involved in advertising or sales pitches. The fundamental assumption underlying WOM communication is that a friend, relative or co-worker who participates in WOM is known and can be trusted and that their views are honest and devoid of ulterior motives. Hence, WOM is believed to be seven times more influential than print media, twice as effective as broadcast media, and four times as effective as personal selling in influencing consumer switching behaviour (Hoyer & Maclnnis, 2010). The authors also noted that WOM is more widespread, convincing, and vivid than written communication.

It has also been emphasised that WOM communications drive more than half of all consumer buying decisions, which has a significant impact on business success (Mothersbaugh & Hawkins, 2016). Information from personal sources is more powerful, especially when consumers are not familiar with the product or are exposed to new and technologically complex products (Solomon, Bamossy, Askegarrd, & Hogg, 2013). This is because positive WOM can potentially minimise the perception of risks associated with purchasing and using up the product (Harrison-Walker, 2001). Solomon et al. (2013) suggested that unfavourable WOM information can reduce a firm`s advertising credibility and negatively affect customers` attitudes and repurchase intentions towards its products. Studies indicate that a favourable WOM message makes the recipient feel relieved, excited, confident, optimistic, and overall, improves his perception about the firm (Sweeney, Soutar, & Mazzarol, 2008). Besides, earlier studies reported that favourable WOM has a significant impact on customers' brand trust (Mikalef, Pappas, & Giannakos, 2017; Ha, 2004; Nikhashemi, Paim, & Khatibi, 2015) and loyalty (Hanaysha, 2016; Alhulail et al., 2018).

Hence, the following hypotheses are postulated:

H1: Word-of-mouth has a significant and direct relationship with brand loyalty

H2: Word-of-mouth has a significant and direct relationship with brand trust

2.3 Customer Satisfaction

Customer satisfaction plays a critical role in a business's success because it serves as a source of competitive advantage. Oliver (1999) described customer satisfaction as the extent to which a product offers a pleasurable consumption-related fulfilment. Kotler and Keller (2012) also viewed satisfaction as customers` feeling of pleasure or disappointment from judging a product`s perceived outcomes to expectations. The satisfaction, which is customers` judgment of post-purchase responses, are based on the expectation-disconfirmation model. Per this

framework, if the product`s perceived outcomes match the expectations, the expectations are confirmed, and the customer is satisfied.

Moreover, where the product`s perceived outcomes are less than expectations, negative disconfirmation sets in, and the customer is dissatisfied. Lastly, if the perceived product`s performance exceeds expectations, the customer is delighted (Hoffman & Bateson, 2011). Customer expectations stem from the previous product or service exposures, WOM referrals, marketing and rival firms` actions (Kotler & Keller, 2012).

Delighted customers remain loyal, provide WOM referrals, are less responsive to price hikes, increase purchases over time, and re-patronage the firm`s products. Greater customer satisfaction is also associated with higher stock returns and minimal trading risks in the stock market (Kotler & Keller, 2012; Ferrell & Hartline, 2011). Wijaya and Astuti (2018) argued that satisfied customers are likely to establish trust for the company and its products and involve in re-patronage behaviour. Empirical studies also confirmed that customer satisfaction positively influences brand trust (Wijaya & Astuti, 2018; Zboja & Voorhees, 2006) and loyalty (Vazifehdoost et al., 2014; Moreira et al., 2017; Akbar & Parvez, 2009).

Consequently, the following hypotheses are proposed:

H3: Customer satisfaction has a significant and direct relationship with brand trust

H4: Customer satisfaction has a significant and direct relationship with brand loyalty

2.4 Brand Trust

The concept of trust has been studied in social psychology, sociology, management and marketing, resulting in a lack of a generally-accepted definition of the construct. However, Morgan and Hunt (1994) stated that trust relates to the confidence that a relational party in an exchange will not take advantage of the other party's vulnerability. The authors pointed out that confidence expectations and risk are critical aspects of trust. Thus, trust exists when a person has confidence in the current partners` reliability and integrity. In the authors` view, the trusting party's confidence results from the firm belief that a trustworthy party is reliable and has proven integrity. Consequently, it is believed that the trustworthy party would demonstrate some degree of consistency, competency, honesty, fairness, responsible, helpful and benevolence (*ibid)*.

Chaudhuri and Holbrook (2001) also defined brand trust as customers' willingness to rely on the brand's ability to perform its intended purpose. The author further stated that trust is essential, particularly in an environment where customers feel more vulnerable because it decreases perceived risks. Hence, trusted brands are bought more often and usually induce a higher level of attitudinal commitment because they are reliable, safe and genuine. However, Yague-Guillen, Munuera-Alemán, and Delgado-Ballester (2003) viewed brand trust as confident expectations about its reliability and intentions in an environment that poses risks to the consumer. The authors supported the view that risk is a critical ingredient of trust and can induce choice and positive behaviour. Based on the authors` conceptualisation, two distinct dimensions of brand trust have been identified: reliability and intention. Brand reliability relates to its competence and is concerned with the perceptions that the brand can fulfil its intended purpose. The brand` reliability dimension is crucial since it creates a sense of certainty in that the brand can meet the individual customer`s needs in a consistently positive way. Hence, this can engender favourable brand attitudes, which can provide the basis for repeated buying decisions in a customer-brand relationship (Morgan & Hunt, 1994).

Conversely, brand intentions measure the belief that the brand would gain the buyer`s interest when unexpected future problems arise regarding its consumption. In other words, the brand`s intentions relate to the belief that its behaviour will be motivated by positive and good intentions towards the consumer`s welfare and interests in the course of unanticipated future problems of the brand`s consumption (Yague-Guillen et al., 2003). Thus, brand intentions are manifested in such aspects as altruism, benevolence, honesty, dependability and fairness. Studies also show that brand trust significantly and positively affects loyalty (Chaudhuri & Holbrook, 2001; Akbar &

Parvez, 2009; Moreira et al., 2017; Ha, 2004; Vazifehdoost et al., 2014), and is positively affected by WOM (Mikalef et al., 2017; Ha, 2004) and satisfaction (Wijaya & Astuti, 2018; Zboja & Voorhees, 2006).

Based on this, the following hypotheses are formulated:

H5: Brand trust has a significant and direct relationship with brand loyalty

H6: Brand trust mediates the relationship between word-of-mouth and loyalty

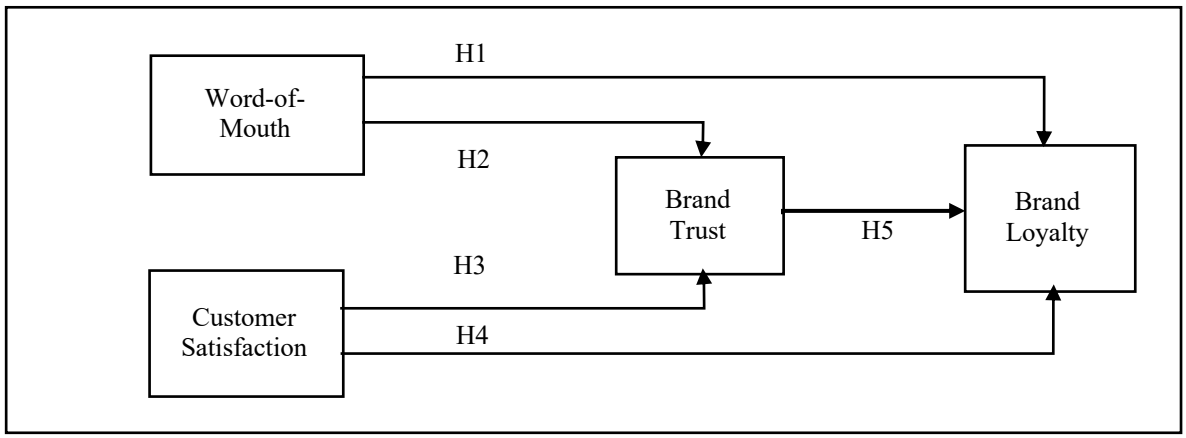
H7: Brand trust mediates the relationship between satisfaction and loyalty

3. Conceptual Model

The conceptual framework exhibits the graphical and narrative illustrations of the critical factors and how they relate to each other in this paper (Miles, Huberman, & Saldaña, 2014). In this research, WOM and satisfaction are predictor variables, and brand trust is an intervening variable, whilst loyalty is an outcome variable.

The framework in Figure 1 suggests that WOM and satisfaction are positively related to brand trust, which directly influences loyalty. In this paper, satisfaction indicates a customer`s feeling of pleasure or disappointment, resulting from judging a product`s perceived outcomes to expectations (Kotler & Keller, 2012). Similarly, brand trust measures the customers` confident expectations about a brand`s reliability and intentions in an environment surrounded by risks (Yague-Guillen et al., 2003). WOM is also an informal, face-to-face communication between one person and another relating to a firm and its products or services (Harrison-Walker, 2001). Finally, brand loyalty reflects customers' voluntary decision to do business with a company for an extended period by patronising its offerings regularly and on exclusive basis, and recommending the offerings to his friends and associates (Lovelock & Wright, 2002).

Figure 1: Conceptual Model



Source: Developed by the Researchersust

3. Research Methodology

The methodology used to achieve the study's purpose is discussed below.

3.1 Population and Sample

The study`s population involves locally-produced herbal medicines, 26 herbal stores, and 854 customers who patronise herbal drugs from the metropolis's retail stores. The herbal retail stores are required by law to sell only plant medicines in the country. The data about the number of herbal stores was obtained from the TMPC in Cape

Coast, while that of the customers was from herbal stores' daily sales. Following Krejcie and Morgan's (1970) guide of calculating sample size, 265 samples of customers participated in the study.

3.2 Scale Items Development and Data Collection Method

Multiple test items with five-point responses ranging from 1= strongly disagree to 5 = strongly agree were adopted to capture the customers` perceptions of satisfaction, WOM, trust and loyalty. The researcher utilised this type of questionnaire since it generates data that can be analysed statistically and is much easier to interpret the results (Creswell, 2014). The multiple scale items were also obtained from earlier studies. The scale items used to measure customers` satisfaction were from He, Li, and Harris (2012) and Delgado-Ballester and Munuera-Alemán (2005), WOM from Zeithaml, Berry, and Parasuraman (1996), loyalty from Chaudhuri and Holbrook (2001) and Zeithaml et al. (1996), and brand trust from Chaudhuri and Holbrook (2001).

A systematic sampling method was employed to self-administer the survey questionnaires to the customers. The first respondent was selected at random, and then one out of every third customer was invited to participate in the survey. This sampling approach allowed the researchers to recruit the respondents without prior information about them (Malhotra, Nunan, & Birks, 2017). Although two hundred sixty-five (265) questionnaires were distributed to the sampled customers, only 208 were used in the analysis.

4. Data Analysis and Results

Exploratory factor analysis (EFA) and structural equation modelling (SEM) were the statistical procedures used to analyse the hypotheses using SPSS Amos 20.

4.1 Sample Demographic Characteristics

The findings of the study's sample demographic structure show most were male, between the age of 26 and 35, and had completed senior high school. The results reveal that 104 (50.7%) were male, 81(39.1%) were between the age of 26 and 35, and 74 (36.5%) had senior high school education.

4.2 Exploratory Factor Analysis

The purpose of conducting the EFA was to determine the multiple items' correlation with their stated constructs. The EFA was conducted with 15 test items, and the factors were extracted through the principal axis factoring using the promax rotation method. Table 1 below presents the EFA results, which show that Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy of 0.84 is greater than the lower limit of 0.60, indicating a sufficient sample size for the EFA (Pallant, 2013). More so, the Bartlett's Test of Sphericity ($X = 1572.534$; $df = 105$; $p = .000$) is significant at $p < .05$, validating the EFA (Hair, Black, Babin, & Anderson, 2014).

Besides, the results of the pattern matrix reported a four-factor structure. Variable 1 denotes brand trust, 2 is satisfaction, 3 is loyalty, and 4 is WOM. Fourteen (14) multiple-scale items were maintained because one test item cross-loaded with another variable and, therefore, was rejected (*ibid*). Thus, four items loaded on trust, four on satisfaction, four on loyalty and two on WOM. Again, the four variables had eigenvalues greater than 1.0 and explained 67.83% of the analysis' overall variance. After the EFA, the scale items` reliability was examined through the coefficient alpha to eliminate those with lower inter-item correlations. The findings in Table 1 reveal that all the variables had values higher than .70, ranging between .807 and .851, confirming internal consistency reliability (Tavakol & Dennick, 2011).

4.3 Structural Equation Modelling

The SEM was carried out through a two-stage procedure, as proposed by Byrne (2016), to test the research hypotheses. That is, the measurement model was analysed first and, afterwards the structural model.

4.3.1 Measurement Model

The measurement model was carried out through the confirmatory factor analysis (CFA) using a maximum likelihood to confirm the EFA results. The CFA was also conducted to investigate the construct validity and composite measure of the constructs` reliability in the measurement model. Table 1 reports the CFA summary results, which indicate that 12 test items loaded on the four variables and all the estimates were statistically significant. Two test items were excluded from the analysis to check convergent validity because their standardised regression weights were below .50 (Hair et al., 2014).

Moreover, apart from the chi-square test (X = 73.926; df = 48; p = .010), the other fit indices validated the model. The Normed chi-square statistic (CMIN/DF) = 1.540; Goodness-of-Fit Index (GFI) = .948; Adjusted Goodness of Fit (AGFI) = .915; Root Mean Residual (RMR) = .032; Standardised Root Mean Square Residual (SRMR) = .043; Root Mean Square of Error of Approximation (RMSEA) = .049; Comparative Fit Index (CFI) = .977; Tucker-Lewis Index (TLI) = .969; Incremental Fit Index (IFI) = .978; Normed Fit Index (NFI) = .939; and Relative Fit Index (RFI) = .916. All these outcomes demonstrate a better fit of the model (Hu & Bentler, 1999; Kline, 2015; Hair et al., 2014).

The composite reliability was adopted to evaluate the constructs' reliability in the measurement model. According to Hair, Sarstedt, Hopkins, and Kuppelwieser (2014), composite reliability is regarded as a more acceptable measure of internal consistency than coefficient alpha. This is because the latter is more sensitive to the number of test items measuring a particular variable. The results in Table 1 show that all the coefficients are greater than .70, indicating adequate construct reliability (Fornell & Larcker, 1981; Bagozzi & Yi, 1988).

Table 1: Results of Measurement Model

Latent Variables and Test Items		Standardised Estimate	t-values
Brand Trust (α = .851; CR = .852)			
BT1	I trust X	.763	— a
BT2	I rely on X to solve my problems	.825	12.045
BT3	X is safe	.728	10.653
BT4	X an honest brand	.755	11.059
Brand Loyalty (α = .820; CR = .778)			
BL1	I would consider X as my first choice when buying herbal medicine	.820	— a
BL2	I intend to keep buying more of X in the future	.756	9.971
BL3	I would be willing to continue to buy more of X even if its price increases somewhat	.618	8.510
Customer Satisfaction (α = .807; CR = .813)			
CS1	I am completely satisfied with X	.751	— a
CS2	I am very pleased with X	.809	10.366
CS3	I am very delighted with X	.746	9.974
Word-of-Mouth (α = .820; CR = .826)			
WOM3	I would encourage my friends and relatives to buy X	.841	— a
WOM2	I would recommend X to someone who asks for my advice	.837	10.147

Notes: X= Focal brand; α = Cronbach alpha; CR = Composite Reliability; a = path parameter was set to 1; therefore, no t-values were estimated; all standardised estimates are significant at p = 0.001 level.

4.3.2 Construct Validity Analysis

The constructs` validity was checked by examining convergent validity and discriminant validity. The Fornell and Lacker (1981) criterion and average variance extracted (AVE) were adopted to determine convergent validity and discriminant validity. The findings in Table 2 point out that all the AVEs are above the lower limit of .50, supporting convergent validity (Bagozzi & Yi, 1988; Hair et al., 2014). Again, all the squared correlation estimates between a variable and another are less than the square root of the variables` AVEs, showing discriminant validity (Fornell & Lacker, 1981).

Table 2: Results of Construct Validity Analysis

Variables	AVE	Brand Trust	Brand Loyalty	Satisfaction	Word-of-Mouth
Brand Trust	.591	.769**			
Brand Loyalty	.542	.300	.736**		
Customer Satisfaction	.592	.268	.180	.769**	
Word-of-Mouth	.704	.342	.317	.161	.839**

Notes: ** = Square root of AVEs; off-diagonal estimates measure the squared inter-construct correlations

4.3.3 Structural Model

The proposed hypotheses were tested by using the structural model. In this paper, customer satisfaction and WOM are independent variables, while brand trust is an intervening variable, and brand loyalty is a dependent variable. Given the Chi-square test (CMIN = 99.611, df = 49, p = .000), the CMIN/DF = 2.033; GFI = .935; NFI =.918; TLI = .940; IFI = .956; CFI = .956; RMSEA = .068, confirm the model. Table 3 provides the structural model's summary results, demonstrating that all the path estimates are a statistically significant at a probability level of .05 or .001. The results indicate that WOM is significant and directly related to loyalty ($\beta = .366$, $t = 3.861$) and trust ($\beta = .489$, $t = 6.114$) at $p < .001$, supporting *H1* and *H2* respectively. Again, the findings of the analysis revealed that satisfaction has a significant and positive effect on trust ($\beta = .378$, $t = 4.938$) and loyalty ($\beta = .174$, $t = 2.046$) at $p < .05$, confirming *H3* and *H4* respectively. Lastly, the analysis shows that trust ($\beta = .264$, $t = 2.608$) is significant and directly related to loyalty at $p < .05$, supporting *H5*.

Table 3: Summary Results of Structural Model

Hypotheses	Structural Relations			Standardised Estimate	C.R.	p-value
H1	Brand Loyalty	<-----	Word-of-Mouth	.366	3.861	.000
H2	Brand Trust	<-----	Word-of-Mouth	.489	6.114	.000
H3	Brand Trust	<-----	Satisfaction	.378	4.938	.000
H4	Brand Loyalty	<-----	Satisfaction	.174	2.046	.041
H5	Brand Loyalty	<-----	Brand Trust	.264	2.608	.009

4.3.4 Mediational Model

The study also aimed to explore brand trust's mediational role in the relationship between WOM and loyalty (*H6*) and satisfaction and loyalty (*H7*). Relying on Baron and Kenny's (1986) mediational model, which consists of; (1) regressing the mediator on the independent variable; (2) the dependent variable on the independent variable; and (3) the dependent variable on both the independent variable and the mediator. Hence, the mediational model was analysed through a bootstrap re-sampling approach.

The results of the analysis in Table 4 shows that WOM ($\beta = .366$, $p = .005$) has direct effect on loyalty at $p < .05$ level. The analysis further indicates that the mediated relationship between WOM ($\beta = .129$, $p = .007$) and loyalty is statistically significant at $p < .05$. The outcomes show that trust acts as a partial mediator in the relationship between WOM and loyalty. Furthermore, the analysis indicates that satisfaction ($\beta = .174$, $p = .038$) has a direct influence on loyalty at $p < .05$ level. The analysis further shows that satisfaction ($\beta = .100$, $p = .004$) has indirect effect on loyalty at significance level of $p < .05$. These findings reveal that trust partially mediates the relationship between satisfaction and loyalty.

Table 4: Results of the Mediational Model

Hypotheses	Structural Relations					Direct without Mediator	Direct with Mediator	Indirect Effect
H6	Loyalty	<----	Trust	<---	WOM	.366 (.005)**	.489 (.001)**	.129 (.007)**
H7	Loyalty	<----	Trust	<---	Satisfaction	.174 (.038)**	.378 (.001)**	.100 (.004)**

Notes: ** = Statistically significant at $p < .05$

5. Discussion and Implications

The study aimed to explore the impact of WOM and satisfaction on loyalty mediated by brand trust in the HM industry. The study found that WOM has a significant positive effect on loyalty in the HM market. This outcome is consistent with earlier studies (Hanaysha, 2016; Alhulail et al., 2018) which established that positive WOM strengthens loyalty. This outcome of the study also differs from the previous studies (Markovic, Iglesias, Singh, & Sierra, 2018; Niyomsart & Khamwom, 2016), which considered WOM as a consequence of loyalty. Thus, the WOM recommendations provided by customers` friends and relatives positively affect their commitment to the HM market`s brands.

Besides, the findings show that WOM is the best predictor of loyalty compared to satisfaction and trust in the HM market. This result is contrary to past research (Moreira et al., 2017), which pointed out that satisfaction has a dominant influence on loyalty compared to trust, quality and brand experience in a telecommunication multiple-play service market. Again, the research reveals that the customers` trust is positively affected by WOM in the HM market. This outcome is in line with past studies (Mikalef et al., 2017; Ha, 2004; Nikhashemi et al., 2015), suggesting that WOM contributes positively to strengthening a customer`s trust in a brand. The HM market is flooded with counterfeit medicines, and customers are nervous about herbal medicines' perceived side effect. Building and managing customers` WOM referrals by the HM practitioners will engender trust in the brands and ultimately strengthen their loyalty.

Moreover, the results indicate that customer satisfaction directly affects brand trust in the HM market. This outcome concurs with prior empirical studies (Wijaya & Astuti, 2018; Zboja & Voorhees, 2006), which show that WOM significantly influences customers` brand trust. This outcome also suggests that a customer who is satisfied with using a brand considers the brand reliable and hence, develops confidence in it. However, this result is contrary to past studies (Liao, Chung, Hung, & Widowati, 2010; Putri, Wahab, & Shihab, 2018), which established that brand trust directly impacts customers` satisfaction. The study also indicates that customer satisfaction has a significant and positive impact on loyalty in the HM market. This outcome is consistent with earlier authors' investigations (Vazifehdoost et al., 2014; Moreira et al., 2017), highlighting that loyalty is positively affected by customer satisfaction. Creating and sustaining customer brand loyalty is one of the strategic thrusts of marketing. Therefore, providing products that delight customers to fortify their trust should be the priority of HM practitioners. A customer who is satisfied with his product experiences develops confidence in the product, considers it as his first choice, and intends to buy more in the future even if its price increases.

Consistent with earlier studies (Chaudhuri & Holbrook, 2001; Akbar & Parvez, 2009; Moreira et al., 2017; Ha, 2004), this study also shows that brand trust significantly impacts loyalty in the HM market. Trust is well-recognised as an essential element in any successful exchange relationship, and therefore, creating solid customers` trust in the HM markets` brands will culminate into greater loyalty. Finally, the study`s results also reveals that the impact of WOM and satisfaction on loyalty is partially mediated by brand trust. This outcome implies that the effect of WOM and satisfaction on customers` loyalty in the HM market`s brands is partly due to trust. As a result, enhancing WOM and customer satisfaction to reinforce loyalty will be partly achieved by developing customers` trust in the HM market`s brands. Hence, practitioners need to consider brand trust alongside positive WOM and customer satisfaction to build and maintain loyalty in the HM industry.

6. Conclusion

This research aimed to assess the impact of WOM and satisfaction on loyalty through the mediating role of brand trust in the HM market. The study established that WOM contributes significantly to enhance brand trust and loyalty in the HM market. The study further indicated that customer satisfaction positively impacts brand trust and loyalty in the HM market. More importantly, among the variables, WOM was shown to have the most significant effect on loyalty in the HM market. The study, therefore, confirms that WOM and customer satisfaction are important ingredients for building and managing customers` brand trust and loyalty in the Cape Coast HM industry. Furthermore, the study found that in the HM market, the role of WOM and customer satisfaction in enhancing loyalty was partly mediated by trust. Accordingly, this research concludes that positive WOM referrals, customer satisfaction, and brand trust are critical dimensions of brand loyalty in the HM industry.

6.1 Limitations and Future Research

This paper has some limitations that need to be attended to in future research. The primary data the study was sourced from the customers in-store market. The HM market entails an in-store and marketspace environment. Future research should capture the customers` perceptions of WOM, satisfaction, trust, and loyalty in the online and in-store market environments to obtain the customers' holistic view. Furthermore, this paper relied on only locally-made herbal medicines to determine customers` views on WOM, satisfaction, trust and loyalty in the HM market. Future research needs to consider foreign-manufactured herbal drugs sold in the HM market to enrich its generalisation. The study also adopted a quantitative methodology to test the hypothesised relationships to achieve its purpose. Future research should use mixed methods to generate in-depth information about variables of interest.

References

Aaker, D. A. (1991). Managing Brand Equity: Capitalising on the Value of Brand Name. New York: The Free Press.

Akbar, M. M., & Parvez, N. (2009). Impact of Service Quality, Trust, and Customer Satisfaction on Customer Loyalty. *ABAC Journal*, 29(1), 24-38.

Bagozzi, R. P., & Yi, Y. (1988). On the Evaluating Structural Equation Models. *Journal of Academy of Marketing Research,* 16(1), 074-094.

Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychology Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology,* 51(6), 1173-1182.

Byrne, B. M. (2016). Structural Equation Modelling with AMOS: Basic Concepts, Applications and Programming, (3rd ed.), New York: Taylor & Francis.

Chaudhuri, A., & Holbrook, M. B. (2001). The Chain of Effects from Brand Trust and Brand Affect to Brand Performance: The Role of Brand Loyalty. *Journal of Marketing*, 65(2), 81-93.

Creswell, J. W. (2014). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, (4thed.). California: SAGE Publications

Delgado-Ballester, E., & Munuera-Alemán, J. L. (2005). Does Brand Trust Matter to Brand Equity? *Journal of Product & Brand Management,* 14(3), 187-196.

Dick, A. S., & Basu, K. (1994). Customer Loyalty: Toward an Integrated Conceptual Framework. *Journal of Academy of Marketing Science*, 22(2), 99-113.

Essegbey, G. O., Awuni, S., Essegbey, I. T., Akuffobea, M., & Mica, B. (2014). *Country Study on Innovations, Intellectual Property and Informal Economy: Traditional Medicines in Ghana,* (13th ed.), Geneva: World International Property Organization.

Ferrell, O. C., & Hartline, M. C. (2011). Marketing Strategy, (5th ed.). USA: Cengage Learning.

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research,* 18(1), 39-50.

Ha, H-Y. (2004). Factors Influencing Customer Perceptions of Brand Trust Online. *Journal of Product and Brand Management*, 5, 329-342.

Hair, J. H. Jr., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). Multivariate Data Analysis, (7th ed.), England: Pearson Education.

Hair, J. H. Jr., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial Least Squares Structural Equation Modelling (PLS-SEM): An Emerging Tool in Business Research. *European Business Review,* 26 (2), 106-121.

Hanaysha, J. (2016). Examining the Link between Word-of-Mouth and Brand Equity: A Study on International Fast Food Restaurants in Malaysia. *Journal of Asian Business Strategy*, 6(3), 41- 49.

Harrison-Walker, L. T. (2001). The Measurement of Word-of-Mouth Communication and an Investigation of Service Quality and Customer Commitment as Potential Antecedents. *Journal of Service Research*, 4(1), 60-75.

He, H., Li, Y., & Harris, L. (2012). Social Identity Perspective on Brand Loyalty. *Journal of Business Research*, 65, 648-657.

Alhulail, A, Dick, M., & Abareshi, A. (2018). "The Influence of Word-of-Mouth on Customer Loyalty to Social Commerce Websites." (https://aisel.aisnet.org/confirm2018/49: *Retrieved January, 2020*)

Hoffman, K. D., & Bateson, J. E. G. (2011). Services Marketing: Concepts, Strategies, & Cases, (4th ed.). USA: Cengage Learning.

Hoyer, W. D., & Maclnnis, D. J. (2010). Consumer Behaviour, (5th ed.). USA: Cengage Learning.

Hu, L., & Bentler, P. M. (1999). Cut-off Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modelling: Multidisciplinary Journal*, 6(1), 1-55.

Kardes, F. R., Cronley, M. L., & Chine, T.W. (2011). *Consumer Behaviour*. USA: Cengage Learning.

Kline, R. B. (2015). Principles and Practice of Structural Equation Modelling, (2nd ed.), New York: Guilford Press.

Kotler, P., & Keller, K. L. (2012). Marketing Management, (14th ed.). New Jersey: Pearson Education, Inc.

Krejcie, R. V., & Morgan, D. V. (1970). Determining Sample Size for Research Activities. *Education and Psychological Measurement*, 30, 607-610.

Liao, S. H., Chung, Y. C., Hung, Y. R., & Widowati, R. (2010). The Impact of Brand Trust, Customer Satisfaction and Brand Loyalty on Word-of-Mouth. *2010 IEEE International Conference on Industrial Engineering and Engineering Management*, pp.1319-1323.

Lovelock, C., & Wright, L. (2002). Principles of Services Marketing and Management, (2nd ed.). New York: Pearson Education.

Malhotra, N. K., Nunan, D., & Birks, D. F. (2017). Marketing Research: An Applied Approach*,* (5th ed.). United Kingdom: Pearson Education.

Markovic, S., Iglesias, O., Singh, J. J., & Sierra, V. (2015). How does the Perceived Ethicality of Corporate Services Brands Influence Loyalty and Positive Word-of-Mouth? Analysis the Role of Empathy, Affective Commitment, Perceived Quality. *Journal of Business Ethics,* 148(4), 721-740.

Mikalef, P., Pappas, I. O., & Giannakos, M. N. (2017). Value Co-creation and Purchase Intention in Social Commerce: The Enabling Role of Word-of-Mouth and Trust. *Paper Presented in Twenty-third Americas Conference on Information Systems*, Boston, MA.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). Qualitative Data Analysis: A Methods Sourcebook, (3rd ed.). USA: SAGE Publication.

Moreira, A., da Silva, P. M., & Moutinho, V. M. (2017). The Effect of Brand Experiences on Quality, Satisfaction, and Loyalty: An Empirical Study in Telecommunications Multiple-play Service Market. *Revista Innovar Journal*, 27(64), 23-38.

Morgan, R. M., & Hunt, S. D. (1994). The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing*, 58, 20-38.

Mothersbaugh, D. L., & Hawkins, D. I. (2016). Consumer Behaviour: Building Marketing Strategy, (13th ed.). New York: McGraw-Hill Education.

Naresh, B., & Reddy, D. B. S. (2016). Impact of Perception on Customer Purchase Behaviour of Herbal Product in India. *Indian Journal of Research*, 5 (6), 233-235.

Nikhashemi, S. R., Paim, L. H., & Khatibi, A. (2015). The Role of Brand Loyalty in Generating Positive Word-of- Mouth among Malaysian Hypermarket Customers. *International Journal of Economics and Management Engineering*, 9(4), 1647-1652.

Niyomsart, S., & Khamwom, A. (2016). Brand Love, Brand Loyalty, and Word-of-Mouth: A Case of Air Asia. *Conference of the International Journal of Arts and Sciences*, 9 (1), 263-268.

Oliver, R. L. (1999). Whence Consumer Loyalty? *Journal of Marketing*, 63, 33-44.

Pallant, J. (2013). SPSS Survival Manual: A Step by Step Guide to Data Analysis using IBM SPSS (5th ed.), New York: McGraw-Hill Education.

Putri, Y. A., Wahab, Z., & Shihab, M. S. (2018). The Effect of Service Quality and Brand Trust on Loyalty and the Intervening Role of Customer Satisfaction in Transportation Services. *International Journal of Scientific and Research Publications*, 8(7), 369-376.

Solomon, M., Bamossy, G., Askegarrd, S., & Hogg, M. K. (2013). Consumer Behaviour: An European Perspective, (5th ed.). England: Pearson Education.

Sweeney, J. C., Soutar, G. N., & Mazzarol, T. (2008). Factors Influencing Word of Mouth Effectiveness: Receiver Perspective. *European Journal of Marketing*, 42(3/4), 344-364.

Tavakol, M., & Dennick, R. (2011). Making Sense of Cronbach's Alpha. *International Journal of Medical Education,* 2, 53-55.

UNDP (2007). The Ghana Human Development Report: Towards a More Inclusive Society, Ghana (http://www.hrd.undp.org/sites/default/files/nhdr_ghana.pdf: *Retrieved July 7, 2020*).

Vazifehdoost, H., Rahnama, A., & Mousavian, S. J. (2014). Evaluation of the Impact of Brand Purchase Involvement, Satisfaction, Experience and Brand Trust on Loyalty to Brand. *Mediterranean Journal of Social Sciences*, 5 (20), 3054-3063.

WHO (2002). WHO Traditional Medicine Strategy, 2002-2005. *Geneva (https://apps.who.int/iris/handle/10665/67163: Retrieved September 20, 2020)*

WHO (2008). Traditional Medicine. Fact Sheet No.134 (http://www.who.int/medicines/areas/traditional/definitions/en/pdf: *Retrieved June 4, 2020*)

WHO (2011). Traditional Medicines, Global Situation, Issues, and Challenges. The World Medicines Situation, (3rd ed.), Geneva (http://www.who.int/medicines/areas/policy/world_medicines_situation/WMS_ch6_wPricing_v6.pdf: *Retrieved June 14, 2020*).

Wijaya, H. R., & Astuti, S. R. T. (2018). "The Effect of Trust and Brand Image to Repurchase Intention in Online Shopping." *KnE Social Sciences*, 915-928.

Yague-Guillen, M. J., Munuera-Alemán, J. L., & Delgado-Ballester, E. (2003). Development and Validation of a Brand Trust Scale. *International Journal of Market Research*, 45(1), 1-18.

Zboja, J. J., & Voorhees, C. M. (2006). The Impact of Brand Trust and Satisfaction on Retailer Repurchase Intentions. *Journal of Services Marketing*, 20(5), 381-390.

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The Behavioural Consequences of Service Quality. *Journal of Marketing*, 60, 31-46.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 59-67
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.345

Contribution of Factors Affecting Crop Production in Bangladesh: An Empirical Analysis with Production Function Approach

Muhammad Faruq-Uz-Zaman[1]

[1] Dhaka School of Economics, Bangladesh. Email: faruq22@gmail.com

Abstract
Bangladesh has achieved a tremendous success in food production in last few decades amidst challenges of land degradation, land use changes and climate effect. In spite of the increasing trend of yields of crops, there still remain some challenges to meet the growing needs due to increase in population and loss of land to development activities. This study aims to identify the rate of contributions or economics of factors of crop production in Bangladesh. Cobb-Douglas production function has been applied in this study of crop production using a number of production factors within the broad terms land, labour and capital. Secondary data, representing factors of production, have been selected based on literature reviews so that they can be appropriate for this study. Data of crop production have been considered as dependent variables, whereas, land area coverage for agricultural production, labour employed in agriculture, agricultural household expenditure, fertilizer applied and irrigation coverage have been considered as independent variables. Land and labour is negatively correlated with crop production, whereas, fertilizer is positively correlated. Crop production which shows decreasing return to scale deserves the adoption of new technology and good agricultural management practices.

Keywords: Fertilizer, Irrigation, Land Degradation, Soil Fertility

1. Introduction

1.1 Background of the study

Bangladesh is entering into middle-income country group with increasing share of industry and service sector to GDP. The share of agriculture to GDP was 12.68% in 2019 while share of industry and service sector was 29.65% and 52.85% respectively (Plecher, H. 2020). Nevertheless, the agriculture sector is crucial for Bangladesh as it employs almost half of the labour force and economy of most of the rural people rolls with agriculture. This sector is also the primary source of inputs for industry sector. Improved and extensive farming require more labours in a sense but mechanization gradually reduces the demand for labour in agriculture. The landless poor finds jobs in industrial and service sectors and obtains higher real wages (Hossain, et al., 2003; Hossain, 2002). Many additional off-farm jobs are also linked with expansion of farming creating options for

higher income. O'Donnell, 2010 showed that increase in agricultural productivity allows labour and capital to be diverted to expand the non-agricultural sectors. Over time, although, the share of agriculture in GDP has significantly declined in Bangladesh, the contribution of agriculture to non-agricultural growth has maintained an upward trend and it remains an irreplaceable driving force for the economic growth of the country (Rahman, 2017).

A highly dense population imposes challenge to feed its people. The country also suffers from one of the lowest land–man ratios (0.2 ha per person) of the world (Rahman and Salim 2013) and climate vulnerabilities which further aggravate the challenge of food security. Bangladesh has lost about 1 million ha of productive arable land from 1983 to 1996 (BBS, 1999) and the processes of contraction of arable land is still going on. Rapid urbanization and increasing use of land for infrastructural development causes 1% annual loss of agricultural land in Bangladesh (Mohajon, 2013). Therefore, improvement in agricultural productivity and efficiency remains a top priority for Bangladesh in order to ensure food security for its population and industrial growth to meet the demand to become a middle-income country. This study has made an attempt to analyze the contributory effects of production factors for crop production in Bangladesh so that policy measures can be taken to increase crop productivity.

1.2 Objectives

The objective of this study is to identify the rate of contributions or economics of factors of crop production in Bangladesh. More specific objectives of this study are

a) To identify the elasticity of basic inputs or factors in crop production in Bangladesh,
b) To identify Marginal Productivity of factors or inputs and
c) To find out policy suggestions to increase crop production.

Land, labour, household expenditure, usage of fertilizer and irrigation coverage have been considered in this study as the factors of crop production.

1.3 Significance of the study

Since Bangladesh is an agrarian country with high population density and low land-man ratio, there is no alternative to increase crop productivity. Crop productivity should be as high as in the developed country. Improving productivity and efficiency are fundamental strategies to develop a country's economy. Bangladesh has achieved a tremendous success in food production in last few decades amidst challenges of land degradation, land use changes and climate effect. In spite of the increasing trend of yields of crops, there still remain some challenges to meet the growing needs due to increase in population and loss of land to development activities. This study will be able to identify the push factors of agricultural production and provide some insights to increase productivity of crops.

Findings from this research may be helpful for planners and policy makers in order to bring about desired adjustment in resource allocation and consequently in formulating strategies for the production of agriculture.

1.4 Scope of the study

A number of studies have applied the production function approach to identify effects of factors. But different studies have taken different factors as capital. But a little attempts have been identified which have studied effects of factors of crop production using Cobb-Douglas production function in Bangladesh. This study has considered Cobb-Douglas production function for the time series data of five important factors of crop production in Bangladesh. Data have been collected from the recognized and important sources which are illustrated in following subsections. Fertilizer, irrigation and household consumption have been taken as proxies for capital factor besides land and labour. Only the mechanization is not included in this study since Bangladesh is very new in introducing mechanization and data is still not widely available.

2. Literature review

2.1 Theoretical concept

Production function was introduced by Cobb-Douglas in 1928 to describe the distribution of the national income (Wang and Fu, 2013). According to Wang and Fu (2013), production functions specify the output of a firm, an industry, or an entire economy for all combinations of inputs. Felipe and Adams (2005) opined that the Cobb-Douglas production function is still the most ubiquitous form in analyses of growth and productivity.

Olsson (1971) opined that Cobb and Douglas concentrated on the industrial sector, but Wicksell used production function for the production process in agriculture. Cobb-Douglas ignored the land, whereas, Wicksell added the factor 'land' to discuss the production process in agriculture. Even if production function assumes earlier to be constant returns to scale, Olsson (1971) opined, referring Wicksell, that it can also be thought as increasing or decreasing return to scale for agricultural sector.

Armagan and Ozden (2007) also expressed that Cobb-Douglas type production function equations were appropriate for the functional analysis intended for the agricultural activities. It was preferred since it provides easy calculation, ability to test production flexibilities statistically. It introduces a different point of view about the productivity concept and determines the input use efficiency putting forth the function of the outputs obtained based on the inputs used.

Cobb Douglas production function has also been used by Renting, H. et al. (2013) where they have used four independent variables such as agricultural machinery, capital, land and labour investment to investigate the contribution rate of mechanization to agricultural production. Capital investment as shown by agricultural material consumption in their study was the largest contributor in agriculture production in Shaanxi province of China.

According to Echevarria (1998) agriculture is less labor-intensive than both services and industry in Canada, but capital intensity is similar in the three sectors. In his case labour must have negative effect on agricultural production. On the other hand, transformations and technological developments occurred in the agricultural sector in time have absolutely affected productivity (Armagan and Ozden, 2007).

Rahman and Parvin (2009) has shown, using linear and exponential growth model for time series data, that boro rice production was highly correlated with irrigated area. They have suggested expansion of irrigated area to increase rice production.

Merga & Haji (2019) has reviewed various existing research findings and identified most common factors of impeding crop production such as lack of more recently introduced improved seeds, initial capital for investment, loss of cropland, labour, pesticides, invasive alien species, farm storage techniques, methods of small scale irrigation, and religious and cultural challenges. From their study, it was understood that capital for investment, improved seeds, crop land, labour, irrigation are important factors of crop production.

Khatun and Afroze (2016) has also applied Cobb-Douglas production function to identify the relation of GDP with labour and capital for some selected Asian countries. They have used ordinary least square for model estimation using time series data.

Cobb-Douglas production function has also been used by Yuan (2011) to analyze the relation between agricultural output and input factors in Hebei province. Cultivated area, agricultural manpower, effective irrigation area, chemical fertilizer usage, agricultural machinery usage and electricity consumption have been taken as input. They have found that cultivated area and manpower causes less effect on the output while effectiveness of irrigation area, chemical fertilizer, machinery and electricity usage have greater influence on the agricultural output.

2.2 Conclusion from literature reviews and Research Framework

On the basis of theoretical concept, it can be outlined that Cobb-Douglas production function can be applied in the study of crop production using a number of production factors within the broad terms land, labour and capital. Effects of land and labour are not prominent in crop production. Capital in the form of fertilizer application, irrigation coverage, and expenditure for agricultural material consumption as well as technology plays the most effective role for crop production.

3. Research Methodology

3.1 Types of Data

The Secondary data have been used for this study. Data, representing factors of production, have been selected based on literature reviews so that they can be appropriate for this study. Data of crop production have been considered as dependent variables, whereas, land area coverage for agricultural production, labour employed in agriculture, agricultural household expenditure, fertilizer applied and irrigation coverage have been considered as independent variables. For all the variables, data have been collected for 32 years from 1985 to 2016 so that the data has become a time-series data.

3.2 Data Sources

The data used for the analysis are constructed from different sources for different variables.

Crop production: This data represents overall yearly crop production for whole of Bangladesh. The data under this variable are measured in physical quantities, i.e., in lac metric tons. The data was derived from the various issues of the annual Statistical Yearbook of Bangladesh covering the period 1985 to 2016.

Land area coverage under cultivation: Area (in lac hectares) under which all the crops are cultivated is considered as the land area coverage under cultivation. The data was derived from the theglobaleconomy.com. Land is, somewhat, treated as fixed capital and therefore Cobb Douglas function equates only two factors representing labour and capital (Olsson, 1971). But for the food supply for the growing population the nations adopt extension agriculture. The land area for extension agriculture increases historically to produce more crops. But due to population pressure in Bangladesh, area of land has started decreasing to accommodate housing and growth centres. From this point of view, land has been taken as a variable input rather than fixed input.

Labour: Percentage of employment engaged in agriculture with reference to total population in lac has been considered as agricultural labour. The data was derived from the theglobaleconomy.com.

Household expenditure: Household expenditure has been taken as proxy for capital input. The use of seeds, machineries and expenditures for sowing and harvesting are considered as responsible for increase in consumption for rural household. In this sense, the household expenditure causes effect on crop production. This data has been taken from various issues of the annual Statistical Yearbook of Bangladesh.

Fertilizer: The data provides the quantity of fertilizers used per hectare of land (kg/hectare). Though the quantity of fertilizer to be put in a unit of land for a particular crop is fixed, the farmers in Bangladesh mostly cannot put it in optimum level due to high cost of fertilizer. Therefore it has been taken as a variable input for crop production. The data was derived from the theglobaleconomy.com.

Irrigation: This data provides the information about the proportion of total cultivated area under irrigation. It was derived from the website https://knoema.com/ atlas/Bangladesh/topics/Land-Use/Area/Total-area-equipped-for-irrigation.

3.3 Model specification

Production function describes the technical relationship that transforms inputs (resources) into outputs (commodities) (Deberten, 2012). The agricultural output is the result of investment in land, labour and capital. For this analysis crop production in lac metric ton has been treated as agricultural output. Total area used for crop production has been considered as land and number (in lac) of agricultural labour has been considered as labour. Agricultural household consumption, fertilizer used in crop land and proportion of irrigation coverage have been considered for capital inputs. Although machineries, fertilizer, irrigation, seeds, water and training are valuable capital inputs for crop production, fertilizer, irrigation and household consumption have been taken as proxies for capital input for data constraints. The use of seeds, machineries for sowing and harvesting are considered as responsible for increase in consumption for rural household.

The equation of Cobb-Douglas production function is

$$Y = AL^{\beta 1}K^{\beta 2} \text{……..(1)}$$

where, Y = crop production (output)
A = factor productivity
L = labour input
K = capital input
β1 = share of labour for output
β2 = share of capital for output

Since household consumption, irrigation and fertilizer have been taken as proxies for capital, the function for this study stands as

$$Y = AL^{\beta 1} D^{\beta 2} C^{\beta 3} F^{\beta 4} I^{\beta 5} \text{ …….(2)}$$

where, Y= crop production (output)
A = factor productivity
L = area of cultivated land as input
D = labour input
C = household consumption input
F = fertilizer
I = Irrigation

β1= share of land for output
β2= share of labour for output
β3 = share of household consumption for output
β4 = share of fertilizer for output
β5 = share of irrigation for output

Equation 2 is non-linear as the derivatives of Y with respect to the parameters are dependent on the parameters themselves. So non-linear least squares approach should be used to estimate this equation. But Ordinary Least Squares (OLS) can be applied to estimate the model after linearizing the equation by taking natural logarithm for both sides.

By linearizing, the equation 2 will be,

$$\ln Y = \ln A + \beta 1 \ln L + \beta 2 \ln D + \beta 3 \ln C + \beta 4 \ln F + \beta 5 \ln I + \text{…….. (3)}$$

The β values represent the elasticity of production with respect to the corresponding input. The summation of β values represents the degree of returns to scale. Earlier it was discussed that Cobb-Douglas production function could be thought as increasing, decreasing or constant returns to scale for agricultural sector.

Marginal productivity is the change in production resulted from the change in input of factor of production. To measure the marginal productivity the following equation has been used:

$$\mathbf{MP} = \frac{\Delta Y}{\Delta I}$$

Where MP = marginal productivity,
Y = output,
I = input

4. Discussion of Results and Implication

4.1 Estimation and interpretation

The Ordinary Least Squares (OLS) estimation has been derived using Stata which is shown in the following.

Table 1: Summary of OLS estimates

Variable	parameter	coefficient	Std Err
Intercept	lnA	9.80834	4.220378
ln land	β1	- 1.544281*	.8246276
ln labor	β2	- .1100611	.402417
ln household expenditure	β3	.0879697	.086162
ln fertilizer	β4	.5208205**	.1631253
ln irrigation	β5	.0682432	.15794

No. of obs = 32
F (5, 26) = 105.18
Prob>F = 0.0000
R^2 = 0.9529
Adj R^2 = 0.9438
Root MSE = 0.07009

Durbin Watson d –statistic (6, 32) = 1.04594

Durbin-Watson test shows that dwatson (1.045) is greater than R^2 (0.9529). Santaularia (2009) and Baumohl & Lyocsa (2009) have observed much higher values of adjusted R^2 and much lower values of Durbin-Watson statistics for spurious regression. The higher value of Durbin-Watson statistic than R^2 in this study tells that the time series is stationary which confirms the OLS estimation as not spurious. The coefficient of determination (R^2) indicates that 95% of data are explained in this model.

The p-value associated with the F value is very small (0.0000) which conclude that the independent variables predict the dependent variable. **P>|t|** value for land and fertilizer indicates the coefficients of these two variables are statistically significant. The coefficients of labour, expenditure and irrigation are less significant. The coefficient of land indicates that 1% increase in cultivated area causes 1.54% less production and coefficient of fertilizer indicates that 1% increase in fertilizer causes 0.52% increase in production. The labour is negatively correlated whereas consumption and irrigation are positively correlated with crop production.

Inverse correlation of land with crop productivity was also found by Msangi (2017) and Ansoms et al. (2008). It can be described in two ways. Area of land increases due to increase in individual farm size. Large farmers may not be interested to plough all their land with same efficiency, whereas small farmers, having no alternative for livelihood, plough with full efficiency. The efficient use of fertilizer causes increase in crop production. Since the fertilizer is subsidized, the small farmers can avail fertilizer with less cost. Another explanation of less

productivity is inclusion of fallow land in order to extension of crop production to feed its large population. Char lands and coastal saline lands are included for the area of cultivation to be increased. However the crop production cannot be at its optimum level because of infavourable condition of soil.

4.2 Returns to scale and interpretation

The sum of the coefficients of independent variables ($\beta1 + \beta2 + \beta3 + \beta4 + \beta5 = - 0.977$) shows decreasing returns to scale. It implies that if land, labour, fertilizer, irrigation and household consumption increase by some proportion, crop production decreases with less than proportionately over time. Soil fertility is decreased over time due to extensive cultivation if new technology cannot be adopted. It causes the decreasing returns to scale.

4.3 Estimated marginal productivity and interpretation

The analysis has also been done to estimate marginal productivity of land, labour, household consumption, fertilizer and irrigation.

Table 2: Marginal Productivity of Variables

Variables	Marginal productivity
Land	- 1.544281
Labour	- .1100611
Household expenditure	.0879697
Fertilizer	.5208205
Irrigation	.0682432

The marginal productivity of land implies that crop production will be 1.54 metric ton less due to increase in one more hectare of land. Similarly crop production will be 0.11 metric ton less due to increase in one more labour. But 0.52 lac metric ton more crops will be produced if one more kg of fertilizer applied per hectare and 0.06 metric ton more crops will be produced due to increase in one more hectare of irrigation coverage.

5. Conclusion and Recommendations

5.1 Conclusion

In this study, the Cobb-Douglas production function model has been used to estimate the contribution rate of factors for crop production. Regression analysis of factors of production demonstrated that the growth of crop production significantly depends on application of fertilizer. Irrigation and household consumption also has positive impact on production. Since the use of seeds, machineries and expenditures for sowing and harvesting are considered as responsible for increase in consumption for rural household, the use of seeds, machineries must have some positive impact on production. But the effect of these factors is not so much significant. On the other hand, land and labour interestingly have become negatively correlated with crop production. From this finding it may be considered that quality of soil or land area is degrading rapidly more than the area included for cultivation every year. Overall crop production shows decreasing returns to scale. It may happen due to decrease in land productivity, use of traditional plough methods, land degradation, decrease in soil fertility and increase in soil salinity in coastal region. The data showing increasing crop production is the result of application of fertilizer and improved seeds. The excess use of inorganic fertilizer may further aggravate the soil fertility.

5.2 Recommendations

From the findings of the above study the following recommendations can be suggested:

1) Increasing land productivity is must since Bangladesh has low land-man ratio and every year arable land is being lost due to urbanization.
2) Improved agricultural practices should be adopted.
3) Traditional sowing and harvesting should be replaced by highly mechanized techniques.
4) Farmers should be provided with proper technical knowledge of farming,

5) Crop rotation technique should be adopted in a way so that the soil health can be rejuvenated rapidly.
6) Proper management of production practices and inputs are necessary.
7) Research on transformative and technological development should also be given priority.

References

Ansoms, A. et al, 2008: The Inverse Relationship between Farm Size and Productivity in Rural Rwanda, Discussion Paper, Institute of Development Policy and Management, University of Antwerp.

Armagan, G. and Ozden, A., 2007: Determinations of Total Factor Productivity with Cobb-Douglas Production Function in Agriculture: The Case of Aydin-Turkey, Journal of Applied Sciences, 2007, Volume 7, Issue 4, Page No.: 499-502

Baumohl, Eduard and Stefan Lyocsa, 2009: Stationarity of time series and the problem of spurious regression, MPRA Paper No. 27926, posted on 07 Jan 2011 20:50 UTC retrieved from the URL https://mpra.ub.uni-muenchen.de/27926/ on 17 December 2020.

BBS, 1999: Statistical Yearbook of Bangladesh. 1999, Bangladesh Bureau of Statistics, Government of Bangladesh.

Debertin, David L., 2012: Agricultural Production Economics, Second edition, University of Kentucky.

Echevarria, Cristina, 1998: A Three-Factor Agricultural Production Function: The Case of Canada, International Economic Journal, volume, 12, 1998, issue 3.

Felipe, J. and Adams, F. G. (2005). "A Theory of Production" The Estimation of the Cobb-Douglas Function: A Retrospective View. Eastern Economic Journal, Vol. 31(3), pp. 427-445.

Hossain, M., D. Lewis, M. Bose and A. Chowdhury, 2003: Rice research, technological progress, and the impact on the poor: the Bangladesh case (summary report), Discussion paper no. 110, Environment and Production Technology Division, International Food Policy Research Institute: Washington, DC, USA.

Hossain, M. 2002. Promoting the rural non-farm economy of Bangladesh, CPD- IRRI Policy Brief, 3, Centre for Policy Dialog - International Rice Research Institute, Dhaka, Bangladesh.

Khatun Tahmina and Sadia Afroze, 2016: Relationship between Real GDP and Labour & Capital by Applying the Cobb-Douglas Production Function: A Comparative Analysis among Selected Asian Countries, Journal of Business Studies, Vol. XXXVII, No. 1, April 2016.

Knoema, (n. d.): Data for irrigation was retrieved from URL https://knoema.com/ atlas/Bangladesh/topics/Land-Use/Area/Total-area-equipped-for-irrigation on 17 December, 2020.

Merga, Bulti & Jema Haji, 2019: Factors Impeding Effective Crop Production in Ethiopia, Journal of Agricultural Science; Vol. 11, No. 10; 2019

Mohajon, H., 2013: Food, Agriculture and Economic Situation in Bangladesh, proceedings of 2nd International Conference on Global Sustainable Development, 2013, Office of Research, Innovation and Commercialization, Khadim Ali Shah Bukhari Institute of Technology.

Msangi, H. A., 2017: Examining the inverse relationship between farm size and efficiency in Tanzanian agriculture, unpublished MSc thesis, Sokoine University of Agriculture, Tanzania.

O`Donnel, C. J., 2010. Measuring and decomposing agricultural productivity and profitability change, Australian Journal of Agricultural and Resource Economics, 54: 527- 560.

Olsson, Carl-Axel, 1971: The Cobb-Douglas or the Wicksell function? Economy and History, 14:1, 64-69, DOI: 10.1080/00708852.1971.10418884

Plecher, H. 2020: Share of economic sectors in the GDP in Bangladesh 2019, web edition published *in* www.statista.com, cited on 14 January, 2021.

Rahman, M. T., 2017: Role of Agriculture in Bangladesh Economy: Uncovering the Problems and Challenges, International Journal of Business and Management Invention, Volume 6 Issue 7, July 2017, PP 36-46.

Rahman, M Wakilur and Lovely Parvin, 2009: Impact of Irrigation on Food Security in Bangladesh for the Past Three Decades, Journal of Water Resource and Protection, Vol. 1 No. 3 (2009), Article ID: 687

Rahman, Sanzidur, and Ruhul Salim, 2013: Six Decades of Total Factor Productivity Change and Sources of Growth in Bangladesh Agriculture (1948–2008). Journal of Agricultural Economics 64: 275–94.

Renting, H. et al., 2013: Investigation of the contribution rate of agricultural mechanization to agricultural production using Cobb Douglas model, Information Technology Journal, 12(8), 1607-1613.

Santaularia, Ventosa, 2009: Spurious Regression, Journal of Probability and Statistics, Volume 2009, Article ID 802975, 27 pages

TheGlobalEconomy.com, (n. d.): Data for labour and fertilizer was retrieved from URL https://www.theglobaleconomy.com/compare-countries on 17 December, 2020.

Wang, Xiaoshu and Yu Fu, 2013: Some Characterizations of the Cobb-Douglas and CES Production Functions in Microeconomics, Abstract and Applied Analysis, vol. 2013, Article ID 761832, 6 pages.

Yuan, Zaijian, 2011: Analysis of agricultural input-output based on Cobb–Douglas production function in Hebei Province, North China, African Journal of Microbiology Research 5(32), pp 5916-5922.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 68-78
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.346

Determining Firm Value in the Indonesian Banking Sub Sector

Henny Medyawati[1], Muhamad Yunanto[2]

[1] Faculty of Economics, Universitas Gunadarma. Email: henmedya@staff.gunadarma.ac.id
[2] Faculty of Economics, Universitas Gunadarma. Email: myunanto@staff.gunadarma.ac.id

Abstract
This study aims to find the most appropriate model for analysing the effect of financial performance, dividend policy, interest rates and the rupiah exchange rate on firm value. The research sample includes the banking sub-sector companies listed on the IDX in 2013-2019. The research method used is purposive sampling to analyse the panel data. The variables used in this study are the company value as measured by Price to Book Value (PBV), financial performance is measured by Return on Assets (ROA), dividend policy is measured by Dividend Pay-out Ratio (DPR), interest rate is measured by BI interest rate, and the rupiah exchange rate is measured by the middle rate. The results show that ROA and exchange rate affect firm value. The appropriate model used in this study is the random effect model.

Keywords: Dividend Policy, Panel Data, PBV, ROA

Introduction

One of the sectors that has contributed to helping Indonesia's economic growth is the financial sector. The contribution of the financial sector was 3.86% in 2014, 4.03% in 2015, 4.2% in 2016, in 2018 it was 4.17%, and in 2019 it was 4.34% (Katadata, 2019). This banking development has encouraged Indonesian banks to improve their performance. Companies should try harder to maximize profit as a long-term goal of the company. By looking at the company's profit and company value, it will shows the prosperity of shareholders. High company value indicates that the prosperity of shareholders is also high.

Firm value is the investor's perception of the company, whether the company provides maximum benefits for investors or results in losses to investors. Various management policies aim towards increasing the value of the company, which in turn by increases the prosperity of the shareholders, which are reflected in the stock price (Bringham & Houston, 2009). According to Arifin and Hadi (2012), the exchange rate is the price of one currency against another. The exchange rate is one of the most important factors in an open economy, given its enormous influence on the current account balance and other macroeconomic variables. It can be the exchange rate in various transactions or can be the buying and selling of foreign currency.

Dividend policy is concerned with the decision to share profits or hold it to be reinvested in the company. The optimal dividend policy in a company is a policy that creates a balance between current dividends and future growth so as to maximize share prices (Astuti, 2004). The factors that influence dividend policy are: (1) government regulations; (2) constraints in the agreement / contract. The bank will limit the payment of cash dividends from the profit that can be achieved, up to a certain limit or the bank arranges the payment of a fine up to a certain amount; (3) internal obstacles and the amount of cash dividend payments also depends on the availability of company cash; (4) future growth forecasts; (5) considerations of company owners and (6) market considerations.

The measurement of company value according to Weston and Copelan (2008) consists of (1) Price Earning Ratio (PER) namely the comparison between the company's stock price and earning per share;)2) Price to Book Value, namely the ratio of share price to book value of company equity and (3) Tobin's Q, namely the sum of the stock market value and debt market value compared to value of all capital placed in production assets. In this study, firm value is measured by Price to Book Value (PBV). The following Table 1. is an overview of PBV growth from 2013 to 2019.

Table 1: The Growth of Price to Book Value in the period 2013-2019

Banks	2013	2014	2015	2016	2017	2018	2019
BCA	3,70	4,16	3,64	3,39	4,23	4,20	4,70
BTN	0,80	1,04	0,99	1,02	1,75	1,16	1,24
BNI	1,54	2,00	1,23	1,21	1,82	1,58	1,52
BRI	2,23	2,91	2,41	1,94	2,83	2,57	2,54
BDMN	1,08	1,32	0,90	0,98	1,73	1,79	2,12
BJBR	1,28	1,00	0,94	3,41	1,98	1,74	1,96
BJTM	0,97	1,13	1,03	1,18	1,40	1,26	1,30
BMRI	2,09	2,29	1,84	1,79	2,27	1,95	1,86
BNBA	0,64	0,60	0,35	0,35	0,46	0,46	0,50

During the study period, bank with the BBCA code, had the highest PBV value of 4,70. The lowest PBV, is obtained by bank with the code BNBA with a value of 0.35 in 2015 and 2016. Price to Book Value is a measure that functions to see whether shares in a company can be expensive or cheap. Stocks that have large PBV ratios can be said to have high valuations (overvalued) while stocks that have PBV below 1 have low values (undervalued). It can also be said that Price to Book Value (PBV) describes how much the market appreciates the book value of a company's shares. When the PBV ratio is high, it means that the market trusts the company's prospects. PBV also shows how far a company is able to create firm value relative to the amount of invested capital.

Study on firm value had been conducted by several researchers. Yunitasari and Priyadi (2014), found that investment decisions have an effect on firm value and show a unidirectional relationship. Dividend policy has an effect on firm value, but the negative coefficient show that the relationship is not unidirectional. The interest rate in this study has no effect on firm value. Besides that, Azizah and Priyadi (2016) show that company size, dividend policy and profitability have an effect on firm value. In this study, funding decisions, managerial ownership, and exchange rates have no effect on firm value. Kurniati (2019) states that financial performance has a significant positive influence on the company value in a positive direction. Rafika and Santoso (2017) found that investment decisions and funding decisions have an effect on firm value, while dividend policy has a negative (opposite direction) effect on firm value. Another research related to financial performance and firm value is done by Egbunike and Okerekeoti (2018). They analyze the interrelationship between macroeconomics factors, firm characteristics and financial performance of quoted manufacturing firms in Nigeria. Macroeconomics factors such as inflation rate and GDP Growth show a significant effect on ROA. Yusriati, Habsari and Prukumpai (2016) found that financial variables such as return of equity, earning per share and market value have an added effect on firm performance. Iona, Benedetto, Asefa and Limosani (2020), investigated about the financial policy and corporate value. In this study, the financial policy is measured by

cash-holdings and leverage. The result shows that the relationship between cash-holdings and firm value is "U-shaped," which means that the probability of observing firms, is affected by agency problems.

Various previous research results prompted us to carry out this study. Also, research related to firm value in the banking sector is relatively small when compared to other sectors, for example the manufacturing sector. The purpose of this study is to analyse the effect of dividend policy as measured by the DPR, financial performance (ROA), exchange rates, and interest rates on firm value. In this study, firm value is measured using Price to Book Value (PBV) (Weston & Copelan, 2018). The analysis was carried out using the panel data estimation method with the assumption that panel data analysis provides advantages, considering that the panel data is a combination of two-time series data and that the cross-section is able to provide more data thus producing a greater degree of freedom (Widarjono, 2007). The contribution of this research is the development of an economic model which can analyse the factors that influence firm value, especially in the financial sector, i.e. the banking sector.

Related Articles

The function of the BI-Rate is to control inflation. If the bank interest rates are high, people tend to save, reduce spending and this will avoid an increase in prices of goods. In addition, the BI-rate function can control economic growth. If the BI-rate is low, the loan interest rate will also be low and this has implications for the business world. Price to Book Value (PBV) is the ratio of the share price to book the value of a company's equity. This concerns the value that the market gives to the management and organization of a company that continues to grow (Weston & Copeland, 2008). PBV is often used as a reference in determining the value of a stock relative to its market price.

Dividend policy concerns the decision to distribute profits or hold it for reinvesting in the company. The optimal dividend policy in a company is a policy that creates a balance between current dividends and future growth so as to maximize share prices (Astuti, 2004). According to Kasmir (2011) high-interest rates on the one hand will increase people's desire to save so that the amount of bank funds will increase. On the other hand, high interest rates will increase costs incurred by the business world, resulting in a decline in domestic production activities. Mahendra Dj, Artini, & Suarjaya, (2012) examined the effect of financial performance on firm value with dividend policy as a moderating variable. The population in this research is all the manufacturing companies listed on the IDX that consecutively distribute dividends during the 2006-2009 period. The results showed that liquidity has a positive but insignificant effect on firm value, dividend policy does not able to significantly moderate the effect of liquidity on firm value. Leveraging has a negative and insignificant effect on firm value, dividend policy cannot significantly moderate the effect of leverage on firm value, however profitability has a significantly positive effect on firm value; dividend policy is not able to significantly moderate the effect of profitability on firm value.

Pamungkas & Puspaningsih (2013) analyse the relationship between investment decisions, funding decisions, dividend policies and firm size on firm value in manufacturing companies listed on the IDX. In this study, firm value is measured by Price to Book Value (PBV). The results showed that investment decisions have a positive effect on firm value. Funding decisions, dividend policy and firm size have no effect on firm value. According to Achmad and Amanah's (2014) in their research on investment decisions, funding, dividend policy and financial performance have an effect on firm value in manufacturing companies listed on the IDX. They find hat investment decisions have no effect on firm value, while funding decisions, dividend policy and financial performance have an effect on firm value. Their sampling technique used purposive sampling and obtained 8 samples of property and real estate companies that distributed dividends consecutively in 2009-2012. Yunitasari and Priyadi (2014) analysed the influence of investment decisions, funding decisions, dividend policies and interest rates on firm value in real estate companies listed on the IDX. The results showed that investment decisions, funding decisions and dividend policies have an effect on firm value, with funding decisions and dividend policies having opposite effect to that of firm value. Interest rate has no effect on firm value. Eliezer (2016) found that financial performance did not affect the company's value. It was also shown that dividend policy did not moderate the effect of financial performance on company's value. Hamidah & Mardiyanti (2015)

analyse the effect of inflation, BI interest rates, profitability and financial risk on firm value. The results of the analysis show that inflation and BI interest rates have no effect on firm value and other variables, whereas ROA and DER have an effect on firm value. Pascareno (2016) showed that liquidity, leverage and profitability partially but not simultaneously affect the company's value. Also, after being moderated by dividend policy, liquidity, leverage and profitability still do not simultaneously but partially affect company's value. The results of Nisa, (2017) show that investment decisions have an effect on firm value, funding decisions have an (negative) effect on firm value, while dividend policy has no effect on firm value. In this study, the ability of the independent variables to explain the dependent variable was about 67.3%. Rafika & Santoso, (2017) found that investment decisions and funding decisions have an effect on firm value, while dividend policy has a negative effect on firm value.

Bukit, Nasution, Ginting, Nurzaimah and Sambath (2017) analyze firm performance, firm size and debt monitoring. The results show that earning managements practices moderates the positive association between firm size and firm value. Gharaibeh and Qader (2017), measured firm value by Tobins Q. They analyze the endogeneous determinants of firms. The results show that market capitalization, growth opportunites, profitability, and solvency of the firm have a significant relationship with firm value. Al-Najjar & Al-Najjar (2017) find a positive relationship between external financing needs and firm value. In addition, the research shows that size and profitability are positively associated with firm value in the sample. Concerning the corporate governance index (CGI), the research found that big SMEs and those with low-debt levels have better corporate governance structures. Rochmah & Fitria (2017) found that leverage has a negative effect on firm value. Dividend policy is able to moderate the effect of liquidity on firm value, profitability has an effect on firm value and dividend policy is able to moderate the effect of profitability on firm value. Murniati, Mus, Semmaila and Nur (2019) showed that investment decisions and financing decisions have a positive and significant effect on profitability and value of the firm, such that the main objective of the company is to maximize the welfare of company owners by increasing the value of the firm through increased profitability, while dividend policy has a negative and not significant effect on profitability and value of the firm directly and indirectly. Kurniati, Handayani and Rahayu (2019) found that the higher are the GCG, independent commissioners proportion, institutional managerial and public ownerships, the higher is the corporate value. Market to Book Equity Ratio (MBE) and PER stock return is a moderating variable influencing of GCG on corporate value. Financial performance is a moderating variable in the influencing GCG on corporate value. Vieira, Neves and Dias (2019) analyse the determinants of Portuguese firms' financial performance. The results are varied, depending on the variable used to measure the performance. The result showed that when the research uses a market variable performance, the macroeconomics factors including the investors' sentiment, and insider ownership explain more effectively, the firms' performance. Sitompul, Bukit, and Erwin (2020) examine the effect of firm size, firm age, profitability, the proportion of independent commissioners, institutional ownership, and leverage on firm value with corporate social responsibility (CSR) as a moderating variable. The results of this study indicate that the variables, firm size, profitability, the proportion of independent commissioners, institutional ownership and leverage, simultaneously have a significant effect on firm value. Partially, the proportion of the board of commissioners and institutional ownership have a positive but not significant effect on firm value. The variables, firm size and profitability partially have a positive and significant effect on firm value. Partially, proportion of the board commission have a negative and not significant effect on firm value. CSR moderates the influence of firm size, profitability, institutional ownership, the proportion of independent commissioners and leverage on firm value. Based on the previous research studies, the research hypothesis is that :
The financial performance, dividend policy, interest rate and exchange rate affect firm value.

Method

The objective of this research to study the banking companies listed on the IDX. 45 of banking companies are listed on the IDX is 45 companies. The sampling technique used in this study is purposive sampling technique, namely sampling based on certain criteria. These criteria are (1) banking companies have complete company data including publishing financial reports on the IDX, OJK and company websites during the research period in 2013-2019; (2) banking companies distributing cash dividends consecutively starting from 2013-2019. The bank in this study is a conventional bank. The dependent variable in this study is the company value as measured by

Price to Book Value (PBV), the independent variable is financial performance as measured by ROA, dividend policy as measured by the DPR (dividend pay-out ratio), the interest rate is measured by the BI rate per quarterly in the form of a percentage, and the rupiah exchange rate measured by the middle rate, which is the value obtained from the average amount of the selling rate and the buying rate. The research uses the following equation:

$$PBV_{it} = \beta_0 + \beta_1 ROA + \beta_2 rate + \beta_3 exch + \beta_4 DPR$$

Panel data regression analysis was used to analyse data. Procedure of the analysis is described in the following Figure 1.

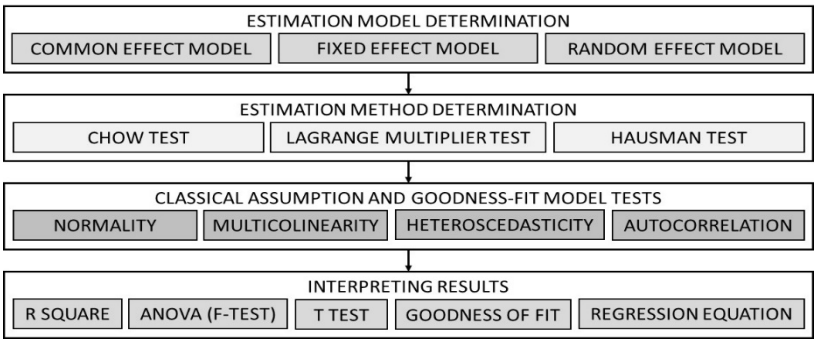


Figure 1: Panel Data Regression Analysis Procedures (Adapted from Zulfikar, 2018)

The first step of panel data regression analysis is to generate to three possible effect models such as common effect, fixed effect and random effect models. This is followed by the Chow Test to determine the most appropriated effect model between common effect model and fixed effect model. If fixed effect model is selected as the appropriate model, the Hausman test should then be performed to determine whether fixed effect model or random effect model is the most appropriate model. If the common effect model is selected, the Lagrange Multiplier Test must be performed to determine the most appropriate effect model i.e. between random effect model and common effect model. The next step is to perform the classical assumption test, which include normality, multicollinearity, heteroscedasticity and autocorrelation to verify the validity of the classical linear regression model or CLRM. The last step is to interpret the resulting effect model i.e. common effect model, fixed effect model or random effect model.

Result and Discussion

The objective of this research is to study the effect of financial performance, dividend policy, interest rates and the rupiah exchange rate on firm value in the banking companies listed on the IDX in 2013-2019 (45 companies). The following banks (9 banks) in Table 1. meet the criteria specified under the objective of this study. They are:

Table 2: Research Object

No.	Company Code	Company Name
1	BBTN	Bank Tabungan Negara (Persero), Tbk
2	BNBA	Bank Bumi Arta, Tbk
3	BBCA	Bank Central Asia, Tbk
4	BDMN	Bank Danamon Indonesia, Tbk
5	BMRI	Bank Mandiri (Persero), Tbk
6	BBNI	Bank Negara Indonesia, Tbk
7	BJTM	Bank Pembangunan Daerah JawaTimur, Tbk
8	BJBR	Bank Pembangunan Daerah Jawa Barat dan Banten, Tbk
9	BBRI	Bank Rakyat Indonesia (Persero), Tbk

Descriptive Analysis

The following Table 2. provides the results of descriptive analysis of research variables (exchange rate, dividend payout ratio, BI-rate, and price to book value) which include minimum and maximum values, mean, and standard deviation.

Table 3: Descriptive Statistical Analysis

Variables	Min	Max	Mean	Standard deviation	Coefficient of Variation (%)
Price to book value	0.35	4,70	1.78	1.023	57.47
Return on Assets	0.1	4,00	2,14	0.891	41.63
Dividend Payout ratio	17.59	71.09	37.51	18.197	48.51
Exchange rate	11689	14380	13282.42	906.141	6.82
BI-rate	4,25	7,41	6.07	1.326	21.85

Referring to their related coefficient of variance (see Table 3), it shows that all variables under study are substantially varied. The values of the coefficients are relatively high which spreading from 6.82 percent (exchange rate) to 57.47 percent (price to book value). This indicates that price to book value, return on assets, dividend payout ratio, exchange rate and BI-rate of financial sectors are all considerably varied.

The following is a description of these variables during the study period, 2013 to 2019. This section presents the descriptive analysis of data for 9 banks, that are included in our study sample.

There is a sharp or extreme fluctuation in ROA in the banking sector. The highest ROA was obtained by banks with the BBCA code, namely in 2018 and 2019. The lowest ROA was obtained by banks with the BDMN code of 0.49 in 2016. Conditions in 2016 showed that the average banking condition as a whole was quite good. Banking profitability as indicated by the value of Return of Assets (ROA) for Commercial Banks shows a decline. The development of ROA for Commercial Banks in May 2016 reached 2.34 percent, lower than the previous month which reached 2.38 percent. Banking efficiency was reflected in the Operational Cost to Operating Income (BOPO), which increased by 82.36 percent compared to April 2016 which only reached 82.30 percent. A grater increase BOPO indicates that banking operations are increasingly inefficient, so, that the profits obtained are not that large. This will affect the ROA value which shows a decrease (Universitas Gajah Mada, 2016).

The following is an explanation regarding the fluctuations in BI interest rates during the study period. Bank Indonesia as the central bank has the duties listed in the final objective of monetary policy, namely maintenance in general and maintaining the stability of the rupiah value, one of which is reflected in the low inflation rate and stability. To achieve this goal, Bank Indonesia set the BI 7DRR policy rate as the main policy instrument to influence the economic activity, with the ultimate goal to achieve inflation. However, the path or transmission from the BI 7DRR decision to the achievement of the inflation target is very complex and requires time (time lag). In the interest rate channel, changes in the BI 7DRR affect deposit rates and bank lending rates. If the economy is experiencing a downturn, Bank Indonesia can use an expansionary monetary policy by lowering interest rates to stimulate economic activity. Lowering the 7DRR BI interest rate lowered the credit interest rate, such that, the demand for credit from companies and households will increase. A reduction in loan interest rates will also reduce the cost of capital for companies to invest. All of this will increase consumption and investment activities so that the economic activity will be more vibrant. Conversely, if inflationary pressure increases, Bank Indonesia responds by raising the 7DRR BI interest rate to put a brake on economic activity that is too fast so as to reduce inflationary pressure (Bank Indonesia, 2020).

The following is an explanation of the conditions of fluctuation in the rupiah exchange rate against the US dollar during the study period. The rupiah has recorded a weakening against the US dollar and has broken through to levels above Rp 14,000 since May 8, 2018. The strongest value of the rupiah since early 2018 occurred on

January 25, 2018 , which reached Rp. 13,290. However, the rupiah's value against the dollar continued to weaken and was not far from the level of IDR 13,500-IDR 14,000 per US dollar. When the value of the rupiah is pulled backwards, in 2014 the US dollar was still at Rp 11,200. Then the US dollar continued to strengthen against the rupiah until it touched Rp. 14,700 in October 2015. Currently, the dollar has strengthened again and recorded its highest level at Rp. 14,400 (Purnomo, 2018).

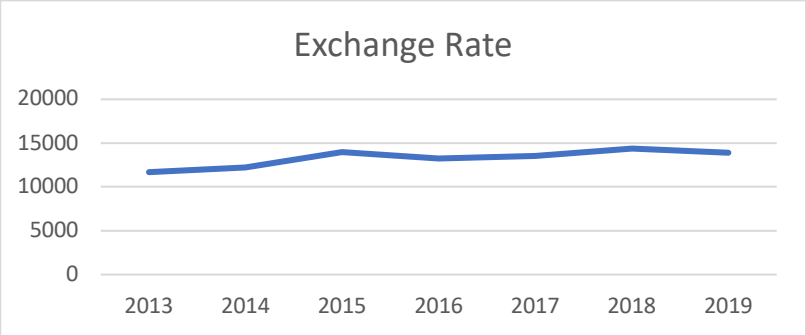


Figure 2: The Growth of Exchange Rate in the Period 2013-2019

There was sharp or extreme fluctuation in the DPR in 2016 and 2017 from the previous 29.94 (2015) to 90.00 (2016). During the study period, the bank receiving the highest DPR (71,09) had the code BJTM that occurred in 2013, while the lowest (17,59) had the code BNBA that occurred in 2016. Dividend pay-out ratio shows the financial ratio used to measure the percentage of net income that was distributed to shareholders in the form of dividends for a certain period of time (usually in 1 year). In other words, this ratio shows how high the portion of profits is, that is given to shareholders (investors) and the portion of profits that is used to fund the company's operational continuity. Dividend Pay-out Ratio or Dividend Pay-out Ratio is very important for investors. Investors who are interested in short-term profits will prefer to invest in companies with high Dividend Pay-out Ratio, while investors who choose to have capital growth will be more interested in investing in companies with low Dividend Pay-out Ratio (Kho, 2018).

Panel Data Regression Analysis

Details of the resulted estimation models which include common effect, fixed effect and random effects model are displayed in the following Tables 4. and Table 5. below, followed by their related regression equations.

Table 4: Common Effect Model

Variables	Coefficient	Probability
Return on Assets	7.5559	0.0000
Rate (BI-rate)	-12.7602	0.9288
Exch	-324.5624	0.0001
DPR	8.6245	0.9443
R-squared	0.266	
Adjusted R-squared		
0.228		

PBV = -4541.775ROA - 12.7602Rate – 324.5624Exch + 8.6245DPR (1)

Table 5: Fixed Effect Model

Variables	Coefficient	Probability
Constant	-953383.9	0.0000
Return on Assets	479.2156	0.0000
Rate (BI-rate)	-70.42468	0.5415
Exch	181.2487	0.0117
DPR	-239.9802	0.1780

R-squared
0.779
Adjusted R-squared
0.726

PBV = -953383.9 + 479.2156ROA- 70.42468Rate + 181.2487Exch - 239.9802DPR (2)

After estimating with common effects and fixed effects, the next process is to do a Chow test to select the most suitable model in this study. The results of the Chow test are as follows:

Table 6: The Chow Test Results

Effects Test	Statistics	df[1]	Probability
Cross-section F	0.337284	(8,50)	0.9473
Cross-section Chi Square	3.311261	8	0.9133

[1]degree of freedom.

The Chow test results in Table 6. indicate that the common effect model is preferred, compare to with fixed effects models, namely the p value> 0.05, thus the appropriate regression equation is equation no 1.

Table 5. Random Effect Model

Variables	Coefficient	Probability
Constant	-935875.3	0.0000
Return on Assets	470.2646	0.0000
Rate (BI-rate)	-35.68930	0.6753
Exch	190.1466	0.0064
DPR	-6.220174	0.9327
R-squared		
0.767		
Adjusted R-squared		
0.751		

The next step is to estimate the random effect model, and the results are shown in Table 5. The equation obtained by the random effect model estimation is as follows:

PBV = -935875.3+ 470.2646ROA -35.68930Rate + 190.1466Exch -6.220174DPR (3)

After estimating with random effects, the next step is to determine a model that is more suitable, either the common effect model or the random effect model. To determine whether the random effect model is better than the common effect model, the Lagrange Multiplier (LM) test is used. This random effect significance test was developed by Breusch-Pagan. The Breusch-Pagan method is based on the residual value of the OLS method, where the LM statistical value is calculated according to the formula:

$$LM = \frac{nT}{2(T-1)}\left[\frac{\sum_{i=1}^{n}(T\bar{e}_i)^2}{\sum_{i=1}^{n}\sum_{t=1}^{T}e_{it}^2}-1\right]$$

If the calculated LM value is greater than the critical value of the chi squares distribution table with a degree of freedom of 5% which is 5.999, it can be concluded that the right model is a random effect. LM tests can also be done with the help of E-views software, which has a Breusch Pagan Random Effect LM Test feature / menu. In the 'both' column the probability value is 0.0205, smaller than 0.05. Based on these results it can be concluded that the most appropriate model is the random effect model.

Before estimating panel data regression, the research data was tested using the classic assumption test, namely normality, heteroscedasticity, multicollinearity, and autocorrelation. Normality test results obtained Jarque-Bera probability value of 0.55900. When the value is greater than a significant value of 0.05, it can be concluded that the data are normally distributed. White test is performed to ensure data is free from heteroscedasticity. The test results show that the data has been freed from the problem of heteroscedasticity, the probability value is 0.405 (greater than 0.05). It can thus be concluded that there is no heteroscedasticity. The test is also to find out whether or not there is multicollinearity. This is done by calculating the correlation coefficient between independent variables. The calculation results show that when the between variables have a large enough coefficient of 0.79, it is assumed that there is a linear relationship between the research variables. Although there is multi-collinearity, it still produces a BLUE estimator, because the BLUE estimator does not assume that there is no correlation between independent variables (Widarjono, 2007). The Durbin-Watson Test (D-W) is one of the most widely used tests to determine whether there is autocorrelation. The test results show a value of 1.843, which means that the value is between 1.54 and 2.46 so that no autocorrelation occurs.

Impact of ROA, DPR, Exchange rate and BI-rate on PBV: Random Effect Model

The magnitude, direction and the significance of effects on return on assets, price to book value, BI-rate, exchange rate and dividend pay-out ratio are presented in Table 6. The relationships amongst these variables are in a random manner, which is determined by the results of the Lagrangian Multiplier Test where random effect model is selected as the appropriate model

Table 6: Random Effect Model

Variables	Coefficient	Probability
Constant	-935875.3	0.0000
Return on Assets	470.2646	0.0000
Rate (BI-rate)	-35.68930	0.6753
Exch	190.1466	0.0064
DPR	-6.220174	0.9327

R-squared	0.767173	Mean dependent var.	13253.48
Adjusted R-squared	0.751116	S.D dependent var	893.5883
Standard Error of regression	445.796	Sum squared residuals.	11526575
F-statistic	47,77796	Durbin-Watson statistics	11526575
Probability (F-statistic)	000.00		

The resulting equation of regression is as follows

PBV = -935875.3+ 470.26ROA -35.68Rate + 190.14Exch -6.22DPR (3)

Where PBV is price to book value, ROA is return on assets, Exch is exchange rate and DPR is dividend pay-out ratio. The intercept is negative, according to Mendenhall (2011), intercept will not always have practical interpretation. So the negative intercept can be ignored. Based on the results of data processing as shown in Table 6, it was found that the factors affecting firm value (PBV) are ROA and exchange rate. The R-squared value obtained is 76.7%. This shows that the company value as measured by PBV can be explained by the company's financial performance, i.e. the profitability ratio (ROA) and exchange rate. Based on the equation in the random effect model, it can be concluded that the variable with the biggest influence is profitability as measured by ROA. These results are in line with Sitompul, Bukit and Erwin (2020), Kurniati (2019), Rochmah and Fitria (2017), Al Najjar & Al-Najjar (2017) and, Hamidah and Mardiyanti (2015) that profitability or financial performance affects firm value.

In this study, the DPR and BI interest rate do not affect firm value. This can be explained from the description of Indonesia's macroeconomic conditions below. The performance of the Indonesian economy in 2013 was inseparable from the effect of changing cyclical patterns that coloured global economic dynamics. Changes in

the pattern of the global cycle affected the performance of the domestic economy not only through the trade channel, but also through the financial market channel. Apart from global influences, structural domestic factors are also one of the root causes of economic problems. The global economy in 2013 was also marked by uncertainty on global financial markets regarding the issue of reducing the monetary stimulus (tapering off) in the United States. The turmoil on the financial market that occurred triggered the flow of foreign capital (Bank Indonesia, 2013). Inflation in 2014 remained under control amid high pressure from administered prices (AP) and volatile food (VF). Inflation, which until October 2014 was still within the target range of 4.19% (ytd), was recorded at the end of 2014 at 8.36% (yoy). The increase in inflation was mainly due to the impact of the increase in the price of subsidized fuel oil (BBM) and the impact of the turmoil in domestic food prices at the end of 2014. The increase in subsidized fuel prices has driven up prices, both as a direct impact as well as a second round effect (Bank Indonesia , 2014).

Conclusion

Based on the previous discussion, the conclusion of this study is that the most suitable model for analysing the effect of ROA, exchange rate, BI-rate and DPR is the random effect model. The results show that ROA and exchange rate have an effect on firm value. Interest rates and DPR do not affect firm value. Based on the equation in the random effect model, ROA of profitability is the biggest influence on firm value. Companies that generate profits will certainly attract the attention of investors. The fluctuating exchange rate conditions during the study period affected the firm value. This can be explained as, Indonesia's economic conditions during the study period, namely 2013 to 2019, were strongly influenced by global economic conditions. Banks as one of the financial sectors that provide a sizeable contribution to the Indonesian economy are showing stability. Banks are still able to generate profits and distribute dividends to shareholders. Fluctuating interest rates in this study did not affect bank performance.

References

Achmad, S. L. & Amanah, L. (2014). Pengaruh keputusan investasi, keputusan pendanaan, kebijakan dividen dan kinerja keuangan terhadap nilai perusahaan. *Jurnal Ilmu dan Riset Akuntansi*, *3*(9), 1-15.

Al-Najjar, B. & Al-Najjar, D. (2017). The impact of external financing on firm value and a corporate governance index: SME evidence. *Journal of Small Business and Enterprise Development*, *24*(2), 411-423.

Arifin, I. & Hadi, G. (2012). *Membuka cakrawala ekonomi*. Bandung: Grafindo.

Astuti, D. (2004). *Manajemen keuangan perusahaan* (cetakan pertama). Jakarta: Ghalia Indonesia.

Azizah, S. & Priyadi, M. P. (2016). Pengaruh faktor internal dan eksternal perusahaan terhadap nilai perusahaan pada perusahaan manufaktur. *Jurnal Ilmu Riset Akuntansi*, *5*(10), 1-20.

Bank Indonesia. (2020). https://www.bi.go.id/id/moneter/transmisi-kebijakan/Contents/Default.aspx

Bringham E. F & Houston, J.F (2009). *Fundamentals of financial management* (12th edition). Mason: South-Western Cengage Learning.

Bukit, R.B., Nasution, F.N., Ginting, P., Nurzaimah, & Sambath, P. (2017). The influence of firm performance, firm size and debt monitoring on firm value: the moderating role of earning management. *Advances in Economics, Business and Management Research*, 46, 583-588.

Egbunike, C. F & Okerekeoti, C.V. (2018). Macroeconomics factors, firm characteristics and financial performance a study selected quoted manufacturing firms in Nigeria. *Asian Journal of Accounting Research*, *3*(2), 142-168.

Hamidah, H. & Mardiyanti, U. (2015). Pengaruh inflasi, suku bunga BI, profitabilitas dan risiko finansial terhadap nilai perusahaan sector property tahun 2011-2013. *Jurnal Riset Manajemen Sains Indonesia*, *6*(1), 295-416.

Iona, A., De Benedetto, M. A., Assefa, D. Z., & Limosani, M. (2020). Finance, corporate value and credit market freedom in overinvesting US firms. *Corporate Governance*, 20(6), 1053-1072.

Kasmir. (2011). Dasar-dasar perbankan. Jakarta: Raja Grafindo.

Katadata. (2019). *Sektor industri sumbang 20 persen PDB*. Retrieved from https://databoks.katadata.co.id/datapublish/2019/05/06/sektor-industri-sumbang-20-persen-pdb

Kho, B. (2018). Pengertian rasio pembayaran dividen (dividen payout ratio) dan rumusnya. Retrieved from https://ilmumanajemenindustri.com/pengertian-rasio-pembayaran-dividen-dividend-payout-ratio-rumusnya/

Kurniati, S. (2019). Stock returns and financial performance as mediation variables in the influence of good corporate governance on corporate value. *Corporate Governance*, *19*(6), 1289-1309.

Kurniati, S., Handayani, S. R. & Rahayu, S. M.(2019). Stock return and financial performance as moderation variable in influence of good corporate governance towards corporate value. *Asian Journal of Accounting Research*, *4*(1), 18-34.

Mahendra Dj, A., Artini, L. G. S. & Suarjaya, A.A.G. (2012). Pengaruh kinerja keuangan terhadap nilai perusahaan pada perusahaan manufaktur di Bursa Efek Indonesia. *Jurnal Manajemen, Strategi Bisnis dan Kewirausahaan*, *6*(2), 130-138.

Mendenhall, W. (2011). *A second course in statistics: Regression analysis* (7th Edition). Prentice Hall.

Murniati, S., Mus, H.A.R., Semmaila, H.B., & Nur, Hj. A. N. (2019). Effect of investment decisions, financing decisions and dividend policy on profitability and Value of The Firm. *International Journal of Accounting & Finance in Asia Pacific*, *2*(1), 1-10.

Pamungkas, H.S. & Puspaningsih, A. (2013). Pengaruh keputusan investasi, keputusan pendanaan, kebijakan dividen dan ukuran perusahaan terhadap nilai perusahaan. *Jurnal Akuntansi*, *17*(2), 156-165.

Pascareno, B. E. (2016). The effect of financial performance on company's value moderated by dividend policy. *Jurnal Ilmiah Ekonomi Bisnis*, *21*(1), 9-20.

Purnomo, H. (2018). Catat rekok terburuk, seperti ini grafik rupiah sejak 2014. Retrieved from https://www.cnbcindonesia.com/market/20180629113049-17-21039/catat-rekor-terburuk-seperti-ini-grafik-rupiah-sejak-2014.

Rafika, M. & Santoso, B.H. (2017). Pengaruh keputusan investasi, keputusan pendanaan dan kebijakan dividen terhadap nilai perusahaan. *Jurnal Ilmu dan Riset Manajemen*, *6*(11), 1-20.

Rochmah, S.A. & Fitria, A. (2017). Pengaruh kinerja keuangan terhadap nilai perusahaan: Kebijakan Dividen sebagai variabel moderating. *Jurnal Ilmu Riset Akuntansi*, *6*(3), 999-1017.

Sitompul, P.L, Bukit & Erwin. (2020). Factors affecting form value with the social responsibility of the company as modeling variables in Banking companies registered in Indonesia Stock Exchange. *International Journal of Public Budgeting, Accounting and Finance*, *2*(4), 1-11. Retrieved from https://ijpbaf.org/index.php/ijpbaf/article/view/220

Universitas Gajah Mada. (2016). *Perkembangan Sektor Perbankan 2016:II*. Retrieved from https://macroeconomicdashboard.feb.ugm.ac.id/perkembangan-sektor-perbankan-2016ii/

Vieira, E.S., Neves, M. E., & Dias, A. G. (2019). Determinant of Portuguese firms' financial performance: panel data evidence. *International Journal of Productivity and Performance Management*, *68*(7), 1323-1342.

Weston, J.F & Copeland, E. 2008. *Dasar–dasar manajemen keuangan* (Jilid II). Jakarta : Erlangga.

Widarjono, A.(2007). *Ekonometrika pengantar dan aplikasinya*, (edisi kedua). Yogyakarta: Ekonesia.

Yunitasari, D & Priyadi, M.P. (2014). Pengaruh keputusan investasi, pendanaan, kebijakan dividen dan tingkat suku bunga terhadap nilai perusahaan. *Jurnal Ilmu dan Riset Akuntansi*, *3*(4), 1-15.

Yusrianti, H., Habsari, T. N., & Prukumpai S. (2016). The effect of financial and non financial variables to firm performance: Comparison between Indonesia and Thailand. *Jurnal Akuntansi dan Investasi*, *17*(2), 118-131.

Zulfikar, R. (2018). Estimation Model and Selection Method of Panel Data Regression: An Overview of Common Effect, Fixed Effect and Random Effect Models. Retrieved from https://www.researchgate.net/publication/326142125_Estimation_Model_And_Selection_Method_Of_Panel_Data_Regression_An_Overview_Of_Common_Effect_Fixed_Effect_And_Random_Effect_Model (Accessed on January 2020).

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 79-94
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.347

Trade-Off Theory and Pecking Order Theory: Evidence from Real Estate Companies in Vietnam

Hoang Duc Le[1], Nguyen Quang Viet[2], Nguyen Huaong Anh[3]

[1] School of Banking and Finance, National Economics University, Vietnam. Email: leduchoang@neu.edu.vn
[2] School of Advanced Education Programs, National Economics University, Vietnam
[3] Faculty of Finance and Accounting, Posts and Telecommunications Institute of Technology, Vietnam

Correspondence: Hoang Duc Le, School of Banking and Finance, National Economics University, Vietnam. Email: leduchoang@neu.edu.vn

Abstract
This study was implemented with the goal of testing the validity of trade-off theory and pecking order theory in determining the capital structure in 50 listed real estate companies in Vietnam. The result of this study shows that the pecking order theory is the more approriate and should be applied for the listed real estate companies in Vietnam, and be the informative document for those firms to take into account the relevant theory to adjust their own capital structure, so that they can raise their own competitiveness and continue the development of the business

Keywords: Trade-Off Theory, Pecking Order Theory, Capital Structure

1. Introduction

Capital structure has always been one of the most sought-after and of top priority in regards to corporate finance, which has been in the center of various studies of scholars, experts, and corporate managers themselves. The capital structure is a combination of both long-term along with short-term financing, often including debentures, commercial papers, bonds, borrowings from banks, equity & additional capital through fund raising. In other words, capital structure is generally understood as a bundle of debt and equity that are mixed together in different ratios in order for the companies to accomplish corporate-level goals. (Wessels & Roberto, 1998). The capital structure is one of those financial tools that can be utilized to protect the effectiveness of corporate governance and ensure its ability to create value. The stochastic scenery of equity precariousness is endogenous and comes from the collision of revolutionization in the value of the firm's assets on the financial leverage. Whenever company made an announcement of issuing new stock, it often casts a negative signal to potential investors and hence the market value of the firm minimizes.

The capital structure is crucial in measuring the weighted cost of capital, which directly affect the business performance of the companies. The increasing amount of studies in regards to evaluating the efficiency of the trade-off theory versus the pecking order theory has produced mixed results.

Shyam-Sunder and Myers (1999) find more supportive evidence for the pecking order theory versus the trade-off theory. Hovakimian, Opler, and Titman (2001) examine the firms' debt-equity issuance (reduction) decision and find that deviations from the target capital structure plays a more pivotal role in the repurchase decision than in the issuance decision of securities. Among their observations, is that their results are in accordance with the pecking order model in the short-run and switch back to the target capital structure in the long-run. Byoun and Rhim (2002) find that both of the theories could explain considerable variations in the firms' total debt. Fama and French (2002) find evidence in favor and against both of the theories. Frank and Goyal (2003) find evidence that are unfavorable towards the pecking order theory, particularly for SMEs. Lemmon and Zender (2002) find no supporting evidence for the trade-off theory, yet the costs of financial distress were not able to justify the pecking order financing behavior that they reported. Korajczyk and Levy (2003) find that the temporary deviations from the target capital structure has a pivotal role in the firm's choice of which kind of security to issue or repurchase. In addition, their findings support the Hovakimian, Opler, and Titman's (2001) results that firms modify towards the target leverage more actively than suggested by Shyam-Sunder and Myers (1999). Hovakimian (2003) examines the role of the target leverage in security issues and repurchases, and finds that debt reduction is carried out to decrease the deviation from target capital structure whereas debt issue, equity issue, and equity repurchase are not driven by this motivation.

The global financial crisis had a significant impact, and mostly negative, on economies around the world, including the collapse of a myriad of banking systems, the credit shortage, the diminution in value of the stock market, and the systematic depreciation of currencies in many countries.

In Vietnam, the impact of monetary policy and capital market on the real estate sector is significant. This is because most real estate companies will benefit from cheaper source of debt financing when interest rates fall. Also, lower interest rate means that the interest burden on the real estate companies, which have usually been high, is significantly reduced. However, the situation reverses when interest rates are generally higher in the more mature phases of the business cycle. Interest rates soared while the stock market lost liquidity, causing difficulties in capital mobilization. At its worst, the financial crisis saw some companies fall into financial distress and go bankrupt. In fact, the root of the crisis stemmed from the inability of borrowers to pay off mortgages that caused the system of structured finance instruments to fail. For the real estate sector, as the sector is typically cyclical and requires heavy capital funding, capital structure management is essential in maximizing cash flows, minimizing the weighted average cost of capital, and improving profitability.

The remainder of this paper is structured as follows. Section 2 provides the literature review. Section 3 presents our data and methodology. Section 4 turns to reporting the empirical results. Finally, Section 5 concludes.

2. Literature Review

Trade-off Theory

The trade-off models have been dominant in the capital structure literature. The tax benefit bankruptcy cost trade-off models (Baxter (1967), DeAngelo and Masulis (1980), Kraus and Litzenberger (1973), Robichek and Myers (1966), Scott (1976)) predict that firms will make best efforts to maintain an optimal target leverage level by adjusting the capital structure to balance the benefits and the costs of debt in the long run.

The benefits include the tax shield whereas the costs include costs of financial distress. Under the agency theoretical models (Jensen and Meckling (1976), Myers (1977), Jensen (1986), Stulz (1990), Hart and Moore (1995)) firms use the benefits of reducing potential free cash flow problems and other potential conflicts, namely principal-agent conflict, to reduce costs that are tagged along with the lack of investment and asset substitution issues. These theories forecast that corporates maintain an optimum capital structure where the marginal benefit

of debt equals the marginal cost. The implication of these trade-off models is that firms have target leverage and they adjust their leverage towards the target over time. Trade-Off Theory indicates that corporates have motivations to increase debt so as to benefit from debt tax-shields. In other words, it can be deduced that a firm has an incentive to turn to debt as the generation of annual profits allows benefiting from the debt tax shields. By applying static trade off theory, Rajan & Zingales (1995) drew a conclusion that there is a positive correlation between Leverage, and profitability of a firm, and also, the level of tangible assets of the firms and the size of the firms are positively correlated with financial leverage.

Under static trade off theory, de Mesquita & Lara executed a research and deduced that the debt of the firm and Leverage was positively correlated in the short run while the results are contradictory in the long-run. Antonious, Guney, & Paudyal (2002) further strengthen the results of due Mesquita & Lara and concluded that firm size has a positive correlation with debt over total assets. The level of tangible fixed assets has stronger correlation with leverage especially in countries where borrowings are considerable.

Um (2001) theorized that having better profitability leads to a higher debt composition of the company and thus, a company will be able to harness to benefits of tax shield. As a result, it is safe to say that a firm's profitability is positively correlated with its financial leverage, according to static trade-off theory. Firms having more amounts of tangible assets will have a higher chance to provide more collateral for debts. If the business is in distress, the lenders will have claims on the company's asset but this also reduces the risk of default for the corporate. Therefore, firms having a large amount of tangible assets are less likely to default and will be able to borrow more debt. Hence, according to the static tradeoff theory it shows a positive relationship between financial Leverage and tangibility of assets (Rajan & Zingales, 1995).

Big firms are generally considered safe as the sheer size indicates that there are so many stakeholders that would try their best to keep the firm from going bankrupt and thus those big companies tend to hold more debt than small enterprises. Large size companies prefer debt financing because they have a higher debt capacity, which is the ability to provide collaterals for their borrowings (Bevan & Danbolt, 2002).

Developed from Modigliani and Miller theories (1958), the static trade-off theory was then formulated in the study of Kraus and Litzenberger (1973). According to Kraus and Litzenberger, any company will have to face the trade-off between the benefits and costs of increasing the level of debt.

Debt level at the other side increases the risk of bankruptcy or as we call it the bankruptcy costs because as the debt to equity ratio increases the debt holders will require higher interest rates but also the shareholders will pretend higher profits for their investments. (Brealey and Myers, 2003, p. 508-509). According to Brealey and Myers (2003) financial managers often think of the firm's debt/equity decision as a trade-off between interest tax shields and the costs of financial distress. "Companies with safe, tangible assets and plenty of taxable income to shield ought to have high target ratios. Unprofitable companies with risky, intangible assets ought to rely primarily on equity financing. If there were no costs of adjusting capital structure, then each firm should always be at its target debt ratio" (Brealey and Myers, 2003, p. 509).

The static trade off theory of optimal capital structure assumes that firms balance the marginal present values of interest tax shields against the costs of financial distress (Shyam, Sunder and Myers,1999). The optimal level is when the marginal value of the benefits associated with debt issues exactly offsets the increase in the present value of the costs associated with issuing more debt (Myers, 2001). The benefits of debt are the tax deductibility of interest payments which favors the use of debt but the positive effect can be complicated by the existence of personal taxes (Miller, 1977) and non-debt tax shields (De Angelo and Masulis, 1980). De Angelo and Masulis (1980) study proposed a theoretical optimum level of debt for a firm, where the present value of tax savings due to further borrowing is just offset by increases in the present value of costs of distress. Also this theory assumes there are no transaction costs to issuing or repurchasing securities (Dudley, 2007). This theory also suggests that higher profitable firms have higher target debt ratio, because they would ensure higher tax savings from debt (Niu, 2008, p. 134), lower probability of bankruptcy and higher over-investment and these require a higher target debt ratio.

Pecking Order Theory

The pecking order theory implies that enterprises should adopt a specific priority order for raising capital needed to fund their operations (Myers and Majluf, 1984). Thanks to the information asymmetries between the company management and potential investors, the company will prefer retained profits to debt, short-term debt over long-term debt and debt over new common stock issuance. Myers and Majluf (1984) argued that if the companies do not issue new security but only use its undistributed profits to support the investment and growth opportunities, the information asymmetric can be resolved. That implies that issuing equity becomes more expensive as asymmetric information insiders and outsiders increase. Companies whose information asymmetry levels are high should increase their debt to avoid selling undervalued securities. The capital structure negative circumstances such as new common stock issuance leads to a corporate's stock price go down. An announcement of increasing capital structure events is perceived by the investors on market as positive news because financial intermediaries including investment bank can play as the role of insiders to monitor the company's performance. Managers may have confidential information that is not published to the market. Insider investors have more information about the true performance of company earnings than a normal external investor. Insider investors tend to have a restriction on the use of equity in order to maintain control of the firm (Hutchinson, 1995). Moreover, the risk of the firm's return is unknown to investors. They are forced into depending on other distracting signals such as the firm's level of capital structure to determine the risk of their investment and firm's value may be undervalued by the market (Myers and Majluf, 1984).

Butter (1949) suggested that managements most of the time prefer internal source of financing due to the fact that external financing approaches often require detailed explanations for the development plans for the investors and persuation for them to believe in the effectiveness of the project. It is understandable that managers are not fond of this idea as a result. In addition, the issue of asymmetric information is also partially attributable to this argument (the problem of information asymmetry will be analyzed further in the next paragraph). Myers and Majluf (1984) argued that managers and owners of the company have much better understanding of the firm's business than the outside shareholders (investors). In the scenrio that the enterprise value is overestimated, additional issuance of common stock will be more beneficial to current shareholders over new shareholders. On the opposite, in the scenario that the corporate value is underestimated, issuance of debt instrument will protect the benefits of existing shareholders (Frank and Goyal, 2007). The market is well aware of this problem, and as a result, investors on the market will view the debt issuance of the company as a positive signal (the enterprise is being undervalued in relative to intrinsic value), and the common stock issuance casts negative signals (indicating that the company is overvalued). Therefore, the managers or owners of the company will prioritize debt over new common stock issuance.

Following the research regarding Modigliani and Miller's Propositions about the capital structure in 1958, Donaldson (1961) provided a perspective that in the selection of optimal capital structure, corporates always arrange the order of their sources of financing and they especially prioritize internal financing source. Pecking order theory suggests that corporates will choose their sources of financing in accordance with the following order:

1) Internal financing (using retained earnings from owner's equity)
2) External financing through debt instruments
3) External financing through the issuance of hybrid securities instrument (convertible bond for instance)
4) External financing through the issuance of new equity

In recent years, the problem regarding the capital structure has received adequate attention from many researchers in Vietnam. For instance, Dang Thi Quynh Anh and Quach Thi Hai Yen (2014) with the foundation of 180 non-financial company listed on the Ho Chi Minh Stock Exchange drew a conclusion that the debt to assets ratio had a positive relationship with the size of the of the company and its profitability while negatively correlated with taxes expenses. In another approach, Le Dat Chi (2013) used the target-adjusted model proposed by Shyam-Sunder and Myers (1999) to examine the process of adjustments towards target capital structure over time of a group of companies. Research results showed that the capital planning process of the companies did

not have a significant correlation with the static trade-off theory but it did have striking degree of correlation with pecking order theory.

The research study "Analyzing the factors affecting the capital structure of Vietnamese firms" of Le Ngoc Tram (2010) also contributed to the myriad of observations from other researchers. After closely examining the theories and combining with conducting the financial leverage regression models of 177 companies from 2005 to 2008, author Le Ngoc Tram deduced from the test results regarding the capital structure of Vietnamese corporates as follows:
+) The regression results demonstrates that the factors having impact on the capital structure of Vietnamese companies include: the financial leverage, liquidity, profitability ratios, the size of the corporate, state ownership, the level of tangible assets, corporate income taxes and product-specific factor.
+) There are two independent variables showing no correlation with the financial leverage ratio (probability value over 5% with 95% confidence interval) which are the growth rate of the corporate and operational risk.
+) The correlation results between the financial leverage ratio and others factors which othere the marginal taxes and product-specific factor appeared to be insignificant within the context of theories about capital structure.

Ngo Hoang Kim Ngan (2012) conducted a research named "Factors affecting the capital structure of listed real estate companies in Vietnam" on the database of 55 real estate companies listed on Ho Chi Minh Stock Exchange and Hanoi Stock Exchange from 2008 to 2011. Research results demonstrated that there were 5 determinants of capital structure which are return on total assets, level of tangible assets on total assets, liquidity, and the size of the company. Among these factors, the tangible assets is the most important factor affecting the changes in long-term debt and owner's equity over time. Corporate income taxes did not play a significant role for the managers to make decisions regarding capital structure. According to the author, in the context that the corporates in Vietnam are struggling to raise capital, the problem of finding capital source for companies should be prioritized over tax-shield benefits.

However, these researches as stated below were only based on company data in a short reviewed period (normally from 2 to 3 years) and they did not precisely reflect the variations over time of the dependent variable. As a result, the conclusions drawn from these studies were only seasonally appropriate. Moreover, different industries and sector will behave differently when it comes to capital structure. In addition, the previous studies only focused on the determinants of capital structure, which, in other words, is the attributed factors to the debt ratio of the companies. This means that the researches in Vietnam have not used existing theoretical framework regarding capital structure to conceptualize their results.

This research study focuses on real estates firms that are listed on the Ho Chi Minh Stock Exchange and Hanoi Stock Exchange in Vietnam besides expanding the observation time frame (10 years). A business cycle usually lasts for 6-7 years; however, the expansion phase of the economy has last for nearly a decade and it is necessary that the reviewed period is expanded beyond a generally believed length of a business cycle. Furthermore, firms that are inactive and lack specific items on their financial statements will be excluded to minimize the distortion of data. Most importantly, two particular theories, which are widely known and developed, are tested and used as the foundation for the theoretical framework, which should be more relevant, directional and purposedful when analyzing the capital structure.

3. Data and methodology

3.1. Data

The research study concentrates on the database of 50 real estate companies listed on the two stock exchanges in Vietnam which are Ho Chi Minh Stock Exchange (HSX) and Hanoi Stock Exchange (HNX) (according to the industry classification in March 2020) during the 2009-2018 period. Currently, there are 66 listed real estate companies on the market (among several hundreds of companies operating in the industry). Listed companies have to satisfy the requirements of State Securities Commission of Vietnam (SSC) and they are a good indicator of the industry due to several reasons.

First of all, listed companies tend to be stronger financially and have more transparency in their information disclosure. As a result, the capital decisions of the company is widely aware by external investors and it is easier to access to the companies' data to conduct analysis. Secondly, as they are generally stronger in regards of financial health, listed companies should be the leading indicator of the industry. In other words, market expectations and impact on those companies should be more apparent compared to unlisted firms.

Among the total of 66 companies listed on HSX and HNX, 16 firms are excluded from the sample size as they pose various problems to the accuracy of the regression analysis. Some companies are currently inactive which means that they do not face liquidation but have not been generating revenue for several years. Also, some companies do not have adequate data for the regression analysis since they did not comply with the disclosure regulations of State Securities Commission of Vietnam or they have just been listed recently. Those firms should not be included in the sample size as they would distort the analysis and the ending results may not truly reflects the realistic situation of the market.

The final sample size consists of 333 observations with 50 companies are selected (it should be noted that many companies were not established until after 2008).

The data source is gathered through public information from the audited financial statements and annual reports. Further analysis was conducted to calculate necessary items for the regression models. Real estate is a very unique sector and some characteristics of this sector are reflected on the data, which will be clarified clearly in the next sections.

3.2. Methodology

In order to closely examine the factors affecting the capital structure of a company, the analysis is conducted with the regression of the dependent variable being the debt to assets ratio with independent variables representing the determinants.

The capital structure of a company, represented by the financial leverage, is the debt to total assets ratio. The debt to total asets ratio is measured based on the market value or book value of current liabilities and long-term debt.

The regression model has the general formula as below:

$$Y = \alpha + \Sigma\beta_i * X_i + \varepsilon_i \qquad (1)$$

In which, Y is the dependent variable, α is the constraint constant, β_i is the corresponding beta coefficient of the independent variable X_i.

Table 1: The dependent and independent variables

Dependent variable (Y)	
The level of financial leverage (D/TA)	The ratio between total debt and total assets
Independent variable (X_i)	
Profitability (ROA)	The ratio between after-tax earnings and total assets
Size of the business (LnTA)	The natural logarite of total assets
Growth opportunities (TAGr, SaleGr)	The growth rate of total net revenue and total assets
Level of tangible assets (FA/TA)	The ratio between tangible fixed assets and total assets
Liquidity (LIQ)	The ratio between current assets and current liabilities
Business risk (RISK)	Changes in earning before interest and taxes (EBIT) over the years

Source: Summary from different studies

Profitability

Additionally, according to the Trade-Off approach, growth opportunities have no value in the case of firm bankruptcy, and so bankruptcy costs associated with recourse to debt are greater in firms with high growth opportunities. For these reasons, according to Trade-Off Theory, the relationship between growth opportunities and debt is negative. Also according to static trade-off theory, the low profitability means that return on equity is also lackluster. In addition, the financial leverage levels in these companies with low profitability actually increase the probability of default and interest expense – which are factors affecting the profitability on equity. Consequently, it is extremely difficult for those companies to issue more equity so they must rely on borrowings to raise capital to fund their projects. Moreover, firms with high profitability are normally favourable towards financial leverage to utilize tax shield benefits from interest expense deductibility. Indeed, past studies have found that the most profitable firms have capacity for a higher level of debt, taking advantage of debt tax shields (Mackie-Mason 1990; Fama, French 2002). Highly profitable firms are likely more able to comply with their debt obligations and make payments, which reduce the probability of the company going bankrupt. DeAngelo and Masulis (1980) argued with the lack of non-debt tax shields, more profitable firms can take advantage of their greater profitability by increasing debt, and consequently increasing debt tax shields. Therefore, the static trade-off theory predicts the positive correlation between debt ratio and firms' profitability.

In contrast, the pecking order theory predicts the negative correlation between these two variables, as profitability increases, the ability to finance projects with internal resources also rises. According to the Pecking Order Theory, firms may be financially constrained due to the information asymmetry between managers/owners and investors, and so firms develop a hierarchy in choosing sources of finance. In the first place, firms use internal financing (retained profits); if it is necessary to turn to external financing, firms use debt with little or no risk, which usually translates to short-term debt; and in the last place, firms will select external equity. Therefore, highly profitable firms have a low debt ratio. The more profitable is the firm, the greater is its capacity to accumulate retained profits, and so there is less need to turn to external financing..To support this hypothesis, the conclusion of Baskin (1989) is an evidence proving the negative relationship between financial leverage and profitability of the company.

Size of the company

The size of the corporate is also contradictorily predicted by two theories. Warner (1977) argued that there is advantage for size in case of default (economies of scale in bankruptcy), which means that the bigger the business, the lower the probability of default and the cost of borrowings reduces. Indeed, larger companiess tend to have greater diversification of activities that indicates less chance of bankruptcy (Warner 1977; Ang et al. 1982; Titman, Wessels 1988). In addition, large firms with less volatile profits are more likely to take advantage of the debt tax shields, thus increasing the potential benefits of debt (Smith, Stulz 1985). Therefore, according to the trade-off approach, large corporates tend to increase their level of debt as a result of the lesser chance of bankruptcy, and also as a way to increase the debt tax shields. Hence, according to the view of trade-off theory, the size of the company has a negative correlation with debt ratio.

On the opposite, the pecking order theory implies that the size of the company represents the level of information asymmetry between the market and the company itself: the bigger the company, the lower the level of information asymmetry, thus informationally sensitive securities should be easier to be issued, especially common stock (Kester, 1986).

Pecking Order Theory predicts that greater size allows a firm to accumulate retained earnings, and so less debt is necessary. Therefore, Pecking Order Theory predicts a negative relationship between size and debt (López-Gracia, Sogorb-Mira 2008). Ezeoha (2008) identify a negative relationship between firm size and debt, which is according to the assumptions of the Pecking Order Theory, therefore small firms should use less debt due to the costs of external financing stemming from asymmetric information problems. However, as argued by Myers (1984), greater firm size mitigates the issues of information asymmetry between managers/owners and debtholders, enabling firms to acquire more debt on relatively more favourable terms. A positive relationship

between size and debt may be expected in the Pecking Order approach that is verified in various studies (Marsh 1982; Wald 1999; Psillaki, Daskalakis 2009). On the other hand, information asymmetric makes it more difficult for small firms to have access to external financing sources, so the internal funds should be the priority when financing resources are required. In brief, the negative correlation between the size of the corporate and the debt ratio is predicted by pecking order theory but also, the positive effect could also considered supportive for the pecking order theory. Hence, the effect is either positive or negative with the denial of hypothesis is that there is no correlation.

Growth opportunities

Kim (1978) stated that borrowings, although creating benefits through tax shield, increases the probability of default for the company, which may contribute to a reduction of growth opportunities in the future. As a result, companies may have reluctancies in deciding whether to borrow, in order not to witness their future growth diminished. Myers (1984) argued that as bankruptcy and agency costs are greater for firms with high expectations of growth opportunities, companies can be reluctant to increase their borrowings balance in order not to increase their probability of bankruptcy. As a result, firms with high growth opportunities may not use debt as the first financing source. Therefore, in the trade-off theory approach, a negative relationship is expected between debt and growth opportunities. According to the trade-off theory, enterprises with greater growth opportunities have a lower level of debt, given that greater investment opportunities increase the possibility of agency problems between managers/owners and creditors, because the former have a reasonable motivation to "under-invest" (Myers 1977; Smith, Warner 1979). Additionally, trade-off theory also implies that growth opportunities have no value in the event of firm default, and so bankruptcy costs associated with claims to debt are greater in firms with high growth opportunities. For these problems, as presented by trade-off theory, the relationship between growth opportunities and debt is negative. In another perspective, Myers (1977) believed that growth opportunities might cause ethical risks, by which owners might take advantage of debtholders' money to take on unncessary risks, with the purpose of harvest gains on the expense of debtholders. Debtholders also recognized this problem as they either decrease their lending amounts or require a higher return. Either way results in the lower debt ratio and the negative correlation between debt ratio and growth opportunities.

In accordance with the Pecking Order Theory, enterprises with high growth opportunities must adopt significant investment and development projects, which cast greater demand for funds. When internal financing is depleted, companies prefer debt rather than external equity for funding growth opportunities, which are associated with a greater risk than do investment in assets currently existed (Baskin 1989; Shyam-Sunder, Myers 1999; Viviani 2008; Ramalho, Silva 2009). These authors argued that companies with good growth opportunities increase debt when internal funds are not enough to meet requirements. As a result, higher growth opportunities means that the tendency of using debts increases as well. Even more historical researches have confirmed the positive relationship between debt ratio and growth opportunity of the corporate (Michaelas and co., 1999; Bevan and Danbolt, 2002; Eriotis, 2007).

Tangible fixed assets

Corporates that have high amounts of tangible fixed assets have low probability of bankruptcy and their debts are also better secure with collateral assets. Therefore, the cost of debt is minimized, leading to the greater degree of financial leverage. Tangible assets can be used as collateral in the case of firm bankruptcy, protecting the creditors' rights. Apart from solving problems of bankruptcy costs associated with the use of debt, the tangible assets may also be used to mitigate agency problems (Degryse and co., 2010). Michaelas and co. (1999) stated that companies, with valuable tangible assets that can be used as guarantees, have less strict access to external sources of finance, and they are more likely to have higher levels of debt than firms with low levels of tangible assets.

Considering that a higher level of tangible assets increases the possibility of offering collaterals, mitigating problems of information asymmetry between managers/ owners and debtholders (Berger and Udell, 1998; Michaelas and co., 1999; Sogorb-Mira, 2005), a positive relationship is expected between asset tangibility and

debt. Therefore, the pecking order theory hypothesizes that the high level of tangibility in a firm will decrease the cost of borrowings. In conclusion, both of the above theories expect the positive correlation between the tangibility of assets and the debt ratio of a corporate.

Liquidity

The pecking order theory predicts the negative correlation between the liquidity of a company and the financial leverage. The reason for this is that in those firms with sufficient level of liquidity, cash and other liquid assets act as the primary source of cash and funding for operations instead of borrowings (De Jong and co., 2008). The more cash the company holds, the less dependence they have on the external financing sources. Whereas the pecking order theory expects a negative correlation between those two variables, the trade-off theory does not have any specific predictions on the direction of interaction between them and hence, the effects of trade-off theory are rather inconclusive.

Business risk

According to Trade-Off Theory, the concentration level of the market also plays an important role in the analysis. With the market being diversified, the competition is expected to rise between firms. As a result, they are susceptible to higher business risk, and greater probability of default. As a result, these companies tend to keep their debt at lower levels so that they can handle the situation. In other words, firms with a high level of business risk have a greater risk of bankruptcy, and so they should reduce their debt and vice versa. According to Bradley and co. (1984), corporates with volatile operational profits are highly likely to go bankrupt, and thus may face bigger difficulties in borrowing more capital. Also, the business risk factor is considereda representative of the expected cost of financial distress (Pim Oolderink, 2013). Greater business risk aggravates the expected cost of financial distress and therefore, as mentioned by static trade-off theory, reduce the incentive for debt using of the company. Comprehensively, while the pecking order theory is inconclusive about the correlation between business risk and financial leverage, the trade-off theory predicts a negative interation.

4. Empirical results

4.1. Summary statistics

Table 2 provides the descriptive statistics of all variables in this paper.

Table 2: Descriptive statistics

Variable	Mean	Maximum value	Minimum value	Median	Standard deviation	Probability
D/TA	0.453	0.948	0.009	0.469	0.191	0,0000
ROA	0.034	0.453	-0.853	0.029	0.071	0,0000
LnTA	28.411	33.294	23.665	28.241	1.306	0,0091
TAGr	1.342	359.896	-0.595	0.097	19.872	0,0000
SaleGr	-0.935	316.056	-0.935	0.169	18.881	0,0000
FA/TA	0.037	0.320	0.0001	0.019	0.049	0,0000
LIQ	3.381	109.094	0.170	2.001	7.584	0,0000
RISK	1.806	248.387	-15.060	0.103	15.321	0,0000

Source: Data processing results from STATA software

The debt to total assets ratio of the listed companies in the real estate sector is considerably high (mean value equals 0.453 and median equals 0.469), indicating that debt is the preferable financing source for constructing capital structure for these firms. Indeed, the overall market summary section has pointed out that, listed real estate companies in Vietnam are very fond of using high financial leverage to fund their projects. As discussed

in previous chapters, the financial leverage could bring substantial benefits to the managers and owners, but there are also significant risks associated with, particularly in the period of construction and real estate market stagger currently. On the other hand, the average return on total assets of these companies is relatively low, sitting at about 3.4% with the minimum value being -85.3%. The huge difference between the interval of this index implies that listed real estate companies in Vietnam lack profitability and efficiency in their operations given current market outlook.

The tangible fixed assets to total assets of the sample is quite low, only about 3.7%. This low level of tangibility of the real estate companies does not mean that they have little collateral for their borrowing contracts. This is because tangible fixed assets in real estate companies' balance sheet mainly consist of equipments or other working tools. Real estate assets are reported in inventory balance as available for sale real estate products and real estate under construction. These inventories may act as collateral as well as tangible fixed assets. As a result, the curren assets to current liabilities are extremely high (3.381 on average and median value is 2.001). As explained above, current assets include inventories, which mainly consist of real estate products available for sale or under construction. The exceptional value of inventories implies that the inventory balance takes a large proportion of the total assets. In other words, this means the real estate companies are currently accumulating a large amount of real estate projects which are fragmented and deemed unfeasible. As a result, real estate companies would be exposed to substantial risks as these products lack liquidity and the interest expense from the short-term borrowings associated with these products constantly put pressure on the companies' operation. The high value of current assets to current liabilities (mean value of 3.381) precisely reflect the characteristics of this unique sector.

Interestingly, sales growth and total assets growth have a great interval between maximum values and minimum values due to the fact that the business of real estate companies revolves around illiquid products and largely depends on business cycles. As a result, companies whose business is only realtor have their revenues and assets fluctuating over time.

Table 3: The correlation between variables

	D/TA	ROA	LnTA	TAGr	SaleGr	FA/TA	LIQ	RISK
D/TA	1,000							
ROA	-0.041	1,000						
LnTA	0.287	0.074	1,000					
TAGr	-0.028	-0.016	-0.030	1,000				
SaleGr	-0.103	0.005	-0.095	0.196	1,000			
FA/TA	-0.132	-0.167	-0.007	0.055	0.009	1,000		
LIQ	-0.286	0.002	-0.150	-0.018	0.090	-0.048	1,000	
RISK	-0.003	0.047	-0.101	0.138	0.056	-0.048	0.012	1,000

Source: Data processing results from STATA software

Table 3 presents the correlation matrix of the variables involved in the regression analysis. It should be noted that the correlation between each pair of independent variables in the model is reasonably low and insignificant – the most value that is material is the correlation between total asset growth and sales growth (TAGr variable and SaleGr variable respectively) which is 0.196. Therefore, it is safe to conclude that auto-correlation does not have any significant impact in the regression model.

4.2. Empirical results

Table 4: Regression results

Dependent variable: D/TA			
Independent variable	Ordinary Least Squares (OLS) Model		
	Beta coefficient	Standard Deviation	P-value
ROA	-0.2254	0.1360	0.048
LnTA	0.0368	0.0077	0.000
TAGr	-0.0001	0.0005	0.840
SaleGr	-0.0005	0.0005	0.300
FA/TA	-0.5912	0.1987	0.003
LIQ	-0.0095	0.0020	0.000
RISK	0.0003	0.0006	0.615
Intercept	-0.5380	0.2191	0.015
Observations	324		
Probability (F-statistics)	0.000		

Source: Data processing results from STATA software

In this analysis, the ordinary least squares (OLS) method is chosen.

According to Chen (2003), in case there is no data regarding research and development and advertising expense available, two variables could be selected to measure the growth opportunities of a company is the growth rate of total assets (TAGr) and the growth rate of net revenue (SaleGr). However, the growth rate of net revenue is not as representative in reflecting growth opportunities of a company as the growth rate of total assets, due to the fact that net sales is the indicator of current business performance and it is not significant as an indicator for future growth opportunities. In many cases, even though the net revenue has impressive growth rates in the past and at the present, future income could decrease because of the saturation of the market and the slowdown phase of the production cycle. In contrast, the firm might only decide to increase their assets when the business opportunity in the future is visible to them and they might as well harness those opportunities. However, in fact, regression analysis results show that both of the two variables are not statistically significant due to two reasons. First of all, the beta coefficient of all two variables are too small to be material, being -0.0001 and -0.0005 for TAGr and SaleGr respectively. This indicates that the growth opportunities of the real estate enterprises might not be reflected by the growth rate of total assets and net revenue. Secondly, those two variables have their probability value under 0.05 (at 95% confidence interval) and thus have no statistical significance.

The regression coefficient of the ROA variable carries negative sign (-0.225) demonstrates that the use of borrowings in firms decrease as the profitability increases. The reason for this result is that higher levels of profitability allows corporates to mobilize capital much easier thanks to abundant internal financing resources, which is the undistributed earnings, and hence, not much extra debt is required for the funding. This result is inconsistent with trade-off theory but consistent with the prediction of the pecking order theory about the relationship between profitability and financial leverage ratio.

Similarly, the liquidity of the real estate companies in the sample size (represented by LIQ variable) also has the negative correlation with the debt to assets ratio (the regression coefficient equals to -0.01 at 99% confidence level). The direction of interaction between this variable and debt ratio is consistent with the pecking order theory.

On the other hand, the regression coefficient of RISK variable is 0.0003 which is the opposite prediction for the expectation of the trade-off theory that was the negative correlation between the financial leverage and the business risk of a company. However, the positive regression coefficient is also not supportive of the pecking order theory as this theory's prediction on the interaction between two variable is inconclusion. Moreover, the

probability value of the RISK variable is equal to 0.615, indicating that this regression coefficient is statistically insignificant.

Another point worth mention from the result of the regression model is that the regression coefficient of FA/TA variable has negative value (which is -0.519) at 99% confidence interval, demonstrating that the tangible fixed assets to total assets ratio has the negative relationship with the debt to total assets ratio. This regression result contradicts the expectations of both trade-off theory and pecking order theory.

The last variable to consider is the LnTA variable which has the regression coefficient of 0.037 at 99% confidence level. This positive sign of the correlation coefficient implies that it is consistent with the prediction of the static trade-off theory regarding the positive relationship between the size of the company (illustrated by the natural logarite of the total assets) and the debt to total assets ratio. Nevertheless, it is also consistent with the expectation of the pecking order theory. This is because, as pointed out in the previous sections, the pecking order theory predicts that there is either a negative or positive relationship between the size of the company and the debt ratio due to two reasons. Firstly, greater firm size mitigates the issues of information asymmetry between managers/owners and debtholders, enabling firms to acquire more debt on relatively more favourable terms. This leads to the positive correlation between two variables. However, greater size allows a firm to accumulate retained earnings, and so less debt is necessary, leading to the negative direction. Given the fact that the average ROA of the companies in the sample size is quite low and the actual tendency of preferring debt issuance over equity issuance of the real estate companies in Vietnam, the more appropriate interpretation for pecking order theory should be the positive relationship between size of the companies and the debt ratio. As a result, the regression coefficient of 0.037 is also consistent with pecking order theory.

Overall, the regression analysis findings can be summed up by the table below:

Table 5: Research study final results

Factors	Direction of interaction	Statistical significance	Corresponding theory
Profitability	Negative	Yes	Pecking Order Theory
Size	Positive	Yes	Pecking Order Theory and Trade-off Theory
Growth opportunities	Negative	No	Inconclusive
Tangible fixed assets	Negative	Yes	None
Liquidity	Negative	Yes	Pecking Order Theory
Business risk	Positive	No	Inconclusive

In conclusion, it is observable that among the seven variables that is used in the regression model, there are three variables that can be explained by the pecking order theory (ROA, LIQ, and LnTA). Meanwhile, there is only one variable which is LnTA that could be explained by the trade-off theory. Thereby, it is safe to conclude that, the capital structure of listed real estate companies in Vietnam is more suitable for the pecking order theory instead of the trade-off theory.

5. Conclusion

The results obtained indicate a negative relationship between profitability and debt, which suggest that the real estate companies prefer internal financing rather than external financing. As the most profitable firms are more able to retain profits over time, they become less dependent on debt. Real estate companies dependence on internal financing is also corroborated by the negative and statistically significant relationship between liquidity and debt, as the pecking order theory predicts the negative correlation between the liquidity of a company and the financial leverage. The reason for this is that in those firms with sufficient level of liquidity, cash and other liquid assets act as the primary source of cash and funding for operations instead of borrowings (De Jong and co., 2008). The more cash the company holds, the less dependence they have on the external financing sources.

The negative relationships between profitability and debt, and between liquidity and debt, indicate that the listed real estate companies in Vietnam are having their capital structure movements that are consistent Pecking Order Theory, showing the importance of internal financing for real estate companies, particularly for the smaller ones. The positive relationship between size and debt can also be interpreted, according to the assumptions of Pecking Order Theory, since greater firm's size can lead to fewer problems of information asymmetry, and lower costs of deb for real estate firms, allowing easier access to debt and on more favourable terms for those firms. Therefore, greater company's size contributes to listed real estate companies to obtain debt on more favourable terms.

The fact that tangible fixed assets do not influence debt suggests that real estate companies depend on short-term debt, for which debtholders do not require tangible assets as collateral for the loans. So it appears that size and liquidity are two relevant variables for real estate companies in acquiring more debt, with tangible assets losing significance as potential collateral. The statistically insignificant relationships between growth opportunities (total assets growth rate and net sales growth rate) and debt ratio, and between business risk and debt ration, all indicate that listed real estate companies do not put significant emphasis on the growth opportunities and risk in their capital structure decisions, separating themselves from the assumptions of the Trade-Off Theory.

The empirical results ont the market, however, imply that listed real estate firms in Vietnam adjust, relatively quickly, their actual debt ratio towards the optimal debt ratio. This result suggests that the costs of financial distress are generally greater than the costs that listed real estate firms bear, when adjusting their actual debt ratio towards the optimal debt ratio. With this point, listed real estate companies in Vietnam seem to adopt a financing behaviour in accordance with the expectations of trade-off theory.

In general, the results suggest that Pecking Order and Trade-Off Theories are not mutu- ally exclusive in explaining the capital structure decisions of listed real estate firms in Vietnam. The results obtained allow us to conclude that the capital structure decisions of listed real estate companies can be explained in the context of the assumptions of pecking order theories, more than trade-off theory. On the one hand, SMEs make considerable adjustment of their actual debt towards the optimal level of debt, and size contributes to increased recourse to debt. These results corroborate the assumptions of trade-off theory. On the other hand, more profitable, older SMEs turn less to debt, with increased recourse to debt as a function of their size. Moreover, higher liquidity indicates that listed companies hold more cash or liquid assets in their hand so that they do not have motivations for using external financing sources These results are consistent with the forecasts of pecking order theory.

Therefore, even though the trade-off theory is popularly and primarily mentioned in various studies and academic works relating to finance (Le Dat Chi, 2013), the pecking order theory should be the theory that play the main role in explaning the capital structure decision of the listed companies operating in the real estate industry of Vietnam. If we consider the situation of the market in Vietnam for the last few years, it is not difficult to come up with reasons that justify for this behavior of the companies.

First of all, in the condition of high commercial bank interest rates for the period of 2016 and 2018, the priority of the corporates is the use of internal funds. Furthermore, since early 2019, the Governments have tightened regulations regarding the issuance requirements for corporate bonds, leading to the struggles that many real estate projects had to face in raising capital. Moreover, some structural changes in borrowing approaches have also transformed the capital mobilization strategies of the companies in the sector. Finally, in the context that the Vietnamese stock market is primitive and unstable, the common stock issuance is considered expensive and costly given the fact that the real estate companies in the country is barely generating cash flows. Hence, real estate firms often seek cheaper financing sources from commercial banks when external funds are needed. Last but not least, the common issue of information asymmetry on the market stems from the fact that real estate companies do not want to publish too much internal information to the marker (which is a requirement for new equity issuance). As a result, corporates could not maintain their optimal capital structure at which the value of the enterprise is maximized as described in the trade-off theory in previous chapters.

Considering that Vietnamese market is a relatively disadvantageous market in the context of the the regional areas, where real estate companies are especially important for increased employment and economic growth, we

suggest that policy-makers should give effective support through favourable terms to these companies in obtaining debt. In that way, when internal financing is insufficient, young and small companies could turn to external financing on advantageous terms, allowing these firms to finance efficiently their activities.

Based on the above conclusions, the macro management policies for corporates of the management entities in the upcoming periods should concentrate more on mitigating the problem of information asymmetry on the market by increasing the monitoring activities, supervisory activities and required regular information publishing activities for the listed real estate companies. In addition, the investors should also be educated to increase their capabilities so that they can have a better understanding of the market as well as the companies in their portfolios. Furthermore, the interest rates should be kept at low range and stable, thus small and medium-sized enterprises can reduce their operating costs and easily adjust their capital structure to increase the enterprise value in the future.

References

Bradley M., Jarrell G.A., Kim E.H., (1984), On the Existence of an Optimal Capital Structure: Theory and Evidence, *The Journal of Finance, 39*(3), 857-878.

Brealey R.A., Myers S.C., (2003), Principles of Corporate Finance, *Seventh Edition, McGraw Hill.*

Brigham E.F., Ehrhardt M.C., (2008), Financial Management: Theory and Practice, *Twelfth Edition, Thomson Learning*.

Coase R., (1960), The Problem of Social Cost, *Journal of Law and Economics, 3*, 1-44.

Coase R., (1992), *The Institutional Structure of Production", The American Economic Review, 82*(4), 713-719.

De Wet J.Hv.H. (2006), *Determining the Optimal Capital Structure: A Practical Contemporary Approach", Meditari Accountancy Research, 14* (2), 1-16.

DeAngelo H., Masulis R., (1980), *Optimal Capital Structure under Corporate and Personal Taxation", Journal of Financial Economics, 8*, 3-29.

Abor, J. and Biekpe, N. (2006). *An empirical test of the agency problems and capital structure of South Africa quoted SMEs, SA Journal of Accounting Research, 20*(1), 51-65.

Abor, J. and Biekpe, N. (2009). *How do we explain the capital structure of SMEs in sub-Saharan Africa? Evidence from Ghana, Journal of Economic Studies, 36*(1), 83-97.

Allen, M.T. (1995). *Capital structure determinants in real estate limited partnerships, The Financial Review, 30*, 399-426.

Al-Sakran S.A. (2001). *Leverage determinants in the absence of corporate tax system: the case of non-financial publicly traded corporations in Saudi Arabia, Managerial Finance, 27*, 58-86.

Amidu M. (2007). *Determinants of capital structure of banks in Ghana: an empirical approach, Baltic Journal of Management, 2*(1), 67-79.

Ang J.J. and McConnel J. (1982), *The administrative cost of corporate bankruptcy: a note, Journal of Finance, 37*, 219-216.

Bevan A.A. and Danbolt J. (2002). *Capital structure and its determinants in the United Kingdom – A decompositional analysis, Applied Financial Economics, 12*(3), 159-170.

Bhaduri S. (2002). *Determinants of corporate borrowing: some evidence from the Indian corporate structure, Journal of Economic and Finance, 26*, 200-215.

Booth L., Aivazian V., Demirgue-Kunt A. and Maksimovic V. (2001). *Capital structure in developing countries, The Journal of Finance, 56*(1), 87-130.

Chakraborty, I. (2010). *Capital structure in an emerging stock market: The case of India, Research in International Business and Finance, 24*, 295-314.

Cressy R, Olofsson C (1997). European SME Financing: *An Overview, Special Issue of Small Business Economics, Small Business Economics, 9*, 87-96.

Anderson, T.; Hsiao, C. 1981. Estimation of dynamic models with error components, *Journal of the American Statistical Association 76*, 598–606.

Ang, J. 1976. The intertemporal behavior of corporate debt policy, *Journal of Financial and Quantitative Analysis 11*, 555–566.

Ang, J. 1991. Small business uniqueness & the theory of financial management, *Journal of Small Business Finance 1*, 1–13.

Ang, J.; Chua, J.; McConnell, J. 1982. The administrative cost of corporate bankruptcy: a note, *The Journal of Finance 37*, 219–226.

Arellano, M.; Bond, S. 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations, *Review of Economic Studies 58*, 277–297.
Baskin, J. 1989. An empirical investigation of the pecking order hypothesis, *Financial Management* 18, 26–35.
Bhaird, C.; Lucey, B. 2010. Determinants of capital structure in Irish SMEs, *Small Business Economics 35*, 357–375.
Blundell, M.; Bond, S. 1998. Initial conditions and moment restrictions in dynamic panel data models, *Journal of Econometrics 87*, 115–143.
Bradley, M.; Jarrell, G.; Kim, E. 1984. On the existence of a capital structure: theory and evidence, *The Journal of Finance 39*, 857–878.
Berger, A.; Udell, G. 1998. The economics of small business finance: the roles of private equity and debt markets in the financial growth cycle, *Journal of Banking and Finance 22*, 613–673.
Berggren, B.; Olofsson, C.; Silver, L. 2000. Control aversion and the search for external financing in Swedish SMEs, *Small Business Economics 15*, 233–242.
Bruno, G. 2005. Approximating the bias of LSDV estimator for dynamic unbalanced panel data models, *Economic Letters 87*, 361–366.
Cassar, G.; Holmes, S. 2003. Capital structure and financing of SMEs: Australian evidence, *Accounting and Finance 43*, 123–147.
Chittenden, F.; Hall, G.; Hutchinson, P. 1996. Small firm growth access to capital markets and financial structure: review of issues and an empirical investigation, *Small Business Economics 8*, 59–67.
De Miguel, A.; Pindado, J. 2001. Determinants of capital structure: new evidence from Spanish panel data, *Journal of Corporate Finance 7*, 77–99.
DeAngelo, H.; Masulis, R. 1980. Capital structure under corporate and personal taxation, *Journal of Financial Economics 8*, 3–29.
Degryse, H.; Goeij, P.; Kappert, P. 2010. The impact of firm and industry characteristics on small firms' capital structure, *Small Business Economics 38*, 431–447.
Ezeoha, A. 2008. Firm size and corporate financial leverage choice in a developing economy, *The Journal of Risk Finance 9*, 351–364.
Fama, E.; French, K. 2002. Testing trade-off and pecking order predictions about dividends and debt, *The Review of Financial Studies 15*, 1–33.
González, V.; González, F. 2012. Firm size and capital structure: evidence using dynamic panel data, *Applied Economics 44*, 4745–4754.
Gujarati, D.; Porter, D. 2010. Essentials of econometrics. 4th ed. *New York: McGraw – Hill International.*
Hall, G.; Hutchinson, P.; Michaelas, N. 2000. Industry effects on the determinants of unquoted SMEs capital structure*, International Journal of Economics of Business 7*, 297–312.
Baskin, J. (1989). An empirical investigation of the pecking order hypothesis.*Financial management*, 26-35.
Bevan A.A. and Danbolt J. (2002). Capital structure and its determinants in the United Kingdom – A de-compositional analysis, *Applied Financial Economics*, 12(3), 159-170.
Butters, J. K. (1949). Federal Income Taxation and External vs. Internal Financing. *The Journal of finance*, *4*(3), 197-205.
Chen, J. J. (2004). Determinants of capital structure of Chinese-listed companies. *Journal of Business research*, *57*(12), 1341-1351.
Damodaran, A. (2001). Corporate finance: theory and practice.
Dang Thi Quynh Anh and Quach Thi Hai Yen (2014). Factors influencing the capital structure of listed companies on Ho Chi Minh Stock Exchange (HOSE). *Development and Integration Magazine, Issue 18* (29) – September-October 2014.
De Jong, A., Kabir, R., & Nguyen, T. T. (2008). Capital structure around the world: The roles of firm-specific determinants. *Journal of Banking & Finance*, *32*(9), 1954-1969.
Donaldson, G. (1961). *Corporate debt capacity*.
Eriotis N. (2007). How firm characteristics affect capital structure: an empirical study, *Managerial Finance*, 33(5), 321-331.
Frank, M. Z., & Goyal, V. K. (2007). Corporate leverage: How much do managers really matter?. *Available at SSRN 971082*.
Gruber, M. J., & Warner, J. B. (1977). Bankruptcy costs: some evidence. *The journal of Finance*, *32*(2), 337-347.
Kester, W. C. (1986). Capital and ownership structure: A comparison of United States and Japanese manufacturing corporations. *Financial management*, 5-16.
Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. *The Journal of Finance*, *28*(4), 911-922.
Le Dat Chi (2013). Factors affecting the capital structure decision of finance managers in Vietnam. *Development & Integration Magazine, No. 9 (19) – March- April 2013.*

Michaelas N., Chittenden F. and Poutziousris P. (1999). Financial policy and capital structure choice in UK SMEs: empirical evidence from company panel data, *Small Business Economics*, 12, 113-130.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review*, 261-297.

Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of financial economics*, *5*(2), 147-175.

Myers, S. C. (1984). The capital structure puzzle. *The journal of finance*, *39*(3), 574-592.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics*, *13*(2), 187-221.

Oolderink, P. (2013). Determinants of capital structure: static trade-off theory vs. pecking-order theory: evidence from Dutch listed firms.

Shyam-Sunder, L., & C Myers, S. (1999). Testing static tradeoff against pecking order models of capital structure. *Journal of financial economics*, 51(2), 219-244.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 95-107
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.348

What Drives the Growth of Competitive Advantage? A Study of One of the Largest E-commerce in Indonesia

Yogie Abrar Mustaqiem[1], Aam Bastaman[1], Noverdi Bross[1]

[1] Postgraduate School of Management, Trilogi University, Jakarta, Indonesia

Correspondence: Yogie Abrar Mustaqiem, Postgraduate School of Management, Trilogi University, Jakarta, Pancoran, 12760, Indonesia. Tel: +6285218284248. E-mail: yogieam24@gmail.com

Abstract
Marketing is one of the main activities by entrepreneurs to maintain the viability of their business to grow and earn a profit. In addition, marketing knowledge is also very useful so that companies can compete and survive in the competition. This study aims to examine the effect of Value Creation and Excellent Service on Competitive Advantage, where Brand Equity and Brand Loyalty are the mediating variables. This research uses a descriptive quantitative approach. The population in this study were Bukalapak e-commerce users who live in the Jakarta and surrounding areas, and used a sample of 220 respondents. The method of analysis in this study uses Partial Least Square (PLS). The results of this study indicate that Value Creation has an effect on Brand Equity, Value Creation has an effect on Brand Loyalty, Excellent Service has an effect on Brand Equity, Excellent Service has an effect on Brand Loyalty, Brand Equity has an effect on Competitive Advantage, Brand Loyalty effects on Competitive Advantage, Value Creation. has no effect on Competitive Advantage, Excellent Service affects Competitive Advantage, Value Creation affects Competitive Advantage mediated by Brand Equity, Value Creation has no effect on Competitive Advantage mediated by Brand Loyalty, Excellent Service has an effect on Competitive Advantage mediated by Brand Equity, Excellent Service has an effect on Competitive Advantage Mediated Brand Loyalty.

Keywords: Brand Equity, Brand Loyalty, Competitive Advantage, Excellent Service, Value Creation

1. Introduction

1.1 Introduction

Marketing is one of the main activities for entrepreneurs to maintain the viability of their business in order to grow and earn a profit. In addition, marketing knowledge is also very useful so that companies can compete and survive in the competition. Achieving business objectives is highly dependent on expertise in marketing, production, finance and other fields, as well as the ability to combine these functions so that the organization can run smoothly.

Companies are always required to be able to provide excellent service (service excellence) so that consumers can always look at them. Not only between consumers but also business to business, in order to maintain a competitive advantage in company competition. The author considers this value creation important, because if the company cannot have more value, consumers will find it easy to switch to competitors. Porter (1987) states that competitive advantage exists when there is a harmony between the competencies that differentiate a company and the critical factors for success in the industry that cause the company to perform far better than its competitors.

Dora (2015) revealed in a study the role of value creation to increase competitive advantage. Based on the research results, it is stated that in order to increase competitive advantage, product and technique development must be carried out continuously. Besides that, it must also be able to increase the opportunities that exist as well as possible. Apart from that, it must also operate in an increasingly competitive environment, both in terms of price and attribute development. Nurwinda (2010) suggests in her research that competitive advantage is strongly influenced by service excellence, that is, the better the service excellence you have, the higher the competitive advantage the company will get. In addition, the authors also consider that brand equity also affects competitive advantage, so that in terms of competition, all variables must be properly considered.

The current view of increasingly fierce business competition, which requires companies to create a paradigm to demand readiness in creating value (value creation) to produce products or services in accordance with consumer expectations. Porter (1980) states that competitive advantage can be a strategic choice for companies to seize markets and competition.

In addition, companies still have to be demanded how to have a competitive edge that has a competitive advantage to increase the brand perception of consumers. In order to be accepted by customers so that they have high competitiveness (Aaker, 1991). Brand equity is a set of brand assets and liabilities relating to a brand, its name and symbol, which add to or protect the value provided by a good or service to consumers. Besides that, as a marketer in a company, you must be able to design such products so that they can reflect a brand that can be embedded in consumers' memories.

Perfect service (service excellence) is a part of the company that can describe the condition of the company, whether to describe good service or not. Excellent service (service excellence) according to Barata (2006) is a high quality service provided to consumers, based on certain quality standards to meet and even exceed the needs and expectations of consumers, so that satisfaction is achieved and will lead to increased consumer confidence in service providers. Apart from that, in terms of competition, which is competitive, the company must pay attention to all elements of the resources used. So that the company does not get the wrong target in maintaining the desires and expectations of consumers, so that customer satisfaction can be maintained.

The development of the marketing world is growing rapidly, not only in the business sphere. Currently, we have tried to follow the increasingly broad social sciences, culture and technological aspects that are always evolving. All these things are done only to satisfy consumers and so that what they want to convey can be well received by consumers, because at this time nothing can survive without a good strategy.

Electronic commerce or e-commerce is all buying and selling activities carried out through electronic media. Although the means include television and telephone, nowadays E-Commerce occurs more frequently over the internet. Electronic commerce or also known as e-commerce, is the use of communication networks and computers to carry out business processes. A popular view of e-commerce is the use of the internet and a computer with a Web browser to buy and sell products. Cashman (2007) states that e-commerce or short for electronic commerce, is a business transaction that occurs in an electronic network, such as the internet. Anyone who has access to a computer, has a connection to the internet, and has a way to pay for the goods or services they buy can participate in e-commerce.

Pusparisa (2020) argues that some e-commerce in Indonesia has been hacked. This hack was initiated by Gnosticplayers who claimed around 13 million Bukalapak user data, the user data set was valued at USD 5,000.

Tokopedia also experienced a hack which resulted in data loss of at least 91 million user data and around seven million merchant data were successfully traded with USD 5,000. The type of data taken is in the form of a user's email name and password. In addition, Bhineka also lost data that was traded for USD 1,200. Based on the explanation from this site which says that this action was masterminded by Shiny Hunters, a group of hackers who also attacked Tokopedia.

This study only focuses on one e-commerce, namely Bukalapak, this is due to the curiosity of the author how other elements in the marketing strategy will affect competitive advantage. Meanwhile, based on the results of the three years, Bukalapak has decreased in terms of the number of visitors. E-commerce media such as OLX, Tokopedia, Bukalapak and others compete with each other to be able to continue to increase sales every day, with the increasing value of sales on the site will have a positive effect on the company in terms of customer trust, user friendliness, ease of payment, and others so as to increase the selling value of the website.

Customer value is variable because it is influenced by macro environmental factors, competitive innovation and the emergence of new markets. Due to instability, customer value must be maintained by reflecting value (value creation) following changes by providing services or products in accordance with these changes. The author considers that the difficulty of competitive advantage (competitive advantage) is a problem faced by E-Commerce in Indonesia.

1.2 Prior Studies

Dora (2015) conducted research on the topic of the Role of Value Creation of Crochet and Hand Embroidery Products for Sustainable Competitive Advantage in the MEA Era. This research suggests that in order to remain competitive in the new environment of the 2015 AEC era and to keep abreast of consumer expectations, crochet and hand embroidery handicraft businessmen must continuously develop their products and techniques. In order to develop products, the availability of a design workforce plays an important role in creating unique and innovative designs. They must also be able to seize the opportunities offered by the world by providing added value to products and collaborating with various parties in an effort to expand the marketing of their products. With the globalization of the market, crochet and hand embroidery handicraft businesses will find themselves obliged to operate in an increasingly competitive environment, be it in terms of price or development of new attributes, new markets, or new procedures. Then Wardianto (2020) conducted a research entitled Brand Equity: A Competitive Advantage Innovation Strategy for Small and Medium Enterprises, and this research resulted in a finding that brands as a very important asset can become capital for small and medium enterprises to win their business competition. This fits the RBV concept. Meanwhile, according to the signaling theory brand equity is good as a signal of the company's condition and this can guarantee the company's demand in the long run. Brand management can be done by the SME itself. Hidayat (2018) conducted a study entitled The Effect of Service Excellence on Brand Equity in Batik Air Customers, where the research resulted that based on the statements given by respondents about the excellent service applied by the Batik Air Company at Soekarno-Hatta International Airport, Cengkareng during the August period. - October 2016, excellent service is in the high assessment category. The highest assessment is in the dimension of empathy, while the lowest assessment is in the dimension of responsiveness. Sudarti and Putri (2013) conducted a study on the topic of Increasing Customer Loyalty through Brand Reputation, Customer Satisfaction and Service Quality to Achieve Competitive Advantage, the research resulted that based on the results of research and discussion it can be concluded that reputation, service quality and customer satisfaction can stimulate increased customer loyalty. Likewise, reputation, service quality, satisfaction and loyalty stimulate increased competitive advantage. This study also concludes that customer loyalty does not mediate the influence of reputation, satisfaction and service quality variables on competitive advantage. In addition, Kuvykaite and Piligrimiene (2014) conducted a study entitled Consumer involvement in the creation of brand equity, this research shows that when looking for brand success in the market, it is important to understand consumers, as an active partner, the role of brand value creation. Consumer brand engagement enables companies to use consumer competence in brand equity creation. Consumers who engage in brands experience emotional, functional, and social value, brands create more positive associations for them and lead to increased brand loyalty and brand fairness. Consumer brand engagement is a relatively new research topic and existing research is somewhat fragmented. Research has

mostly concentrated on analyzing consumer brand engagement behavior, examining consumer involvement in the brand equity creation process, and exploring the factors that influence consumer engagement. But there is still a lack of evaluation of integrated consumer brand engagement, consumer involvement into brand equity creation is not thoroughly explored and the answer is not available. There is a need for studies that will provide some answers to the question what customers should be involved in value creation and how should be involved in value creation for higher brand equity objectives.

1.3 Hypothesis Development

Value creation for the company is when the company is able to produce something more than the invested beneficial resources. In other words, if the company is able to manage and utilize its resources so that these resources can create added value for the company, this is called value creation. Nurwinda (2010) states that value creation has a positive effect on increasing or decreasing brand equity. This has also been demonstrated in Kuvykaite's (2014) study. There is a need for studies that will provide some answers to the question - what customers should be involved in value creation and how should be involved in value creation for higher brand equity goals.

H_1 : Value Creation (X1) has a significant positive effect on Brand Equity (Z1)

Mowen & Minor (2002) defines brand loyalty as the extent to which a customer shows a positive attitude towards a brand, has a commitment to a particular brand and intends to continue to buy them in the future. In marketing theory, the company will always provide a good value in the eyes of customers, related to the hope that customers will remain royal and loyal to a marketing. Moreover, Hapsari (2018) shows that the value creation process has a significant effect on trust, brand love and brand loyalty. In addition, trust has been shown to influence brand love and brand loyalty. As an emerging construct in the marketing literature, brand love was found to have an important role in increasing the loyalty of members of the on-line community.

H_2 : Value Creation (X1) has a significant positive effect on Brand Loyalty (Z2).

In the big Indonesian dictionary, it is explained that service is an effort to serve the needs of others. Meanwhile, serving is helping to prepare (take care of) what someone needs. Another opinion says that excellent service is service with high quality standards and always follows the development of customer needs at all times, consistently and accurately. Satisfaction occurs when the ratio of results and inputs of each party in the exchange is more or less the same. Conversely, dissatisfaction occurs when customers believe that the ratio of results to inputs is worse than the company or service provider. In addition, customer satisfaction on transactions is influenced by the ratio of results to other customer input ratios. Nurwinda (2010) proved in her research that service excellence affects brand equity, which means that the better the service excellence will be followed by the increase in brand equity.

H_3 : Service Excellence (X2) has a significant positive effect on Brand Equity (Z1)

Excellent service has four objectives in building relationships with customers, namely preventing defection and helping customer loyalty, providing satisfaction and trust to consumers, keeping customers feeling attention to and prioritize all their needs and desires, and strive to keep customers loyal in using the products or services offered (Nurwinda, 2010). Sudarti (2013) shows that there is a positive effect of service quality on customer / customer loyalty. Nurwinda (2010) proves that service quality has an influence on customer satisfaction. Moreover, Syahfrudin (2020) proves that there is a positive and non-positive effect of service quality on customer loyalty.

H_4 : Service Excellence (X2) has a significant positive effect on Brand loyalty (Z2)

Brand equity, one of the indicators is its ability to maintain stable sales in the long term thanks to customer loyalty and the willingness of customers to repeat their purchases again with the same brand (Hirose et al.,

2002). In gaining an advantage in the competition for a business, both goods and services, every company must at least be able to build a good brand that will always stick in the eyes of customers. Harwani (2017) shows that consumer confidence in high attributes such as credibility and accreditation can create a competitive advantage. In addition, Nurwinda (2010) also stated that the higher the brand equity, the higher the competitive advantage.

H_5 : Brand Equity (Z1) has a significant positive effect on Competitive Advantage (Y)

Competitive advantage is a unique position developed by a company in facing competitors and perhaps the company can consistently outperform the brand (Porter, 1987). In his research, there is a positive effect of customer loyalty on competitive advantage (Sudarti, 2013). In addition, it is also explained that it is found that customer loyalty will affect competitive advantage. Meanwhile, according to Jatmiko (2016) in Meiriyadi (2018), the results of the study found that there was a significant influence between customer loyalty and competitive advantage and according to Pritandhari (2015) in Meiriyadi (2018), who found that the higher customer loyalty, the competitive advantage would be getting higher anyway. The strategy of building customer loyalty in order to achieve competitive advantage, there are a number of factors that influence it.

H_6 : Brand Loyalty (Z2) has a significant positive effect on Competitive Advantage (Y)

Bowman and Ambrosini (2007) argue that the value creation process starts from the company perspective and business strategy level by considering whether additional activities can be tight or loose. Hansever et al., (2004) also stated that there are 3 (three) dimensions that play a role in creating benefits and vice versa, which have the potential to increase costs and risks. Dimensions that affect both value creation and value destroyed are the financial, non-financial and time aspects. Financial benefits relate to both short and long term costs and funding. Dora (2015) states that to keep up with consumer expectations, business people must continuously develop products and techniques. Ardi (2016) stated in his research that in order to compete in a respectful manner in cultivating competition, one must be able to create value.

H_7 : Value Creation (X1) has a significant positive effect on Competitive Advantage (Y)

Strategic competitive advantage can no longer be conveyed based on product characteristics alone, companies need to develop increased profitability through continuous maintenance of relationships with their customers (Napitupulu, 2018). Chang and Chen (1998) in Sudarti (2013) which examines the impact of market orientation on company performance, in the context of service companies, also shows that service quality is closely related to increasing competitive advantage. Musnaini (2011) states that the better and more consistent the quality of service will make a positive and significant contribution to competitive advantage.

H_8 : Service Excellence (X2) has a significant positive effect on Competitive Advantage (Y)

Michael Porter in his research (Ardi, 2016) states that sustainable competitive advantage is related to the amount of value created by the company for stakeholders, especially those with the most important consumer. According to Porter, companies create superior value from their customers by offering products or services at slightly higher prices, so that the added value obtained exceeds the additional costs required to make the product or service. This study considers that the brand strength of a goods or service company will also affect the competitive advantage of a company, or it will also be an obstacle to increasing the existence of a company in the eyes of consumers.

H_9 : Value Creation (X1) has a significant positive effect on Competitive Advantage (Y) mediated by Brand Equity (Z1)

Lee and Cunningham's (2001) in Sudarti and Putri (2013) shows that customer loyalty is one of the sources for building competitive advantage for company's services. Customer loyalty will make the company have a definite source of income (from loyal customers) so that it will make the company able to compete in the long run. Basically, competitive advantage develops from firm value which is able to create value for buyers (Li et al,

2006). Competitive advantage can be defined as the ability of a company to create value that is not owned and cannot be imitated by competitors.

H_{10} : Value Creation (X1) has a significant positive effect on Competitive Advantage (Y) mediated by Brand loyalty (Z2)

Brand equity is related to consumer perceptions, brand equity is related to the general value associated with the brand itself, general value relates to the original brand of the name brand and not only from the physical aspect, brand equity is not absolute but depends on the competence, and brand equity affects financial performance positively. This study considers that brand equity can mediate value creation on competitive advantage, so it needs further study.

H_{11} : Service Excellence (X2) has a significant positive effect on Competitive Advantage (Y) mediated by Brand Equity (Z1)

The company's goal is to be able to be superior to its competitors. Through a defined competitive advantage strategy, it can form the right positioning, maintain customer loyalty, maximize sales, and create effective business performance (Kotler and Amstrong 2003) in Harwani (2017). Meanwhile, excellent service has four objectives in building relationships with customers (1) preventing defection and helping customer loyalty; (2) provide a sense of satisfaction and trust to consumers; (3) to ensure that customers feel cared for and prioritized by all their needs and desires; (4) efforts to maintain customers in order to remain loyal in using the products or services offered.

H_{12} : Service Excellence (X2) has a significant positive effect on Competitive Advantage (Y) mediated by Brand Loyalty (Z2).

2. Method

This research is categorized as descriptive quantitative research. Descriptive research is research designed to describe the characteristics of a population or event. Based on the source, the data is divided into primary data and secondary data. The population of this research is Bukalapak users. Because the population is not limited, it is possible to determine the sample. In addition, Bukalapak users are very diverse and also broad, covering areas in Indonesia. The author limits the population in this study to those who live in Jakarta and its surroundings, this is already representative of all consumers given the high traffic that occurs. The tool that will be used in this research is analysis using Smart PLS. Partial Least Squares is a powerful data analysis method and is often referred to as soft modeling.

2.1 Research Design

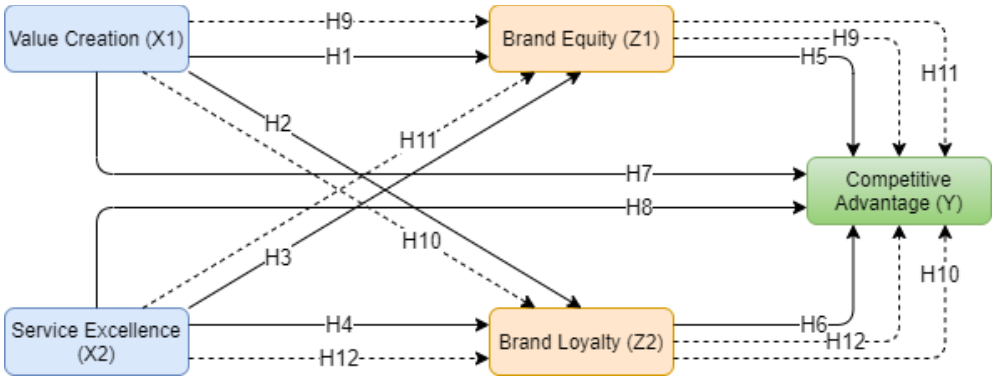


Figure 1: Research Framework

2.2 Structural Equation Modelling (SEM) Analysis

In this research, data processing and analysis uses the Partial Least Square (PLS) approach. PLS is a component or variant based Structural Equation Modeling (SEM) equation model. According to Ghozali (2006), PLS is an alternative approach that shifts from covariance-based to variant-based SEM approaches. Covariance-based SEM generally tests causality and theory while PLS is more of a predictive model. PLS is a powerful analytical method, because it is not based on many assumptions. For example, the data must be normally distributed, the sample does not have to be large. Data analysis in this research is Outer Model Analysis, Inner Model, and Hypothesis Test.

3. Results

3.1 Outer Model Analysis

3.1.1 Convergent Validity

Table 1: Outer Loading Table

Indicators of Variabel	Outer Loading	Validity	Indicator Evaluation
X115	0,761	0,5	Valid
X121	0,628	0,5	Valid
X125	0,712	0,5	Valid
X216	0,534	0,5	Valid
X221	0,541	0,5	Valid
X222	0,644	0,5	Valid
X223	0,613	0,5	Valid
X224	0,623	0,5	Valid
X232	0,535	0,5	Valid
X236	0,612	0,5	Valid
X243	0,620	0,5	Valid
X255	0,568	0,5	Valid
Z112	0,549	0,5	Valid
Z113	0,513	0,5	Valid
Z122	0,526	0,5	Valid
Z131	0,583	0,5	Valid
Z132	0,616	0,5	Valid
Z133	0,619	0,5	Valid
Z141	0,557	0,5	Valid
Z212	0,744	0,5	Valid
Z213	0,649	0,5	Valid
Z221	0,611	0,5	Valid
Z222	0,715	0,5	Valid
Z232	0,537	0,5	Valid
Y17	0,735	0,5	Valid
Y18	0,630	0,5	Valid
Y19	0,614	0,5	Valid
Y23	0,540	0,5	Valid
Y35	0,660	0,5	Valid
Y523	0,668	0,5	Valid

The Outer Model measurement model for individual reflective indicator blocks is said to be high if it correlates more than 0.50 with the construct to be measured. However, for research in the early stages of developing a measurement scale the loading value of 0.50 to 0.60 is considered sufficient (Ghozali, 2006). So it can be said that the outer loading above has met Convergent Validity. Table 1 above shown that each indicators for every variable has outer loading value above 0.50, so it can be said that all of the indicators within each variables are valid for further analysis.

Table 2: Average Variance Extracted (AVE)

Variables	AVE Value	AVE Evaluation
Competitive Advantage	0,548	Valid
Brand Equity	0,618	Valid
Brand Loyalty	0,538	Valid
Service Excellence	0,726	Valid
Value Creation	0,614	Valid

The indicator is considered valid if it has an AVE value above 0.5 or shows that all outer loading dimensions of the variable have a loading value above 0.5 so that it can be concluded that the measurement meets the convergent validity criteria (Ghozali, 2006). Through measurement (outer loading), it states that all variables and indicators meet the criteria so that they are declared valid with a critical value above 0.5.

3.1.2 Discriminant Validity

Table 3: Cross-Loading Table

Indicators of Variabel	Brand Equity	Brand Loyalty	Competitive Advantage	Service Excellence	Value Creation
X115	0,400	0,236	0,211	0,303	0,761
X121	0,324	0,175	0,117	0,273	0,628
X125	0,320	0,232	0,220	0,240	0,712
X216	0,248	0,258	0,260	0,534	0,214
X221	0,269	0,231	0,341	0,541	0,260
X222	0,324	0,313	0,318	0,644	0,194
X223	0,349	0,238	0,245	0,613	0,277
X224	0,268	0,255	0,328	0,623	0,293
X232	0,280	0,293	0,297	0,535	0,199
X236	0,377	0,312	0,321	0,612	0,172
X243	0,395	0,213	0,449	0,620	0,153
X255	0,297	0,267	0,433	0,568	0,311
Y17	0,439	0,258	0,735	0,423	0,234
Y18	0,352	0,298	0,630	0,348	0,116
Y19	0,231	0,243	0,614	0,381	0,208
Y23	0,229	0,204	0,540	0,339	0,168
Y35	0,382	0,353	0,660	0,346	0,160
Y523	0,335	0,364	0,668	0,380	0,144
Z112	0,549	0,255	0,306	0,190	0,339
Z113	0,513	0,242	0,263	0,424	0,236
Z122	0,526	0,200	0,188	0,237	0,347
Z131	0,583	0,280	0,321	0,333	0,336

Z132	0,616	0,283	0,342	0,281	0,215
Z133	0,619	0,247	0,358	0,336	0,244
Z141	0,557	0,279	0,265	0,298	0,271
Z212	0,306	0,744	0,354	0,368	0,257
Z213	0,233	0,649	0,254	0,188	0,173
Z221	0,319	0,611	0,263	0,292	0,252
Z222	0,295	0,715	0,304	0,342	0,210
Z232	0,328	0,537	0,284	0,238	0,085

From the table data above, it can be seen that the comparison, the outer loadings of the indicator in the associated construct must be greater than any cross-loadings of the other constructs. So that latent variables can be said to predict their indicators better than other latent variables.

Table 4: Formell-Larcker Criterion

Variables	Brand Equity	Brand Loyalty	Competitive Advantage	Service Excellence	Value Creation
Brand Equity	0,567				
Brand Loyalty	0,451	0,655			
Competitive Advantage	0,520	0,450	0,644		
Service Excellence	0,535	0,449	0,573	0,589	
Value Creation	0,498	0,307	0,265	0,387	0,702

The Fornell-Larcker criterion is a second approach to assessing discriminant validity. It compares the square root of the AVE value with the latent variable correlation. In particular, the square root of each AVE construct must be greater than the highest correlation with the other constructs. An alternative approach to evaluating the Fornell-Larcker criterion results is to determine whether the AVE is greater than the squared correlation with other constructs. The logic of the Fornell-Larcker method is based on the idea that constructs share more variance with related indicators than with other constructs. Based on the table above, it can be seen that the AVE value is greater than the quadratic correlation with other constructs. This shows that all the constructs in the estimated model meet the criteria for discriminant validity.

3.1.3 Reliability Test

Table 5: Reliability Test Table

Variables	Cronbach's Alpha value	rho_A	Composite Reliability
Brand Equity	0,648	0,649	0,768
Brand Loyalty	0,665	0,680	0,788
Competitive Advantage	0,716	0,725	0,808
Service Excellence	0,764	0,766	0,826
Value Creation	0,612	0,497	0,744

Furthermore, the reliability test can be seen from the Cronbach's Alpha value and the Composite Reliability value. To be able to say that a statement item is reliable, then the Cronbach's alpha value must be above 0.6 and the composite reliability value must be 0.7, so it can be concluded that all constructs meet the reliability value because Cronbach's Alpha and Composite Reliability are above the reliability test standard.

3.1.4 Multicollinearity Test

Table 6: Inner Variance Inflation Factor (VIF) Value

Inner VIF Values	Brand Equity	Brand Loyalty	Competitive Advantage	Service Excellence	Value Creation
Brand Equity			1,728		
Brand Loyalty			1,364		
Competitive Advantage					
Service Excellence	1,176	1,176	1,547		
Value Creation	1,176	1,176	1,372		

The manifest variables or indicators in a formative block must be tested for their multicollinearity. Testing whether or not multicollinearity occurs between indicators in the formative block uses the VIF value. If the VIF value above 10, there is collinearity between indicators in one formative block. From the table results, it shows that the data above is free from multicollinearity.

3.2 Inner Model Analysis

Table 7: R-Square Table

Variables	R-Square	Adjusted R-Square
Brand Equity	0,386	0,380
Brand Loyalty	0,222	0,215
Competitive Advantage	0,419	0,408

The table above shows that the R Square from Competitive Advantage variable has a moderate value, which is 0.419, which means that the effect of independent variables on Competitive Advantage is 41.9%, the rest is influenced by other variables not explained in the study. Meanwhile, the Brand Equity variable reached 0.386 or 38.6% and the Brand Loyalty was 0.222 or 22.2%.

3.3 Hypothesis Testing

Table 8: Hypothesis Testing Result

Hypothesis	Original Sample	T-Statistics	P-Values	Results
Value Creation --> Brand Equity	0,342	4,941	0,000	H_1 Accepted
Value Creation --> Brand Loyalty	0,157	1,965	0,050	H_2 Accepted
Service Excellence --> Brand Equity	0,403	6,936	0,000	H_3 Accepted
Service Excellence --> Brand Loyalty	0,388	5,035	0,000	H_4 Accepted
Brand Equity --> Competitive Advantage	0,275	3,264	0,001	H_5 Accepted
Brand Loyalty --> Competitive Advantage	0,180	2,341	0,020	H_6 Accepted
Value Creation --> Competitive Advantage	-0,072	1,015	0,310	H_7 Rejected
Service Excellence --> Competitive Advantage	0,373	4,804	0,000	H_8 Accepted
Value Creation --> Brand Equity --> Competitive Advantage	0,094	2,552	0,011	H_9 Accepted
Value Creation --> Brand Loyalty --> Competitive Advantage	0,028	1,337	0,182	H_{10} Rejected
Service Excellence --> Brand Equity --> Competitive	0,111	2,919	0,004	H_{11} Accepted

Advantage				
Service Excellence -> Brand Loyalty -> Competitive Advantage	0,070	2,040	0,042	H_{12} Accepted

It can be seen in the table above that a population has a relationship between one variable and another variable. It can be seen in the path coefficient (rho) by looking at the value of the original sample and the statistical T value as a statement of the significance level of the relationship between one variable and other variables. The final diagram model image is based on the results of the hypothesis testing results.

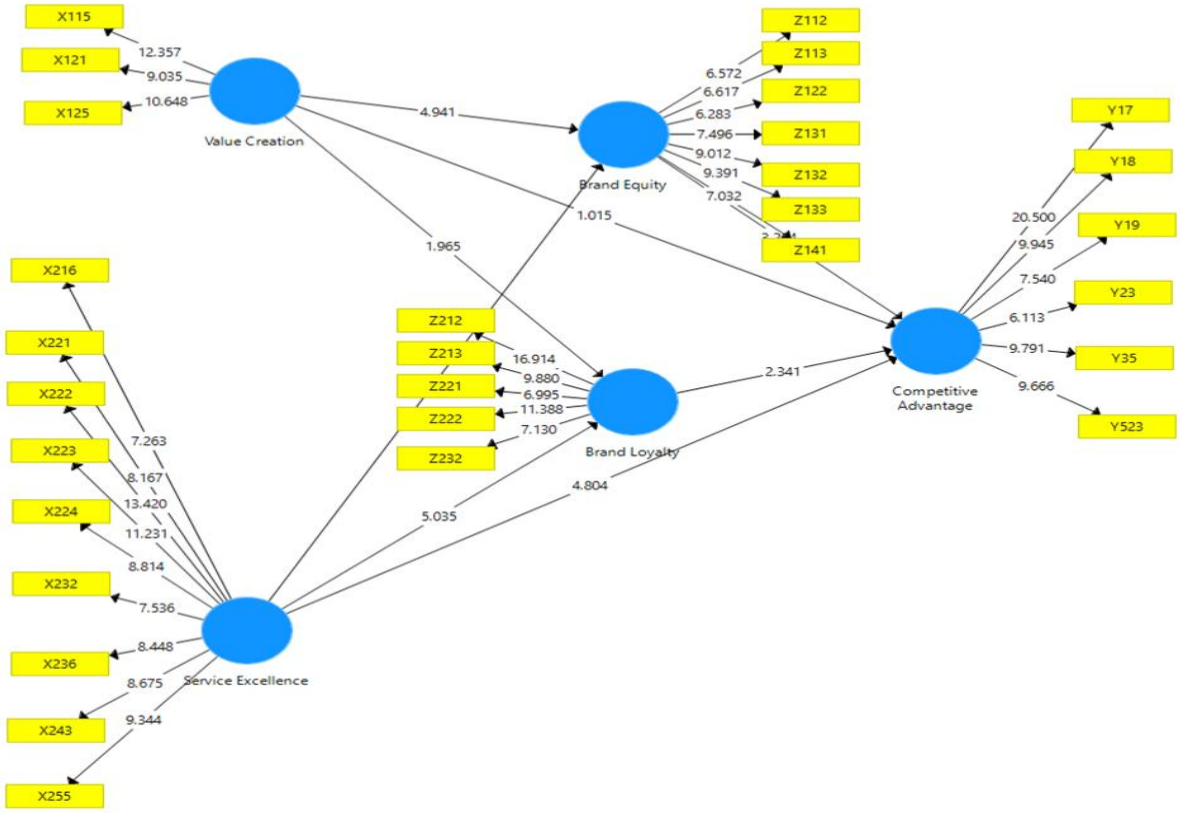


Figure 2: Relationship between variables

4. Discussion

Value Creation expands beyond the boundaries of the creation of individuals or pairs of Service and Value Systems into a dynamic, sustainable translating process that involves Service Systems. This is also in line with research (Nurwinda, 2010) which states that value creation has a positive effect on increasing or decreasing brand equity. Value creation has positive and significant effect to Brand Loyalty, this result is in line with (Hapsari, 2018) which states that the value creation process has a significant effect on brand loyalty, therefore the result of the research states that the variable value creation and brand loyalty is supported. Service Excellence has positive and significant effect to Brand Equity, this result is in line with (Nurwinda, 2010) which research results show that service excellence affects brand equity. Service Excellence has positive and significant effect to Brand Loyalty, this result is in line with Devia et al., (2018), that states service quality has an effect on customer loyalty. Brand Equity has positive and significant effect to Competitive Advantage, this result indicate that the signaling theory of brand equity is good as a signal of the company's condition and this can guarantee long-term company demand (Wardianto, 2020). Brand Loyalty has positive and significant effect to Competitive Advantage, this result is in line with Meiriyadi (2018) which states that loyalty has a positive and significant effect on competitive advantage. Value Creation has negative and insignificant effect to Competitive Advantage, the results of this study are different from (Nurwinda, 2010) which states that value creation has a

positive effect on competitive advantage, we analyze in this case is research examining e-commerce as an object of research, while Nurwinda's research makes tertiary institutions a research object, however In terms of business concentration, both of them present service activities, it's just that services in an educational context are different from shopping services and product delivery. Service Excellence has positive and significant effect to Competitive Advantage, Nurwinda (2010) stated that better service excellence has an influence in increasing competitive advantage. There is an indirect effect of Value Creation on Competitive Advantage mediated by Brand Equity, this mainly because Bukalapak projects business growth of 40%-50% in 2021 in line with the development of the digital economy industry in Indonesia. There is no indirect effect of Value Creation on Competitive Advantage mediated by Brand Loyalty, this should be a concern for e-commerce Bukalapak to pay more attention to how to build value for customers, the application in the field of how to build customer loyalty to the brand will be very important to pay attention to so that it is further improved. There is an indirect effect of Service Excellence on Competitive Advantage mediated by Brand Equity, this mainly because the CEO of Bukalapak is still on his vision to improve various financial services. At least electronic commerce must pay attention to attitudes, concerns, actions, abilities, appearance and actions. In addition, the company's ability to improve services in accordance with consumer expectations will affect brand equity and will also affect competitive advantage. There is an indirect effect of Service Excellence on Competitive Advantage mediated by Brand Loyalty, excellent service that is further enhanced in innovating as e-commerce will affect loyalty to the Bukalapak brand, besides that it will also affect competitive advantage in the competition between e-commerce.

5. Conclusion

Value Creation affects Brand Equity. Value Creation affects Brand Loyalty. Service Excellence affects Brand Equity. Service Excellence affects Brand Loyalty. Brand Equity affects the Competitive Advantage. Brand Loyalty has an effect on Competitive Advantage. Value Creation does not affect Competitive advantage. Service Excellence has an effect on Competitive Advantage. Value Creation affects Competitive Advantage and is mediated by Brand Equity. Value Creation does not affect Competitive Advantage and is mediated by Brand Loyalty. Service Excellence affects Competitive Advantage and is mediated by Brand Equity. Service Excellence affects Competitive Advantage and is mediated by Brand Loyalty.

Acknowledgments

The author of this study would like to thank two supervisors Dr. Aam Bastaman and Noverdi Bross Ph.D for providing guidance and input during the preparation of this study.

References

Aaker, D. A. (1991). Brand Equity Management: In Harnessing The Value Of A Brand. Jakarta: Mitra Utama.

Ardi, H. A. (2016). Building Competitive Advantages for Sustainable Cooperatives through Value Creation. 236-253.

Barata, A. A. (2006). The Principles of Excellent Service. Jakarta: PT. Elex Media Komputindo.

Bowman, C., & Ambrosini, V. (2007). Firm value creation and levels of strategy.

Cashman, & Shelly. (2007). Discovering Computers: Exploring the Fundamental World of Computers. Jakarta: Salemba Empat.

Chang, Tung-Zong dan Su-Jane Chen, 1998, “Market Orientation, Service Quality and Business Perfomance: a Conceptual Model and Empirical Evidence,” Journal of Service Marketing, Vol.12, No.4

Devia, A. N., Aisjah, S., & Puspaningrum, A. (2018). The influence of brand experience and service quality to customer loyalty mediated by customer satisfaction in Starbucks coffee Malang. Management And Economic Journal, 2 (2).

Dora, Y. M. (2015). The Role of Value Creation of Crochet and Hand Embroidery Products for Sustainable Competitive Advantage at Economic Asean Society Era 2015.

Ghozali, I. (2006). Multivariate Analysis Application with SPSS Program (4th edition). Semarang: Diponegoro University Publishing Agency.

Hansever, C., Cook, R. G., & Chaganti, R. (2004). A Model of Value Creation: Strategic View. Journal of Business Ethics, 49, 291-395.

Hapsari, R. (2018). Enhancing Brand Loyalty Through Online Brand Community: The Role of Value Creation Process, Brand Love, and Trust (Unpublished master's thesis). Department of Management, Faculty of Economics and Business, Brawijaya University.

Harwani, Y. (2017). Understanding the Role of Brand Equity as a Competitive Advantage in Decision Making in Higher Education Choices. Journal of Management, 21 (3), 398-417.

Hidayat, R. (2018). The Effect of Service Excellence on Brand Equity. Journal of Communication, 2 (1), 17-35.

Jatmiko M.R. (2016). Analysis of Factores Affecting Costumer Loyalty and Its Impact on Competitive Advantage. Journal of Management Science and Applied Accounting. Volume 7 issues 2, Nov 2016. p-ISSN 2086-3748.

Kuvykaite, R., & Piligrimiene, Z. (2014). Consumer Engagement Into Brand Equity Creation. Social and Behavior Science, 479-483.

Kotler, P., & Armstrong. (2003). Principles of Marketing. Jakarta: Indeks Gramedia.

Lee, Moonkyu dan Lawrence F. Cunningham, 2001, "A Cost/ Benefit Approach to Understanding service Loyalty, Journal of Service Research, Vol.15, No.2

Li, S., Ragu , N. B., & Subba Rao. (2006). The Impact of Supply Chain Management Practice on Competitive Advantage and Organizational Performance.

Mowen, C., & Minor, M. (2002). Consumer Behavior. Jakarta: Erlangga.

Musnaini. (2011). Analysis of Customer Service Quality Towards Competitive Advantages of Services. Theoretical and Applied Management Journal.

Meiriyadi, A., Ali, M., & Jusni. (2019). Strategy to Build Costumer Loyalty to Achieve Competitive Excellence in PT. Semen Tonasa. http://feb.unhas.ac.id/jurnal/index.php/HJM/article/download/178/99/.

Napitupulu, E. V. (2018). The Effectiveness of Value Creation and Marketing Mix Strategy on the Competitiveness of Cosmetics Companies in the Jakarta Area. Journal of Management, 8 (1).

Nurwinda. (2010). The Effect of Value Creation and Service Excellence on Brand Equity and Its Implications for Competitive Advantage (Unpublished master's thesis). Indonesia Education University, Bandung, Indonesia.

Porter, M. E. (1980). Competitive Strategy Techniques for Analyzing Industries and Competitions. The MacMillan Press Ltd.

Porter, M. E. (1987). Competitive Strategy Techniques for Analyzing Industries and Competitions. New York: Free Press.

Pusparisa, Y. (2020). E-Commerce User Data Sold for Tens of Million Rupiah. https://databoks.katadata.co.id/datapublish/2020/05/12/data-pengguna-e-commerce-dijual-puluhan-juta-rupiah

Pritandhari M. (2015). Analysis of Factors Affecting Costumer Loyalty and Competitive Advantage (Study on BMT Amanah Ummah Sukoharjo. ISSN: 2442-9449 Vol.3.No.1 (2015) 50-60

Sudarti, K., & Putri, I. F. (2013). Increasing Customer Loyalty Through Brand Reputation and Satisfaction. Economic and Management Media, 27 (1).

Syahfudin, E., & Ruswanti, E. (2020). Impact of Service Quality and Brand Image on Customers and Loyalty Mediated by Customer Satisfaction in Indonesia: The Banking Industry (Unpublished master's thesis). Esa Unggul University.

Wardianto. K. B. (2020). Brand Equity: A Competitive Advantage Innovation Strategy For Small And Medium Enterprises. 343-351.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 108-119
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.349

The Effect of Share Transaction Determinants and its Impact on JCI on IDX 2010-2020

M. Noor Salim[1], Yohanes Gabriel Obie P[2]

[1] Magister Management, Mercubuana University, Jakarta, Indonesia
[2] Student of Magister Management, Mercu Buana University, Jakarta, Indonesia.
Email: yohanesgabrielobi@gmail.com

Correspondence: Yohanes Gabriel Obie P. E-mail: yohanesgabrielobi@gmail.com

Abstract
The purpose of this study was to determine the effect of inflation, the dollar exchange rate, the yuan exchange rate and the Chinese index partially and simultaneously on the JCI. To determine the effect of inflation, the dollar exchange rate, the yuan exchange rate and the Chinese index partially and simultaneously on the volume of transactions. To determine the effect of inflation, the dollar exchange rate, the yuan exchange rate and the Chinese index on the JCI with transaction volume as an intervening variable. The results of the JCI data analysis show that the dollar exchange rate, inflation and the Chinese index have an effect on the JCI and the yuan exchange rate does not affect the JCI, but simultaneously inflation, dollar exchange rate, yuan exchange rate and the Chinese index have an effect on the JCI. The results of the transaction volume data analysis show that the dollar exchange rate, the yuan exchange rate and the Chinese index have an effect on the volume of transactions, while inflation has no effect on the volume of transactions. Simultaneously, inflation, dollar exchange rate, yuan exchange rate and Chinese index have an effect on transaction volume. The results of the transaction volume data analysis as an intervening variable indicate an influence.

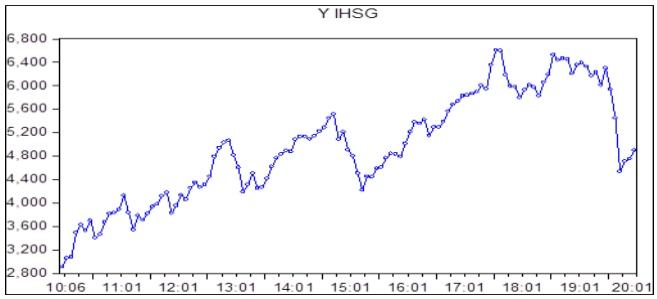
Keywords: Inflation, Dollar Exchange Rate, Yuan Exchange Rate, Chinese Index, JCI and Transaction Volume

1. Introduction

In Indonesia, the economy is currently developing rapidly and there is business economic competition which globally encourages business actors to strive to increase their corporate activities. Economic development in a country can be measured in various ways, one of which is knowing the level of development of the world capital market and securities industries in that country (Marlina and Danica, 2009).

The JCI in every year tends to increase gradually and consistently. For example, at the end of 2015 the JCI was at 4,592 with a transaction volume of 2,805,804,100 and at the end of 2019 the JCI was at 6,299 with a volume of 884,041,200. It can be seen that the volume of transactions at the end of 2015 was greater than in 2016. In general, stock exchanges that have a strong influence on the performance of other stock exchanges are

classified as advanced stock exchanges such as the US, Japanese, British, and so on. In addition, stock exchanges that are in one region can also influence because of their geographic proximity such as the STI Index in Singapore, the Nikkei 225 Index in Japan, the Hang Seng Index in Hong Kong, the KOSPI Index in Korea, the KLSE Index in Malaysia and the SSEC Index in China. In 2020 the world will experience a shock with a new disease for which a vaccine has not been found, namely Covid 19, because of this virus, many countries in the world are experiencing an economic slowdown, including Indonesia. As soon as the Covid 19 virus entered Indonesia, the Indonesian stock market experienced a deep correction, namely more than 5% in 1 day. Many foreign investors withdraw their funds from the Indonesian stock market. This situation prompted the capital market regulators and supervisors to take action. On March 10, 2020 the Indonesia Stock Exchange (IDX) announced the implementation of the trading stop or trading halt policy. Based on that decision, if there is a very sharp decline in the same trading day, then a 30-minute halt trading is applied if it has decreased by 5% and another 30 minutes if it has decreased by 10%. In addition, trading suspends are also applied if the JCI drops by 15%. Sure enough, on trading on March 12, 2020, the JCI had experienced a decline of more than 5%, which means halt trading was carried out for 30 minutes. At that time, the JCI was corrected by 258 points or 5.01% to the level of 4,895 at 15:33 WIB. Since the policy was enacted, at least 6 times stock trading has been subject to halt trading, because it has plunged more than 5%. It happened on March 12, 2020, March 13, 2020, March 17, 2020, March 19, 2020, March 22, 2020 and March 30, 2020. Apart from halt trading, the IDX and OJK also implemented various policies to withstand market panic. Such as changing the lower limit of the stock auto rejection from 10% to 7%. That means a stock that has dropped 7% in a day cannot be traded anymore.



Based on the description above, the title of this research is "THE EFFECT OF SHARE TRANSACTION DETERMINANTS AND ITS IMPACT ON IHSG ON IDX PERIOD 2010 - 2020".

2. Problem Formulation and Research Objectives

From the background that has been described above, the author takes the problem that he wants to know further, namely:

a) How is the effect of inflation on the JCI
b) How does the dollar exchange rate affect the JCI
c) How is the effect of the yuan exchange rate on the JCI
d) How does the Chinese index affect the JCI
e) How are the effects of inflation, dollar exchange rate, yuan exchange rate and Chinese index simultaneously on the JCI
f) How does inflation affect the volume of transactions
g) How does the dollar exchange rate affect the volume of transactions
h) How the yuan exchange rate affects the transaction volume
i) How does the Chinese index affect the volume of transactions
j) How do inflation, dollar exchange rate, yuan exchange rate and Chinese index simultaneously affect the volume of transactions
k) How are the effects of inflation, dollar exchange rate, yuan exchange rate, and Chinese index on the JCI with transaction volume as an intervening variable simultaneously

As for the research objectives, namely:

a) This is to determine the effect of inflation on the JCI
b) This is to determine the effect of the dollar exchange rate on the JCI
c) This is to determine the effect of the yuan exchange rate on the JCI
d) This is to determine the effect of the Chinese index on the JCI
e) To determine the effect of inflation, the dollar exchange rate, the yuan exchange rate, and the Chinese index simultaneously on the JCI
f) This is to determine the effect of inflation on transaction volume
g) This is to determine the effect of the dollar exchange rate on the volume of transactions
h) This is to determine the effect of the yuan exchange rate on the volume of transactions
i) This is to determine the effect of the Chinese index on transaction volume
j) To determine the effect of inflation, the dollar exchange rate, the yuan exchange rate, and the Chinese index simultaneously on the volume of transactions
k) To determine the effect of inflation, the dollar exchange rate, the yuan exchange rate, and the Chinese index on the JCI with transaction volume as an intervening variable.

3. Literature review

3.1 Inflation

In Hisar Pangaribuan research that changes in the rate of inflation that occur increase or increase in food will affect the volume of trade to decrease. Matters that must be considered related to inflation include factors such as the frequency of payment of wages and salaries, the economic structure, and the habits of saving and spending. As long as it remains constant, the price level will be directly proportional to the money supply and inversely proportional to the physical volume of production (Encyclopedia Brittanica, 2012). Inflation calculated based on the Consumer Price Index is an indicator of the development of prices for goods and services consumed by the public. The number of goods and services is very large, but the "basket" of goods and services used to calculate household consumption totals 711 commodities (Central Statistics Agency, 2018).

3.2 Dollar exchange rate

The exchange rate (Currency Exchange) is the price of one currency against another or the value of one currency against the value of another currency (Salvatore 1997: 9). An increase in the exchange rate of a domestic currency is called an appreciation of a foreign currency. A decrease in the domestic exchange rate is called depreciation of foreign currency. The rupiah exchange rate affects company sales (especially for export-oriented issuers). Besides that, it also affects the Cost of Good Sold (for issuers that import raw materials), so that foreign exchange losses can occur. Exchange losses are affected by the depreciation and appreciation of the rupiah.

3.3 Yuan exchange rate

The yuan exchange rate is not the currency used for international trade, but Indonesia often makes transactions with China where transactions between the two countries sometimes use their respective currencies. Therefore, it will affect the value of the transactions that occur. The yuan exchange rate will affect companies that cooperate with China in terms of trading. Therefore, this increase in currency will reduce the company's profits and discourage investors from conducting transactions on the stock exchange.

3.4 Index of China

The Shanghai Stock Exchange Composite Index represents the Shanghai stock exchange in China, which is one of the foreign stock price indices that becomes a reference for investors in making investment decisions. This is because China is one of the countries with an established economic condition in the world. The relationship between China and Indonesia is also growing with the existence of the ASEAN-China Free Trade Agreement which underlies trade liberalization between ASEAN countries, including Indonesia, and China. The increase in

international trade activities in the two countries is expected to be able to bring fresh air to international investment activities between Indonesia and China (David, Indarto and Aprih, 2016).

3.5 Composite Stock Price Index

Every investor wants every money he invests to be in a safe place and provide the best possible return. However, it cannot be denied that behind the return on each investment is inherent risk, to reduce this risk, one of the efforts made is to place the investment in various variations of the character of the investment itself. The state of investing in various stocks like this is called portfolio investment, by placing an investment in one portfolio means spreading investment risk, conditions and theories like this provide new insights into modern portfolios that are often associated with the efficient frontier (Pangaribuan 2010).

3.6 Transaction Volume

Stock trading volume, which is an illustration of the number of transactions that occur in the stock market, both buying and selling transactions. The large volume of transactions that occur illustrates that the existing market is aggressive, and vice versa. This is in line with what Husnan (1998) said that trading volume can be used as a sign of strengthening and weakening of the existing stock market, because it is a function of the market supply and demand. Although Fuadi (2009) found that trading volume showed positive results, it was not significant for stock returns on the Indonesian stock market. Shobriati et al. (2012) found that stock trading volume has a significant effect on the bid and ask spread.

4. Previous Research

Suramaya, Suci Kewal (2012) conducted a study on the effect of inflation, interest rates, exchange rates, and GDP growth on the JCI with the results of the exchange rate having a significant effect. Inflation, Interest Rates, GDP have no effect.

David Triyono, Indarto, and Aprih Santoso (2015) conducted research on the Analysis of the Effect of the Foreign Stock Price Index with Indonesian Macroeconomic Variables on the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange (Period January 2013 August 2015) with the results of the Dow Jones Index, Shanghai, Straits Times Influential (+) on the JCI. Meanwhile, Exchange Rate, Interest Rate, and Inflation have an effect (-) on the JCI.

Mie Mie and Agustina (2014) conducted research on the Analysis of the Effect of the Foreign Composite Stock Price Index on the Indonesian Composite Stock Price Index with the results simultaneously that the ASX Index, FTSE 100 Index, N225 Index, SSEC Index, NYA Index have a significant effect. Partially it can be seen that the ASX Index, FTSE 100 Index, N225 Index, SSEC Index and NYA Index do not have a significant effect on the JKSE Index.

Alfin Desfiandi & Hapzi Ali (2017) conducted research on the Composite Stock Price Index (IHSG) Macro Factor in Investment In Stock (Equity Funds) with the result that the exchange rate has a significant negative effect on the JCI, the STI Index has a significant positive effect on the JCI, Inflation has no effect significantly to the JCI, the DJIA Index has no effect on the JCI.

Widodo (2017) conducted a study on the Analysis of the Effect of the Asian Regional Composite Stock Price Index on the Indonesian Composite Stock Price Index with the results of the Nikkei 225 Index, KOSPI KSII, KLSE variables which are positive and affect the IHSG partially and simultaneously while the Hangseng index variables and Straits times do not. influence parisally but both simultaneously influence the JCI.

5. Framework

Based on a review of the capital structure theory and previous research, it was found that the conclusions and predictions of the influence between the dependent and independent variables and the framework to be studied were as follows:

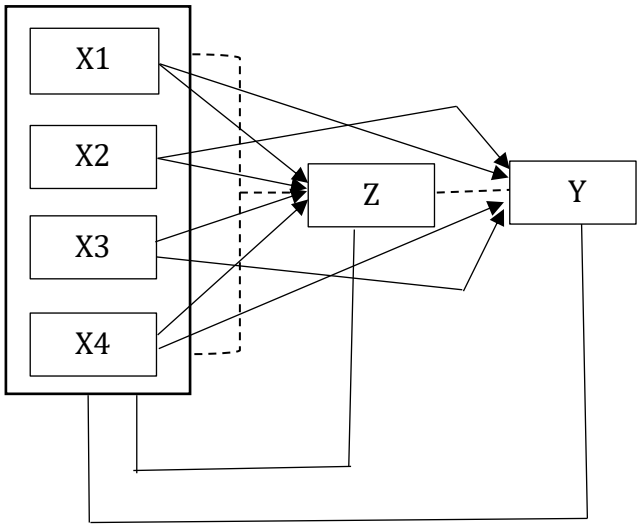


Figure 1: Schematic Research Framework

6. Hypothesis

H1 : It is suspected that there is an effect of inflation on the JCI.
H2 : It is suspected that there is an effect of the dollar exchange rate on the JCI
H3 : It is suspected that there is an effect of the yuan exchange rate on the JCI
H4 : It is suspected that there is an effect of the Chinese index on the JCI
H5 : It is suspected that there are simultaneous effects of inflation, dollar exchange rate, yuan exchange rate and Chinese index on the JCI
H6 : It is suspected that there is an effect of inflation on the volume of transactions
H7 : It is suspected that there is an effect of the dollar exchange rate on the volume of transactions
H8 : It is suspected that there is an effect of the yuan exchange rate on the volume of transactions
H9 : It is suspected that there is an effect of the Chinese index on the volume of transactions
H10 : It is suspected that there are simultaneous effects of inflation, dollar exchange rate, yuan exchange rate and Chinese index on transaction volume
H11 : It is suspected that there is an effect of inflation, dollar exchange rate, yuan exchange rate and Chinese index on the JCI with transaction volume as an intervening variable simultaneously

7. RESEARCH METHODOLOGY

Types of research

This research uses descriptive research type with a quantitative approach. Quantitative research methods are methods that are based on the philosophy of positivism and are used to study specific populations or samples (Sugiyono, 2012). Quantitative data analysis aims to test the proposed hypothesis. The study was conducted to determine the fluctuation of the JCI caused by macroeconomic factors (inflation, dollar exchange rate and yuan exchange rate) and the SSEC index.

Research Data and Variables

This study uses secondary data. The research data starts from June 2010 to June 2020 where in the data there is an influence from the covid 19 pandemic which is currently ongoing. Sources of research data are the official BI website, the yahoo finance site and the idx website.

Variable operations display the size of a variable. In this study, three types of variables were used, namely the independent variable, the intervening variable and the dependent variable. The independent variables of the dollar exchange rate and the yuan exchange rate use the middle exchange rate by Bank Indonesia. Inflation is measured by consumer price index (CPI) data which is obtained from statistical data centers which are monthly data. The SSEC index variable is measured by data for the period January 2010 to June 2020. The transaction volume is used the volume of stock transactions per month for 10 years. The dependent variable data for the IHSG (Composite Stock Price Index) is taken from the IHSG closing price.

Table 1: Operational Variables

Definisi Operasional Variabel		
Variabel	Pengukuran	Skala
IHSG (Y)	$JKSE = \frac{\Sigma Kapitalisasi\ Pasar}{\Sigma Nilai\ Dasar} \times 100$	Rasio
Volume Transaksi (Z)	Volume transaksi perdagangan yang digunakan dalam penelitian ini yaitu nilai transaksi perdagangan saham di BEI yag tercatat secara bulanan selama juni 2010 sampai dengan juni 2020	Rasio
Indeks Cina	$SSEC = \frac{\Sigma Kapitalisasi\ Pasar}{\Sigma Nilai\ Dasar} \times 100$	Rasio
Inflasi	$Inflasi = \frac{IHK_{(t)} - IHK_{(t-1)}}{IHK_{(t-1)}}\ x\ 100\%$	Rasio
Kurs Dollar	$\frac{Kurs\ Jual + Kurs\ Beli}{2}$	Rasio
Kurs Yuan	$\frac{Kurs\ Jual + Kurs\ Beli}{2}$	Rasio

Source: Developed for 2020 analysis

Data Analysis Methods

Data analysis was performed on secondary data in the form of inflation, dollar exchange rate, yuan exchange rate and Shanghai composite index and used time series data. The research test consisted of: classic assumption test (normality test, multicollinearity test, heteroscedasticity and autocorrelation), multiple linear regression analysis and hypothesis testing (t test, F test). Performed using the Eviews software.

8. RESULTS AND DISCUSSION

8.1. Descriptive statistics

The explanation of the data is accompanied by the minimum value, maximum value, mean, variance and standard deviation. The following is a descriptive statistic of research data consisting of the dependent variable, namely IHSG and independent variables, namely: Inflation, Dollar Exchange Rate, Yuan Exchange Rate, Chinese Index, Transaction Volume and JCI.

Table 2: Statistic Descriptive

	X1_KURS_DOLLAR	X2_KURS_YUAN	X3_INFLASI	X4_INDEKS_CINA	Z_VOLUME_TRANSAKSI	Y_IHSG
Mean	11991.07	1848.727	0.047423	2891.732	156.9308	4961.636
Median	13118.24	1966.073	0.043300	2876.401	128.2634	4905.392
Maximum	15178.87	2260.694	0.087900	5940.048	415.0740	6605.631
Minimum	8225.743	1316.732	0.019600	1979.206	55.61621	2913.600
Observations	121	121	121	121	121	121

Source: Data processed 2020

The average value of the Dollar Exchange Rate is IDR 11,991.07. This shows that the middle exchange rate from June 2010 - June 2020 was Rp. 11,991.07, the lowest value was Rp. 8,225 and the highest value was Rp. 15,178. The average value at the Yuan Exchange rate was 1,848,727. This shows that the middle rate from June 2010 - June 2020 was 1,848,727, the lowest value was IDR 1,316,732 and the highest value was IDR 2,260,694. The average value on inflation is 0.047. This shows that the inflation from June 2010 - June 2020 is 0.047, the lowest value is 0.019 and the highest value is 0.087. The average value on the Chinese Index is IDR 2,891. This shows that the Chinese index from June 2010 - June 2020 was Rp. 2,891, the lowest value was Rp. 1,979 and the highest value was Rp. 5,940. The average value of the Transaction Volume is 156.93 billion. This shows that the transaction volume from June 2010 - June 2020 was 156.93 billion, the lowest value was 55.61 billion and the highest value was 415.07 billion. Average value on the Stock Price IndexCombined (JCI) of Rp 4,961. This shows that the JCI from June 2010 - June 2020 was Rp. 4,961, the lowest value was Rp. 2,913 and the highest value was Rp. 6,605.

8.2. Test Data

Classical Assumption Testing Equation 1

Multicollinearity Test Results:

Table 3: Multicollinearity Test Results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	317.8990	1.047098	NA
D(X1_KURS_DOLLAR)	0.011596	2.260227	2.189178
D(X2_KURS_YUAN)	0.665845	2.397444	2.312923
D(X3_INFLASI)	9481787.	1.017853	1.015782
D(X4_INDEKS_CINA)	0.003142	1.168907	1.164389

Source: Data processed 2020

By observing the results of the analysis, there is a VIF value that does not exceed the number 10, it can be concluded that the model does not experience multicollinearity. The results of the Hesteroscedasticity Test can be seen from the following table:

Table 4: Heteroskedasticity Test Results

Heteroskedasticity Test: White

F-statistic	1.457848	Prob. F(14,105)	0.1403
Obs*R-squared	19.52944	Prob. Chi-Square(14)	0.1457
Scaled explained SS	47.19761	Prob. Chi-Square(14)	0.0000

Source: Data processed 2020

Based on the results of the above analysis, the Prob value. Chi-Square on the Obs * R-Squared line shows 0.1457 this value is above the significance level (0.05), so it is concluded that there is no heteroscedasticity in the model. Autocorrelation test results can be seen in the table below:

Table 5: Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.379410	Prob. F(2,113)	0.6851
Obs*R-squared	0.800451	Prob. Chi-Square(2)	0.6702

Source: Data processed 2020

Based on the results of the above analysis, the Prob value. Chi-Square on the Obs * R-Squared line shows 0.6702 this value is above the significance level (0.05), so it is concluded that there is no autocorrelation in the model.

Classical Assumption Test for Equation 2

Multicollinearity test results can be seen from the table:

Table 6: Multicollinearity Test Results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.000489	1.059335	NA
D(X1_KURS_DOLLAR)	1.948815	2.022207	1.963274
D(X2_KURS_YUAN)	3.278669	2.105769	2.009595
D(X3_INFLASI)	0.038726	1.021000	1.015782
D(X4_INDEKS_CINA)	0.067272	1.132899	1.127718

Source: Data processed 2020

By observing the results of the analysis, there is a VIF value that does not exceed the number 10, it can be concluded that there is no multicollinearity in the model. The results of the Hesteroscedasticity Test can be seen in the table:

Table 7: Hesteroscedasticity Test Results

Heteroskedasticity Test: White

F-statistic	0.836601	Prob. F(14,105)	0.6284
Obs*R-squared	12.04234	Prob. Chi-Square(14)	0.6029
Scaled explained SS	9.080305	Prob. Chi-Square(14)	0.8259

Source: Data processed 2020

Based on the results of the above analysis, the Prob value. Chi-Square on the Obs * R-Squared line shows 0.6029, this value is above the significance level (0.05), so it is concluded that there is no heteroscedasticity in the model. Autocorrelation test results can be seen in the table below:

Table 8: Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	6.801907	Prob. F(2,113)	0.0016
Obs*R-squared	12.89422	Prob. Chi-Square(2)	0.0016

Source: Data processed 2020

Based on the results of the above analysis, the Prob value. Chi-Square on the Obs * R-Squared line shows 0.0016, this value is below the significance level (0.05), so it is concluded that there is no autocorrelation in the

model.

8.3. Multiple Linear Regression Analysis

The JCI equation

JCI = 2000.322 + 0.236334 * Dollar + 0.803519 * Yuan - 13694.12 * Inflation - 0.245062 * SSEC

Table 9: The results of the regression analysis of the IHSG hypothesis

Dependent Variable: Y_IHSG
Method: Least Squares
Date: 09/05/20 Time: 12:08
Sample: 2010M06 2020M06
Included observations: 121

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1_KURS_DOLLAR	0.236334	0.109096	2.166293	0.0323
X2_KURS_YUAN	0.803519	0.714548	1.124514	0.2631
X3_INFLASI	-13694.12	3739.787	-3.661739	0.0004
X4_INDEKS_CINA	-0.245062	0.074971	-3.268760	0.0014
C	2000.322	379.0124	5.277723	0.0000

R-squared	0.722109	Mean dependent var	4961.636
Adjusted R-squared	0.712526	S.D. dependent var	920.1399
S.E. of regression	493.3476	Akaike info criterion	15.28075
Sum squared resid	28233458	Schwarz criterion	15.39628
Log likelihood	-919.4853	Hannan-Quinn criter.	15.32767
F-statistic	75.35732	Durbin-Watson stat	0.267845
Prob(F-statistic)	0.000000		

Source: Data processed 2020

To determine the significance of the JCI function model suitability, the F test is used. From the calculation results show that the calculated F value is 75.35732 with a sig F of (0.000), which is smaller than the sig a value of 5%. This shows that the dollar exchange rate, the yuan exchange rate, inflation and the Chinese index simultaneously influence the JCI.

Based on the sig t value (table 4.9), the dollar exchange rate, inflation and the Chinese index have an effect on the JCI because the sig t value is smaller than sig ∞ (5%), while the yuan exchange rate has no effect on the JCI because the sig t value is greater than sig ∞ (5%).

The R2 obtained is 0.712 or 71.2%, meaning that the proportion of JCI variation can be explained by the exchange rate (exchange rate), inflation and the Chinese index of 71.2% and the rest is other factors.

Transaction Volume Equation

VT = 32.64911 + 0.077244 * Dollar - 0.401024 * Yuan - 286.7059 * Inflation - 0.016245 * SSEC

Table 10: The results of the regression analysis of the transaction volume hypothesis

Dependent Variable: Z_VOLUME_TRANSAKSI
Method: Least Squares
Date: 09/28/20 Time: 13:26
Sample: 2010M06 2020M06
Included observations: 121

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1_KURS_DOLLAR	0.077244	0.011763	6.566601	0.0000
X2_KURS_YUAN	-0.401024	0.077045	-5.205048	0.0000
X3_INFLASI	-286.7059	403.2376	-0.711010	0.4785
X4_INDEKS_CINA	-0.016245	0.008084	-2.009555	0.0468
C	32.64911	40.86651	0.798921	0.4260

R-squared	0.552400	Mean dependent var	156.9308
Adjusted R-squared	0.536965	S.D. dependent var	78.17364
S.E. of regression	53.19456	Akaike info criterion	10.82623
Sum squared resid	328240.7	Schwarz criterion	10.94176
Log likelihood	-649.9871	Hannan-Quinn criter.	10.87315
F-statistic	35.78993	Durbin-Watson stat	0.745618
Prob(F-statistic)	0.000000		

Source: Data processed 2020

To determine the significance of the suitability of the VT function model, the F test was used. The results of the calculations show that the calculated F value is 35.78993 with a sig F of (0.000), which means it is smaller than the sig ∞ value of 5%. This shows that the dollar exchange rate, the yuan exchange rate, inflation and the Chinese index simultaneously affect the volume of transactions.

Based on the sig t value (Table 4.10), the dollar exchange rate, the yuan exchange rate and the Chinese index affect the volume of stock transactions because the t value is smaller than sig ∞ (5%). Meanwhile, inflation has no effect on the volume of stock transactions because the value of t is greater than sig ∞ (5%).

The R^2 obtained is 0.536 or 53.6%, meaning that the proportion of variations in the volume of transactions can be explained by the exchange rate (exchange rate), inflation and the Chinese index of 53.6% and the rest is other factors.

Equation of Transaction Volume to the JCI

JCI = 35888,829 + 8,747846

Table 11: The results of the regression analysis of the transaction volume hypothesis

Dependent Variable: Y_IHSG
Method: Least Squares
Date: 10/26/20 Time: 20:00
Sample: 2010M06 2020M06
Included observations: 121

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Z_VOLUME_TRANSAKSI	8.747846	0.721920	12.11748	0.0000
C	3588.829	126.4656	28.37790	0.0000

R-squared	0.552351	Mean dependent var	4961.636
Adjusted R-squared	0.548589	S.D. dependent var	920.1399
S.E. of regression	618.2154	Akaike info criterion	15.70794
Sum squared resid	45480643	Schwarz criterion	15.75415
Log likelihood	-948.3305	Hannan-Quinn criter.	15.72671
F-statistic	146.8333	Durbin-Watson stat	0.391148
Prob(F-statistic)	0.000000		

Source: Data processed 2020

Based on the calculated F value of 146.8333 with a sig F of 0.0000 being smaller than the sig ∞ of 5%, the transaction volume simultaneously affects the JCI. Based on the sig t value, the transaction volume has an effect on the JCI. Based on the adjusted R square test is 0.548589 and the sig t value (0.0000) which is less than 5% sig ∞, there is an influence between the volume of transactions on the JCI. This condition reflects that if there is an increase in transaction volume in the market, it will be followed by an increase in the JCI.

Determination Coefficient R2

The coefficient of determination (R-squared) is a tool used to measure the model's ability to explain variations in the dependent variable. The coefficient of determination has a range of values between 0 and 1. The coefficient of determination is close to 1 indicating that the model can explain variations in the dependent variable. Meanwhile, the coefficient of determination (close to 0) indicates that the model's ability to explain the variation in the dependent variable is limited.

Table 12: The results of the R-squared value of multiple linear regression analysis

No	Persamaan Regresi	R-Square	Koefisien Determinasi
1	IHSG = a + b1X1 + b2X2 + b3X3 + b4X4 + e	R1	0,712526
2	V = a + b1X1 + b2X2 + b3X3 + b4X4 + e	R2	0,536965
3	I = α3 + b1VT + e	R3	0,548589

Source: Data processed 2020

(R2 + R3)> R1
(0.536965 + 0.548589)> 0.712526
1.085554> 0.712526

The above inequality shows that the role of transaction volume as an intervening variable is very important in increasing the influence of the independent variables (inflation, dollar exchange rate, yuan exchange rate, SSE index) on variable Y. When compared to the R-Squared value from direct regression equation analysis (without intervening variables) and by means of intervening, the value of R-Squared which indicates the ability of the independent variables in explaining the dependent variable is greater in value by means of the intervening variable.

9. CONCLUSIONS AND SUGGESTIONS

Conclusions

1. Simultaneously there is an effect of the dollar exchange rate, the yuan exchange rate, inflation and the Chinese index on the JCI. However, partially the dollar exchange rate, inflation and the Chinese index have a significant effect on the JCI, while the yuan exchange rate has no effect on the JCI.
2. Simultaneously there is an effect of the dollar exchange rate, the yuan exchange rate, inflation and the Chinese index on the volume of transactions. However, partially the dollar exchange rate, the yuan exchange rate and the Chinese index have a significant effect on transaction volume, while inflation does not affect the volume of transactions.
3. Transaction volume has a significant effect on the LQ45 index. Based on the coefficient of determination of direct and indirect effects, transaction volume can be an intervening variable between the independent variables (inflation, dollar exchange rate, yuan exchange rate and Chinese index) and the dependent variable on the JCI stock index.

Suggestion

Based on the conclusions described by the author, the suggestions that can be put forward by the author are:

1. Indicators of inflation, dollar exchange rate, yuan exchange rate and stock transaction volume are considered by investors in investing in stocks. This is indicated by the influence of these indicators on the composite stock price index for the period June 2010 to June 2020.
2. Further research should be carried out using other independent variables with a period, especially during the Covid 19 pandemic.
3. Further research should use various other economic indicators such as the Singapore stock index, interest rates and various other indicators in predicting fluctuations in the composite stock price index and the volume of stock transactions.

References

Ahmad Taslim & Andhi Wijayanto. 2015. The Effect of Stock Trading Frequency, Stock Trading Volume, Market Capitalization and Number of Trading Days on Stock Returns.

Akfika Rizky Sabilla and Augustina Kurniasih. 2020. The Effect of Macroeconomics On Stock Index.

Alfin Desfiandi & Hapzi Ali. 2017. Composite Stock Price Index (IHSG) Macro Factor in Investment In Stock (Equity Funds).

Amir Kusnanto. 2017. Analysis of the Impact of Chinese Yuan Devaluation on Stock Prices of Banking Companies Listing on the Indonesia Stock Exchange.

Bank Indonesia. BI 7-day (Reverse) Repo Rate. Available from: https://www.bi.go.id/en/moneter/bi-7day-RR/data/Contents/Default.aspx [Accessed 27 April 2020].

Bank Indonesia. Bank Indonesia Certificate Interest Rates 2010-2016. Available from: http://bi.go.id [Accessed 27 April 2020].

David Triyono, Indarto, and Aprih Santoso. 2015. Analysis of the Influence of the Foreign Stock Price Index with Indonesian Macro Economic Variables on the Composite Stock Price Index (IHSG) in the Indonesia Stock Exchange (Perionde January 2013 - August 2015).
Delta Ananda Arga Putra. 2016. The Effect of Rupiah / US $ Exchange Rate, Inflation and SBI Interest Rate on Composite Stock Price Index (CSPI) in Indonesia Stock Exchange.
Dionysia Kowanda, Sugiharti Binastuti, Rowland Bismark Fernando Pasaribu. 2014. The Influence of Global Stock Exchanges, Asean, and Commodity Prices on the Composite Stock Price Index and the EUR / USD Exchange Rate.
Edward Adedoyin Adebowale & Akindele Iyiola Akosile. 2018. Interest Rate, Foreign Exchange Rate, and Stock Market Development in Nigeria.
Hisar Pangaribuan. 2017. Analysis of the Effect of Changes in Inflation on the Stock Price Index with Trade Volume as an Intermediary Variable (A Study in Indonesia).
I Putu Marta Edi Kusuma and Ida Bagus Badjra. 2016. The Effect of Inflation, Jub, Dollar Exchange Value and Gdp Growth Against Ihsg on the Indonesia Stock Exchange.
I Putu Wahyu Putra Asmara & Anak Agung Gede Suarjaya. 2018. The Effect of Macroeconomic Variables on the Composite Stock Price Index.
Jannah, Miftahul. Chinese investment in 2019 RI has doubled to Rp. 70 trillion. Available from: https://tirto.id/in Investasi-china-ke-ri-2019-naik-dua-kali-lipat-jadi-rp70-trillion-evDC [Accessed 25 April 2020].
Kukuh Listriono & Elva Nuraina. 2015. The Role of Inflation, BI Rate, Dollar Exchange Rate (USD / IDR) in influencing the Composite Stock Price Index.
Lely Fera Triani and Mailani Hamdani. 2013. The Influence of Macroeconomic Factors on the Composite Stock Price Index with Stock Transaction Value as an Intervening Variable (Case Study in Bei Period January 2000-December 2012). Lely Fera Triani. 2012. The Effect of Transaction Value, Dollar Exchange Rate, and SBI Against Ihsg.
Mahmoud Ramadan Barakat, Sara H Elgazzar and Khaled M. Hanafy. 2015. Impact of Macroeconomic Variables on Stock Markets: Evidence from Emerging Markets.
Meryani, Andina. China Shifts Japan to Become the World's Number 2 Economic Power. https://economy.okezone.com/read/2011/02/14/213/424529/china-geser-jepang-jadi-kekuatan-ekonomi-nomor-2-dunia [Accessed 29 April 2020].
Mie Mie and Agustina. 2014. Analysis of the Effect of the Foreign Composite Stock Price Index on the Indonesian Composite Stock Price Index.
Meidiana Mulya Ningsih, Ikaputera Alert. 2018. The Effect of Bi Rate and Inflation on the Composite Stock Price Index (Studies on the Property, Real Estate, and Building Construction Indexes, in Bei, 2013 - 2017).
Oktara, Diko. BKPM: Chinese Investment Drastically Increased in 2016. Available from: https://bisnis.tempo.co/read/839875/bkpm-in Investasi-cina-naik-drastis-di 2016 / full & view = ok [Accessed May 1, 2020].
Resista Vikaliana. 2017. Effect Of Inflation, Interest Rate / Bi Rate, And Rupiah Exchange Rate On Indonesian Composite Index (Idx) At Indonesian Stock Exchange (Ise).
Reza Widhar Pahlevi. 2019. Macroeconomic and Monetary Sensitivity of the JCI.
Riko Sutriyadi. 2019. Influence of Inflation, Indonesian Government Bond / Sun Yield, Dollar Exchange Rate, Gdp Growth Against Lq45 Index: With Ihsg Index As an Intervening Variable on the Indonesia Stock Exchange (Empirical Study on the Indonesia Stock Exchange 2011 - 2016).
Setiadi, Mokhamad, Salim, M. Noor. 2017. Fundamental Factors and Their Influence on the Share Prices of SOEs Listed on the IDX for the 2013-2016 Period.
Suramaya, Suci Kewal. 2012. The Influence of Inflation, Interest Rates, Exchange Rates, and GDP Growth on the JCI.
Tandelilin, Eduardus. Portfolios and Investments - Theory and Application First Edition. Kanisius: Yogyakarta; 2010.
Umi Murtini and Cynthia Septivanie. 2015. Sensitivity of Dollar, Yuan, Yen and Sbi Against Ihsg.
Widodo. 2017. Analysis of the Effect of the Asian Regional Composite Stock Price Index on the Indonesian Composite Stock Price Index.
Winda Wulandari, Deswita Herlina, and Tony S. Chendrawan. 2019. The Impact of Exchange Rates, Sbi, Inflation and the Nikkei 225 Index on the Composite Stock Price Index on the Indonesia Stock Exchange.
Yahoo Finance. Historical Price Jakarta Stock Exchange (JKSE) 2010-2019. Available from: http://finance.yahoo.com [Accessed 25 April 2020].
Yahoo Finance. Historical Price Shanghai Stock Exchange (SSE) 2010-2019. Available from: http://finance.yahoo.com [Accessed 26 April 2020].
Yahoo Finance. Historical CNY / IDR Exchange Rates 2010-2019. Available from: http://finance.yahoo.com [Accessed 28 April 2020].
Yahoo Finance. Historical USD / IDR exchange rates 2010-2019. Available from: http://finance.yahoo.com [Accessed 29 April 2020].

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 134-150
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.351

Analysis of Determinants of Stock Transaction Volume and Its Effect on the LQ45 Stock Price Index on IDX 2010-2020 Period

Mohammad Noor Salim[1], Gabriel Anugrah Pratama[2]

[1] Lecturer, Master of Management, Mercu Buana University, Jakarta, Indonesia
[2] Master of Management, Mercu Buana University, Jakarta, Indonesia

Correspondence: Gabriel Anugrah Pratama, The University of Mercu Buana, Bekasi, Indonesia, 17432.
Tel: 081282649601. E-mail: gabrielanugrahpratama@gmail.com.

Abstract
The LQ45 stock index is a stock index that concerns investors in monitoring the development of company performance that is included in the LQ45 index calculation. Several factors that can cause the movement of the LQ45 stock index include BI interest rates, exchange rates, and global stock exchanges such as the Shanghai Composite Index. The study was conducted to determine the effect of the BI interest rate, dollar exchange rate, yuan exchange rate and the Shanghai Composite Index (SSE) on the LQ45 stock index. The study was conducted using 121 samples consisting of monthly data for all variables from 2010 to 2020. Data analysis was performed using multiple linear regression analysis techniques. The results show the BI interest rate, dollar exchange rate, yuan exchange rate and Shanghai Composite index simultaneously have a significant effect on the LQ45 stock index. BI interest rate and yuan exchange rate partially have a significant effect on the LQ45 stock index. The dollar exchange rate and Shanghai Composite index have no significant effect on the LQ45 stock index. The BI interest rate, dollar exchange rate, yuan exchange rate and Shanghai Composite index simultaneously affect volume of transactions. Partially, BI interest rate, dollar exchange rate, yuan exchange rate have a significant effect on transaction volume, while Shanghai Composite index has no significant effect on transaction volume. Simultaneously, BI interest rate, dollar exchange rate, yuan exchange rate, and Shanghai Composite index have a significant effect on the LQ45 stock index with transaction volume as an intervening variable.

Keywords: LQ45 Index, BI Interest Rate, Dollar Exchange Rate, Yuan Exchange Rate, SSE Index, Transaction Volume

1. Introduction

The stock market is a place for trade long-term instruments. Long-term instruments such as bonds, stocks, mutual funds, as well as derivative and other instruments. One of the long-term instruments that attract investors

is stocks. Capital gains and dividends are benefit from stock investing. However, stock investing also a high risk level of investment, so there are many factors to become attention for stock investing, one of them is through the stock price index.

There are many stocks index in Indonesia Stock Exchange such as LQ45, JII, Kompas 100 and others. The LQ45 index is a concern of investors in stock investment. The index consists of 45 company stocks. The LQ45 stock price index covers at least 75% of the capitalization and transaction value of stock on the IDX. The LQ45 index describes the fluctuations in actively traded stocks and is able to influence stock market conditions. This is because the LQ45 stock price index has a high level of liquidity and is supported by the company's good financial condition. The LQ45 index will move up if the movement of stock prices in general increases. Likewise, the LQ45 stock price index will move down if the stock price movement, in general, has decreased. The increase and decrease in stock prices are reflected in the size of the trading volume of stock. The volume of stock transactions describes the activity of buying and selling stock at one time. This can have an influence on the stock price index, include LQ45 stock price index.

In addition, several macroeconomic factors can influence stock investment activities. According to Zulaikha (2013), economic conditions and macroeconomic variables are factors that have an effect and cause stock prices and its returns have change continously. Investors will see economy condition of the Indonesia through macroeconomic factors. There are many macroeconomic factors such as inflation, interest rates, and exchange rates.

The BI interest rate is a monetary policy instruments based on a Bank Indonesia. The value of interest rates can influence on country's economy. The movement of interest rates is volatile. It depends by monetary policy in order to maintain economic stability.

The exchange rate is a value of exchange in trade between countries. Exchange rates is also means “investing” by investor. According by Murtini & Septivanie (2016), fluctuations in the dollar and yuan exchange rates can influence the movement of the stock price index. Another study by Haryogo (2013) shows the exchange rate moves have opposite direction and is not significant with the stock price index. If the exchange rates depreciates, but is predicted that in the future the foreign currency will appreciate, then investors want to move their investment into exchange rates investment with the hope that when the rupiah depreciates, capital gains will be obtained. Another factor that has an influence on the Indonesian capital market is the global economy. Research by Kabigting and Hapitan (2013) shows there is an increasing integration of stock markets between developing countries Indonesia and China. Research by Tita and Stella (2009) also found the SSE index has a significant effect on the stock price index on the IDX.

In addition, capital market movements can be affected by world conditions. According to the OECD, the Covid-19 pandemic affected the third largest economic and social sphere in the 21st century after the 9/11 terror attacks and the 2008 global financial crisis. The Covid-19 pandemic is predicted to create a global recession in 2020 and have a bigger impact than the financial crisis. Global events that occurred in 2008 according to the IMF (2020). This can have an impact on the investment in Indonesia. Based on the phenomena and the differences in the results of the research, the writer needs to study further and conduct research with the title "Analysis of the Determinants of Stock Transaction Volume and Its Effect on the LQ45 Stock Price Index on the IDX 2010-2020 Period.

2. Literature Review and Hypothesis Development

2.1 LQ45 Stock Price Index

The LQ45 stock price index is an index that has a membership of 45 public companies. The LQ45 index is a stock price index with high liquidity and has a large market capitalization and passes the selection based on criteria according to Tandelilin (2010). The LQ45 Index began on February 1, 1997, primarily measuring liquidity in terms of the value of transactions on the regular market. Then there was an increase in the liquidity

measure of the LQ45 stock price index which starting in January 2005, its number of trading days and the number of stock transactions.

Criteria for issuers in the LQ45 stock price index:

- Listed on the Indonesia Stock Exchange for a minimum period of 3 months
- Issuer activity in the regular market is measured by the value and volume of transactions
- Total trading days on the regular market
- Market capitalization in a certain period
- Financial scope and future development of a company

The Indonesia Stock Exchange reviews the performance of company included in the LQ45 stock index. The IDX conducts an evaluation once in a quarter of the order movement of company in the LQ45 index. Change of company in the LQ45 index is carried out once in a period of one semester in early February and August.

2.2 Interest Rate

The Bank Indonesia interest rate [BI Rate] is a policy interest rate that reflects the monetary policy stance or stance set by Bank Indonesia and announced to the public. At 2016, BI set the BI Rate as the interest rate policy in Indonesia. On 19 August 2016, BI increased its strength of monetary operations, Bank Indonesia implemented the BI 7-Day (Reverse) Repo Rate policy.

Interest rates is included in macroeconomic factors. The interest rate is percentage of the interest which is determined by Bank Indonesia. The percentage of interest rates is adjusted with economic conditions to maintain economic stability in Indonesia. So that interest rates becomes attention of investors.

According to Cahyono in Raharjo (2010), an increase of percentage of interest can reduce company income. This has an impact on increasing interest costs and decrease company profits. The decline in profit has a negative effect on investors, so that investors will shift their investment into the form of deposits. Therefore, changes in interest rates can affect the LQ45 stock price index.

2.3 Dollar Exchange Rate

The exchange rate is the value of the domestic currency needed to be equal in value with one unit of foreign currency according to Sukirno (2007). Each country generally has a different currency. In trade transactions between countries, the exchange rate is very important. Trade between Indonesia and other countries is influenced by the exchange rate of the rupiah and the value of other countries. So that the exchange rate has an influence on the economy in Indonesia.

The depreciation of the rupiah resulted in an increase in the value of the company's cost of capital. This increase has an impact on decreasing company profits, and has an influence on investors' interest to invest capital in stocks. The relationship between exchange rate fluctuations and investor interest in stocks is in accordance with the results of research by Hapzi (2017) which states that the exchange rate (USD / IDR) moves in a significant opposite direction to the JCI. Another study according to Agustina and Fitry (2014), there is no significant influence between exchange rates and stock price index movements.

2.4 Yuan Exchange Rate

Based on Central Statistics Agency (2019), imports of goods from China have a percentage of 29.08% or the same value as US $ 67.2 billion. In addition, China also the second largest investment in Indonesia. Trade and investment between countries causes the effect of the yuan exchange rate to the value of the rupiah currency.

Exchange rate able to attracts investors. Investors have profit when the selling value greater than the purchase value. Investments of exchange rates have an impact on stock investment in the capital market. When the value of the rupiah strengthens against a foreign currency, investors will move their funds from stocks to investing in foreign currencies. But, if the rupiah depreciates, investors will sell foreign currency and invest it to stock. Hastina's research (2018) also found that exchange rate movements were unidirectional and significantly affected stock price movements. Research by Anisa and Ari (2018) states that there is no significant effect of exchange rates on the stock price index. This is in line with research by Jaka (2015), where the IDX 30 and JII stock price index movements are not influenced by the yuan exchange rate.

2.5 Shanghai Stock Exchange

The Shanghai Stock Exchange (SSE) is a stock market from China. According to the 2017 China Index fact book, SSE is one of the five largest stock markets in the world based on its market capitalization value of US$ 3.5 trillion per year in February 2016, and its also the second largest stock market in Asia. Shanghai Stock Exchange was founded on November 26, 1990 with operations starting on December 19, 1990 under the supervision of the China Securities Regulatory Commission (CSRS). Most of the companies listed on the SSE are state-owned companies that have an influence on China's economic growth.

International trade has brought economies integration of countries in the world. The capital market is a reference for the country's economy, and have a relationship due to trade between countries. Other countries investment into domestic capital market is the beginning of the integration of the capital market between countries. Based on research by Kabigting and Hapitan (2013), capital markets in developing countries, Indonesia and China, are increasingly integrated. According to Fikri's research (2012), the China HangSeng index has a movement that is in line with the JCI and is significant. Other research results by Dionysia et al. (2014) stated that the Chinese stock index (SSE) had a significant influence on the JCI.

2.6 The Effect of Stock Transaction Volume on the LQ45 Index

In stock investing, various kinds of stock information is important. Some of the information includes speculation, such as the price and volume of transactions and rate of return on stocks according to Pratama (2015). Investors' reviews are mainly carried out on the volume of stock transactions to facilitate transactions of stock. The volume of stock transactions includes the total transactions that have been carried out at an issuer of stock at a certain time on the stock exchange.

Ong's research (2011: 101) in Haosana (2012) includes trading volume is information in stock transactions in the form of trading activities during a session. Transaction volume provides an overview of the level of stock liquidity. The greater volume of stock transactions indicates high transaction activity in a stock. But, when the volume of stock transactions decrease, it indicates low transaction activity in a stock.

In addition, according to Aliwu (2013) trading volume has an effect on the rate of return of company stock with a directly proportional relationship if the volume of traded stock increases, the increase also occurs in stock returns. This is reinforced by the results of research by Fikri (2012), the volume of stock trading has a unidirectional movement and has a significant effect on the composite stock price index. However, according to research by Faizatul, et al. (2017) found no significant effect of transaction volume on the composite stock price index.

2.7 Thinking Framework

The mindset in this study is presented in the following figure:

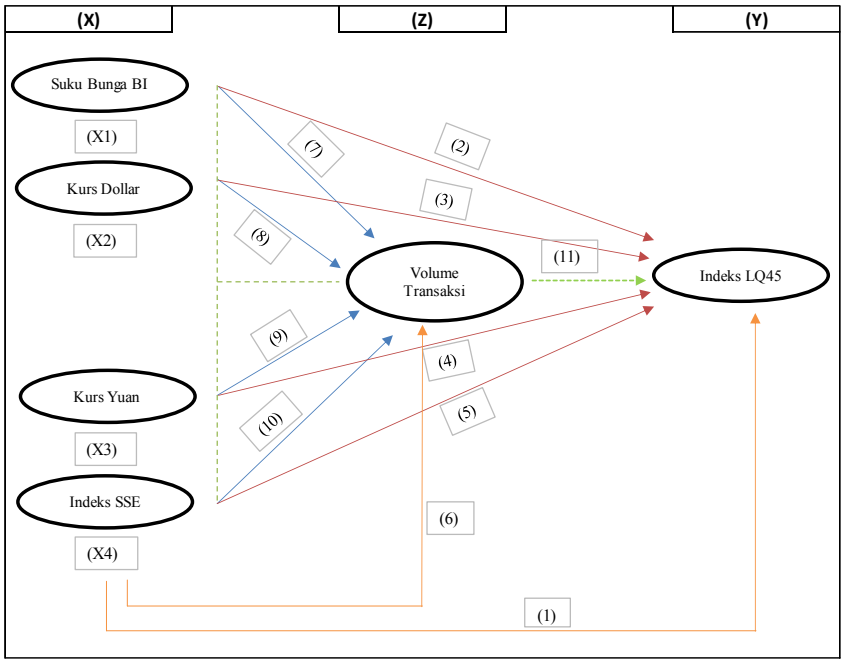


Figure 2.1: Thinking Framework

Based on the picture of the framework above, the research hypothesis is:

H1: *It is suspected that there is an effect of the BI interest rate, dollar exchange rate, yuan exchange rate, SSE index simultaneously on the LQ45 index.*

H2: *It is suspected that there is an effect of the BI interest rate on the LQ45 index.*

H3: *It is suspected that there is an effect of the dollar exchange rate on the LQ45 index.*

H4: *It is suspected that there is an effect of the yuan exchange rate on the LQ45 index.*

H5: *It is suspected that there is an effect of the SSE index on the LQ45 index.*

H6: *It is suspected that there are simultaneous effects of the BI interest rate, dollar exchange rate, yuan exchange rate, and SSE index on transaction volume.*

H7: *It is suspected that there is an effect of BI interest rates on transaction volume.*

H8: *It is suspected that there is an effect of the dollar exchange rate on the volume of transactions.*

H9: *It is suspected that there is an effect of the yuan exchange rate on the volume of transactions.*

H10: *It is suspected that there is an effect of the SSE index on transaction volume.*

H11: *It is suspected that there are simultaneous effects of the BI interest rate, dollar exchange rate, yuan exchange rate, and SSE index on the LQ45 index through transaction volume as variable intervening.*

3. Research Methods

In this study, the data were taken from previously documented data (secondary data) with time series form. Population in this study were all data on the BI interest rate, dollar exchange rate, yuan exchange rate, SSE index, transaction volume and the LQ45 stock price index. The sample in this study is a saturated sample where all the variable time series data are sampled in the study. The sample of monthly data is 121 samples from June 2010 to June 2020.

Sources of data received from Bank Indonesia publications in the form of BI interest rates, dollar exchange rates and yuan exchange rates, the yahoo finance website includes SSE index data, and the LQ45 stock price index, OJK publications in the form of stock transaction volume from the period of June 2010 to June 2020. The data testing in this research includes the classic normality assumption test, the classic multicollinearity assumption test, the heteroscedasticity classic assumption test and the autocorrelation classic assumption test. The data analysis technique was analyzed using multiple linear regression. Hypothesis testing is done by using the F test

and t test with a significance level of 5%. For the statistical analysis this paper relies on software PC e-views version 9.0.

Table 3.1: Operational Definition of Variables

Variable Names	Measures
Stock Index LQ45	Value of LQ45 Stock Index from June 2010 - June 2020
Transaction Volume	Value of Stocks Transaction Volume from June 2010 - June 2020
Interest Rates BI	BI Interest Rates from June 2010 - June 2020
Dollar Exchange Rate	(Buy Rate + Sell Rate)/ 2
Yuan Exchange Rate	(Buy Rate + Sell Rate)/ 2
Stock Index SSE	Value of Stock Index SSE from June 2010 - June 2020

4. Results

4.1 Descriptive Statisic

Descriptive statistical calculations are presented in the following table:

	LQ45	**SBI**	**DOLLARS**	**YUAN**	**SSE**	**VOLUME**
Mean	831,9854	0.0605	11988.44	1846.23	2782.6	156,5873
Median	838,005	0.06	13092.53	1965,371	2849,884	127.8619
Maximum	1105.76	0.0775	15867.43	2260,694	4611,744	415,074
Minimum	566.1	0.0425	8225,743	1316,732	1979,206	55.61621
Std. Dev	130.9448	0.010757	2168,386	300,076	516.2383	78.40965
Skewness	-0.034132	-0.014923	-0.376115	-0.6158	0.62714	1.247453
Kurtosis	1.956765	1,819787	1.623717	1,835697	3,97448	3.874635
Jarque-Bera	5.464993	6.96897	12.30003	14.36219	12,61416	34,94773
Probability	0.065057	0.03067	0.002133	0.000761	0.001823	0.000000
Sum	99838.25	7.26	1438613	221547.6	333912	18790.48
Sum Sq. Dev.	2040437	0.01377	5.60E + 08	10715425	31713737	731620.8

4.2 Classical Assumption Testing

4.2.1 Test of Normality

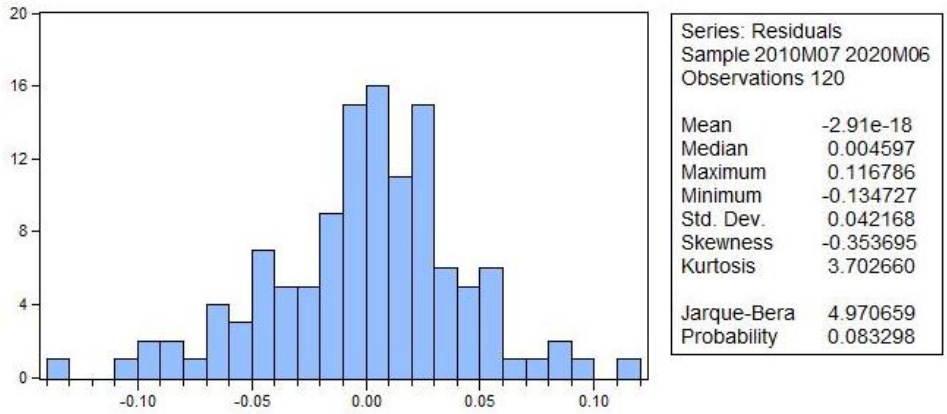


Figure 4.1: Normality Test Results of Equation 1

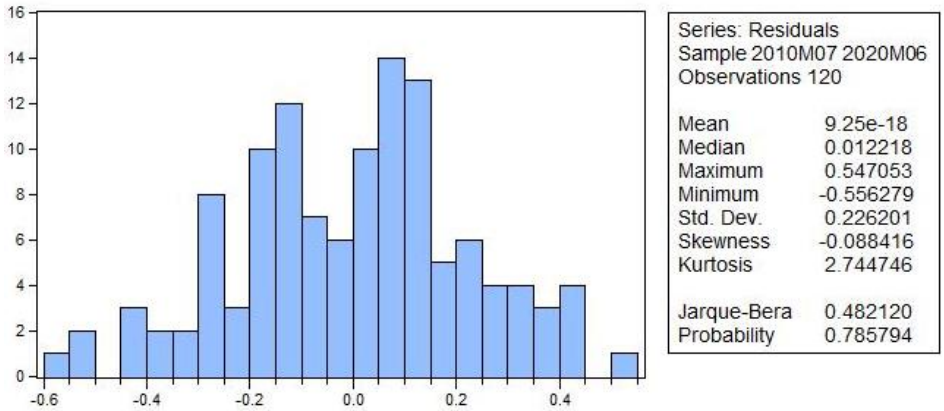


Figure 4.2: Normality Test Results of Equation 2

The probability value of the normality test results in equations 1 and 2 are 0.08 and 0.78. Based on the hypothesis test, both values exceed the significance level (0.05) where according to the hypothesis test, Ho is accepted and Ha is rejected. So data (residual) are normally distributed.

4.2.2 Test of Multicollinearity

Table 4.2 Multicollinearity Test Results for Equation 1

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	1.73E-05	1.047281	NA
D(X1_SBI)	0.015274	1.032281	1.020675
D(X2_DOLLAR)	0.069066	2.630550	2.574408
D(X3_YUAN)	0.101733	2.542208	2.473444
D(X4_SSE)	0.004621	1.056393	1.055463

Table 4.5 Multicollinearity Test Results for Equation 2

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.000462	1.047281	NA
D(X1_SBI)	0.408458	1.032281	1.020675
D(X2_DOLLAR)	1.846909	2.630550	2.574408
D(X3_YUAN)	2.720468	2.542208	2.473444
D(X4_SSE)	0.123566	1.056393	1.055463

The value of centered variance inflation factor in the multicollinearity test in equations 1 and 2 each shows lower than 10. So that multicollinearity is not found.

4.2.3 Test of Heteroscedasticity

Table 4.3: Heteroscedasticity Test Results of Equation 1

Heteroskedasticity Test: Harvey

F-statistic	1.886660	Prob. F(4,115)	0.1175
Obs*R-squared	7.389812	Prob. Chi-Square(4)	0.1167
Scaled explained SS	7.207407	Prob. Chi-Square(4)	0.1253

Table 4.6 Heteroscedasticity Test Results for Equation 2

Heteroskedasticity Test: Harvey

F-statistic	2.073730	Prob. F(4,115)	0.0887
Obs*R-squared	8.073247	Prob. Chi-Square(4)	0.0889
Scaled explained SS	7.719744	Prob. Chi-Square(4)	0.1024

The prob-chi square value of the heteroscedasticity test results in equations 1 and 2 are 0.1167 and 0.0889 which is exceed the significance level (0.05). It indicates that Ho is accepted and Ha is rejected. So that the regression model is free from heteroscedasticity.

4.2.3 Test of Autocorrelation

Table 4.4 Autocorrelation Test Results for Equation 1

F-statistic	0.256241	Prob. F(2,113)	0.7744
Obs*R-squared	0.541772	Prob. Chi-Square(2)	0.7627

Table 4.7 Autocorrelation Test Results for Equation 2

F-statistic	2.116325	Prob. F(2,114)	0.1252
Obs*R-squared	4.331719	Prob. Chi-Square(2)	0.1147

The prob-chi square value of the autocorrelation test results in equations 1 and 2 are 0.7627 and 0.1147. Based on the hypothesis test, the prob-chi square exceed the significance level (0.05) which indicates that Ho is accepted and Ha is rejected. So that, autocorrelation is not found.

4.3 Hypothesis Testing

Table 4.8 Results of Multiple Linear Regression Analysis of Variable Y

Dependent Variable: Y_LQ45
Method: Least Squares
Date: 03/11/21 Time: 01:36
Sample: 2010M06 2020M06
Included observations: 121

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	502.5785	75.26352	6.677584	0.0000
X1_SBI	-41.47269	8.943748	-4.637060	0.0000
X2_DOLLAR	-0.012262	0.015716	-0.780209	0.4369
X3_YUAN	0.364855	0.108374	3.366623	0.0010
X4_SSE	0.018755	0.016839	1.113790	0.2677

R-squared	0.632166	Mean dependent var	831.3591
Adjusted R-squared	0.619482	S.D. dependent var	130.5799
S.E. of regression	80.54970	Akaike info criterion	11.65607
Sum squared resid	752637.6	Schwarz criterion	11.77160
Log likelihood	-700.1922	Hannan-Quinn criter.	11.70299
F-statistic	49.83988	Durbin-Watson stat	0.314892
Prob(F-statistic)	0.000000		

Table 4.9 Results of Multiple Linear Regression Analysis of Variable Z

Dependent Variable: Z_VOLUME
Method: Least Squares
Date: 03/11/21 Time: 01:41
Sample: 2010M06 2020M06
Included observations: 121

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	79.45035	51.23939	1.550572	0.1237
X1_SBI	-16.78952	6.088902	-2.757397	0.0068
X2_DOLLAR	0.047128	0.010700	4.404718	0.0000
X3_YUAN	-0.233121	0.073781	-3.159633	0.0020
X4_SSE	0.015677	0.011464	1.367503	0.1741

R-squared	0.524311	Mean dependent var	156.9308
Adjusted R-squared	0.507908	S.D. dependent var	78.17364
S.E. of regression	54.83822	Akaike info criterion	10.88710
Sum squared resid	348838.8	Schwarz criterion	11.00262
Log likelihood	-653.6693	Hannan-Quinn criter.	10.93402
F-statistic	31.96424	Durbin-Watson stat	0.629249
Prob(F-statistic)	0.000000		

Table 4.10 Results of Linear Regression Analysis for Variable Z on Variable Y

Dependent Variable: Y_LQ45
Method: Least Squares
Date: 03/11/21 Time: 01:46
Sample: 2010M06 2020M06
Included observations: 121

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	643.5935	18.71785	34.38395	0.0000
Z_VOLUME	1.196486	0.106849	11.19787	0.0000

R-squared	0.513078	Mean dependent var	831.3591
Adjusted R-squared	0.508986	S.D. dependent var	130.5799
S.E. of regression	91.50044	Akaike info criterion	11.88696
Sum squared resid	996307.4	Schwarz criterion	11.93317
Log likelihood	-717.1608	Hannan-Quinn criter.	11.90572
F-statistic	125.3923	Durbin-Watson stat	0.400051
Prob(F-statistic)	0.000000		

Based on the results of hypothesis testing carried out, the following research and discussion results were obtained:

H1 **:** *The Influence of the BI Interest Rate, Dollar Exchange Rate, Yuan Exchange Rate, and SSE Index Simultaneously Against the LQ45 Index*

Based on the regression analysis, the Prob F-Statistic value shows (0.000000) and is below 0.05. The results of hypothesis testing show that Ho is rejected and Ha is accepted, indicating that all independent variables (SBI, dollar exchange rate, yuan exchange rate and SSE index) simultaneously have a significant effect on the LQ45 index variable during the period June 2010 to June 2020.

The coefficient of determination (Adjusted R-squared) based on table 4.8 obtained a value of 0.619 or 61.9%. These results indicate that 61.9% of the total variation in the dependent variable is account for by independent variables, BI interest rate, the dollar exchange rate, the yuan exchange rate and the SSE index, while the remaining 38.1% is account for by other variables.

H2 **:** *The Effect of BI Interest Rates on the LQ45 Stock Index*

SBI, based on the results of hypothesis testing, has a probability value (0.0000) below the significance level (0.05). These results indicate that Ho is rejected and Ha is accepted, shows that the SBI indicator has a significant effect on the LQ45 stock index. The coefficient of SBI (- 41.47269) shows the direction of the SBI movement against the LQ45 stock index. The figure (41.47269) shows 1% increase in BI interest rates and if there is no change in the value of the other independent variables, there will be a decrease of 4147% in the LQ45 stock index.

When the interest rates increase, investors will interest to invest capital in deposit, and it can reduce interest of investing in stocks. In addition, the uncertainty over the movement of the LQ45 stock index due to the influence of the Covid-19 pandemic has made investors tend to shift their investment to safer investments such as deposits and savings. Research by Farikhah and Nurhadi (2019) also states that the BI interest rate has a movement in the opposite direction to the composite stock price index in the 2015-2018 research year. However, according to different research results obtained by Hari Gursida (2018), the effect of the BI interest rate is not significant on the LQ45 index in the 2010-2015 research year.

H3 **:** *The Effect of Dollar Exchange Rate on the LQ45 Stock Index*

The dollar exchange rate, based on the results of hypothesis testing, has probability value (0.4369) over the significance level (0.05). These results indicate that Ho is accepted and Ha is rejected, shows that the dollar exchange rate does not have a significant effect on the LQ45 index. The coefficient of dollar exchange (-0.012262). The negative sign indicates, opposite movement between the dollar exchange rate and the LQ45 stock index. The number (0.012262) shows 1% increase in the dollar exchange rate indicator and if there is no change in the value of the other independent variables, there will be 1.2% decrease in the LQ45 stock index.

Novita's research (2011) found that the dollar exchange rate had a negative effect on the LQ45 index in 2011. The dollar exchange rate did not have a significant effect on the LQ45 index was influenced by long-term investors in the stock market who expected dividends. The results of research by Sihombing and Rizal (2014) also show that long-term investors in the capital market in Indonesia tend not to pay attention to the rupiah exchange rate against the dollar as a reference for investment. However, different results obtained by Riko Sutriyadi (2019) show that the dollar exchange rate has a unidirectional movement and has a significant effect on the LQ 45 index in the 2011-2016.

H4 **:** *The Effect of the Yuan Exchange Rate on the LQ45 Stock Index*

The yuan exchange rate, from the results of hypothesis testing, has a probability value (0.0010) below the significance level (0.05). These results indicate that Ho is rejected and Ha is accepted, shows that the yuan exchange rate has a significant effect on the LQ45 stock index. The coefficient of yuan exchange rate (0.364855). A positive sign shows the movement of the yuan exchange rate have same direction with the LQ45 stock index. The coefficient value indicates, if there is 1% increase in the yuan exchange rate and there is no change in the value of the other independent variables, then there will be 36.4% increase in the LQ45 stock index.

Novita's research (2011) shows that the yuan exchange rate moves in the same direction with the LQ45 index significantly. In addition, Indonesia is the country with biggest coal export in the world. Based on the total export of Indonesian coal commodities, 33% of which imported by China (the Indonesian Coal Mining Association). With the depreciation of the rupiah against the yuan, Chinese investors are interested in investing in Indonesia so as to increase the LQ45 stock index.

H5 ***:*** *The Effect of the SSE Index on the LQ45 Stock Index*

Based on the results of regression analysis, the SSE index has a probability value (0.2677) and its above the significance level (0.05). These results indicate that Ho is accepted and Ha is rejected, shows that the SSE index has no significant effect on the LQ45 index. The coefficient of SSE index (0.018755). A positive sign on the coefficient indicates that the SSE index is moving in the same direction as the LQ45 index. The coefficient value indicates, 1% increase in the SSE index and if the independent variable does not experience a change in value, there is an increase of 1.8% in the LQ45 index variable.

The positive influence is due to China being the country with the second largest investment value in Indonesia and China being Indonesia's export destination country. Different research by David and Santoso (2015) which state that the SSE index has a significant unidirectional movement towards the IHSG in the 2013-2015. Different research are thought to be due to the global economy which is currently unstable due to the Covid-19 pandemic in 2020.

H6 **:** *The Influence of the BI Interest Rate, Dollar Exchange Rate, Yuan Exchange Rate, and SSE Index Simultaneously Against Transaction Volume*

The F-Statistic Prob value (0.000000), the simultaneous test results are below the significance level (0.05). This result shows that Ho is rejected and Ha is accepted, indicating that (SBI, dollar exchange rate, yuan exchange rate and SSE index) simultaneously have a significant effect on transaction volume during the period June 2010 to June 2020.

The coefficient of determination (Adjusted R-squared) based on table 4.9 shows the value of 0.507 or 50.7%. These results indicate that 50.7% of the total variation in the transaction volume is account for by independent variables, the BI interest rate, the dollar exchange rate, the yuan exchange rate and the SSE index, while the remaining 49.3% is account for by other variables.

H7 **:** *The Effect of BI Interest Rates on Transaction Volume*

Based on the results of multiple linear regression analysis in table 4.9, SBI has a probability value (0.0068), this value is below the significance level (0.05), so it can be concluded that the SBI indicator has a significant effect on transaction volume. The SBI indicator coefficient shows the value (- 16.78952). The negative sign shows the direction of movement of the SBI against the transaction volume. The figure (16.78952) shows that if the BI interest rate indicator increases by 1% while the other independent variables are fixed, the transaction volume will decrease by 1678%.

An increase in interest rates can have an effect on stock investment. Investors tend to shift the form of stock investment into savings or time deposit investments. Meanwhile, if the interest rate decreases, this can reduce the company's interest expense and can increase the company's profit, so that by decreasing interest rates, investors tend to invest in stocks which have an impact on the increase in transaction volume. Different research results obtained by Murni (2010) in Enggal (2016) which states that interest rates have a negative effect on transaction volume. Different research results are due to the influence of the Covid-19 pandemic on research data in 2020.

H8 **:** *The Effect of Dollar Exchange Rate on Transaction Volume*

In Table 4.9 the results of multiple linear regression analysis, the dollar exchange rate has a probability value of (0.0000). This value is below the level of significance (0.05). The results indicate that the dollar exchange rate has a significant effect on transaction volume. The coefficient on the dollar exchange rate indicator shows a number (0.047128). A positive sign indicates the linier direction between the dollar exchange rate indicator and the volume of transactions. The figure (0.047128) shows that if the dollar exchange rate indicator increases by 1% while the other independent variables are constant, the transaction volume will increase by 4.7%.

The results showed that the dollar exchange rate had a direct effect on the volume of stock transactions. This is thought to be due to the conditions of the Covid-19 pandemic, investors tended to invest long-term in companies in the LQ45 index amid market uncertainty and tended not to pay attention to fluctuations in the IDR / dollar exchange rate. Different research results obtained by Merdekawati (2007) and Pramaditya (2008) in Enggal (2016) which show that the dollar exchange rate has a negative effect on trading volume. Different research results are due to the covid-19 pandemic which has an impact on the world economy in 2020.

H9 **:** *The Effect of the Yuan Exchange Rate on the Transaction Volume*

From the test results of multiple linear regression analysis in Table 4.9, it can be seen that the yuan exchange rate has a probability value of (0.0020), this shows that the probability value is below the significance level (0.05). Based on these results, the yuan exchange rate indicator has a significant effect on the volume of transactions. The coefficient value of the yuan exchange rate indicator is (-0.233121). A negative sign on this value indicates that the yuan exchange rate indicator is not in line with the volume of the transaction. The coefficient value indicates that every 1% increase in the yuan exchange rate while the other independent variables are constant, the transaction volume will decrease by 23.3%.

The results showed that the yuan exchange rate had a significant negative effect on transaction volume. It is assumed when the yuan exchange rate increases, investors will tend to invest in the yuan, resulting in a decrease in transaction volume. Conversely, when the IDR / yuan exchange rate decreases, investors tend to sell the yuan currency and move their investment to stock investments, resulting in an increase in transaction volume. In addition, the company's dependence on imported raw materials has made the IDR / yuan exchange rate an important concern for investors. The increase in the yuan exchange rate resulted in an increase in the cost of importing raw materials from China, which could reduce corporate profits. This also make a decrease value in the volume of transactions on the LQ45 stock index.

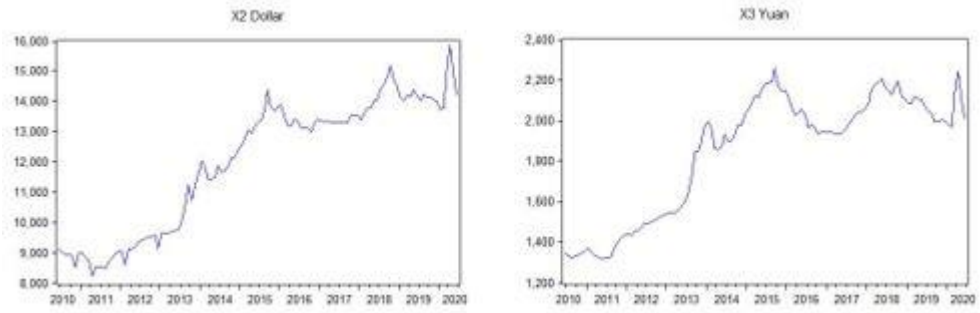


Figure 4.4 Fluctuations in Dollar and Yuan Exchange Rates

Based on the picture above, fluctuations in the dollar exchange rate and the yuan exchange rate have the same fluctuation. This shows that the yuan exchange rate has the same ability to influence the world economy. Based on the results by Merdekawati (2007) and Pramaditya (2008) in Enggal (2016) which shows that exchange rates have a negative effect on trading volume. The correlation of movements between the dollar exchange rate and the yuan exchange rate shows that the yuan exchange rate can also have an influence on transaction volume.

H10 **:** *The Effect of SSE Index on Transaction Volume*

Based on table 4.9 the results of multiple linear regression analysis, it is shown that the Shanghai Stock Exchange index has a probability value of (0.1741). This value is above the significance level (0.05), and it can be concluded that the Shanghai Stock Exchange index does not have a significant effect on transaction volume. The coefficient on the Shanghai Stock Exchange index variable shows a number (0.015677). The positive sign on the coefficient shows the movement of the Shanghai Stock Exchange index in the direction of the transaction volume. The coefficient value indicates that every 1% increase in the Shanghai Stock Exchange index, while the other independent variables are fixed, the transaction volume will increase by 1.56%.

The results showed that the Shanghai Stock Exchange index did not have a significant effect, but have linier movement with the transaction volume. Based on the results by Sudiartha (2017) in Melinda Tety (2018), it shows that there is no effect of the Shanghai Stock Exchange on the composite stock price index. This shows that the relationship between the two countries's capital markets is still low. So that, the movement of the Shanghai Stock Exchange index doesn't have influence on the desire of investors to invest in stocks which is indicated from the volume of stock transactions.

H11 **:** *The Influence of the BI Interest Rate, Dollar Exchange Rate, Yuan Exchange Rate and SSE Index Simultaneously Against LQ45 Index With Transaction Volume As an Intervening Variable*

Based on the results of regression analysis, the transaction volume has a probability value (0.0000) and is below the significance level (0.05). The results of hypothesis testing show that Ho is rejected and Ha is accepted, indicating that the transaction volume has a significant effect on the LQ45 index. The transaction volume coefficient is (1.196486). A positive value shows the movement of transaction volume in the direction of the

LQ45 index. The coefficient value indicates that for every 1% increase in transaction volume, the LQ45 index will increase by 119%.

The results showed that an increase in transaction volume can increase the LQ45 index. The LQ45 index is a large cap index in the capital market. Large cap companies on the LQ45 index attract investors to invest in the LQ45 index. With an increase in the volume of transactions at companies in the LQ45 index, the LQ45 stock price index can increase.

The coefficient of determination (Adjusted R-squared) based on Table 4.10, the value is 0.508 or 50.8%. These results indicate that 50.8% of the total variation in the dependent variable is account for by independent variables, while the remaining 49.2% is account for by other variables.

4.4 Direct and Indirect Effects

Table 4.16: Value of the Coefficient of Determination of Regression Equations

No	Regression Equations	R-Square	Coefficient of Determination
1	Y = α1 + β1 * SBI + β2 * DOLLAR + β3 * YUAN + β4 * SSE	$R1^2$	0.619482
2	Z = α2 + β5 * SBI + β6 * DOLLAR + β7 * YUAN + β8 * SSE	$R2^2$	0.507908
3	Y = α3 + β9 * VOLUME	$R3^2$	0.508986

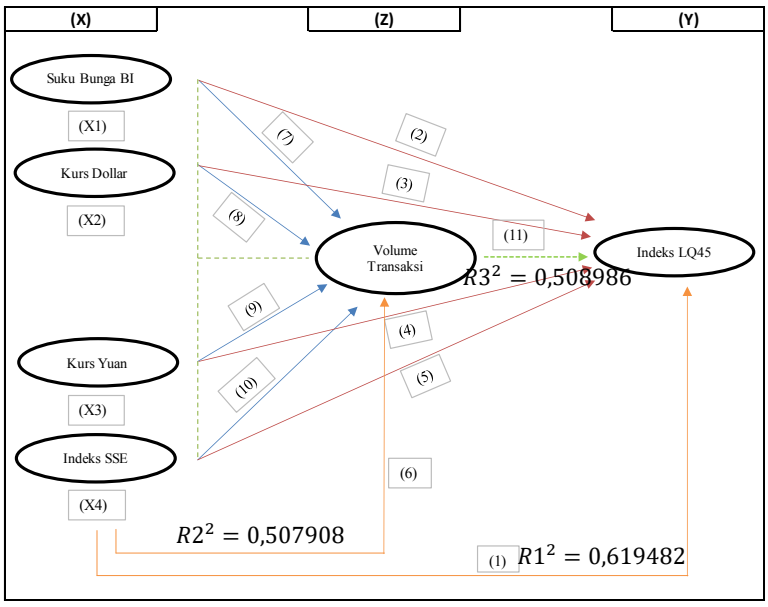


Figure 4.3: Direct and Indirect Effects

Based on the direct and indirect effect chart, the coefficient of determination correspond to the inequality [$R2^2$ + $R3^2$] > $R1^2$. This shows the coefficient of determination of the independent variable BI interest rate (X1), dollar exchange rate (X2), yuan exchange rate (X3), and SSE index (X4) on the dependent variable LQ45 index (Y) through the intervening variable transaction volume (Z) is larger than direct effect without intervening variable, so that the influence of the BI interest rate, dollar exchange rate, yuan exchange rate and SSE index on the LQ45 index variable is mediated by the transaction volume.

5. Conclusions and Suggestions

Conclusions based on hypothesis testing that has been done:

1. Simultaneously, BI interest rate, dollar exchange rate, yuan exchange rate and SSE index have a significant effect on the LQ45 index.
2. Partially BI interest rate has a significant negative effect on the LQ45 index. This is because an increase in interest rates can make investors shift their investment to deposits so that investors' interest in investing in stocks diminishes.
3. Partially the dollar exchange rate has no significant influence and has the opposite direction of movement to the LQ45 index. Because long-term investors expect returns from dividends, so they tend not to pay attention to movements in the dollar exchange rate in investing stocks.
4. Partially yuan exchange rate has a significant effect on unidirectional movements on the LQ45 index. Indonesia, as a global coal exporting country, has become one of the suppliers of China. With the weakening of rupiah exchange rate against yuan, Chinese investors will increase their investment in Indonesia thereby increasing the LQ45 stock index.
5. Partially, SSE index does not have significant effect with unidirectional movements on the LQ45 index. This unidirectional movement is caused by China's economic strength in Asian regional index as well as Chinese investment which has always increased every year in Indonesia. SSE index, which has no significant effect, is thought to be due to world economic conditions which are currently experiencing the effects of the Covid-19 pandemic in 2020.
6. Simultaneously, BI interest rate, dollar exchange rate, yuan exchange rate and SSE index have a significant effect on transaction volume.
7. Partially, BI interest rate has a significant effect with the opposite movement on transaction volume. Because the increase in interest rates increases investor interest in investing in time deposits and reduces interest in stock investment which also has an impact on the volume of stock transactions.
8. Partially the dollar exchange rate has a significant effect on unidirectional movements on transaction volume. This is thought to be a result of the global economic conditions that have been affected by Covid-19 pandemic, so that investors tend to invest long-term in companies in the LQ45 index amid market uncertainty.
9. Partially yuan exchange rate has a significant effect on the direction of movement negatively on transaction volume. This is due to the company's dependence on imports of raw materials, which makes the IDR / Yuan exchange rate an important concern for investors. The increase in the yuan exchange rate resulted in an increase in the cost of importing raw materials from China, thereby reducing company profits which resulted in a decrease in the volume of stock transactions on the LQ45 index.
10. Partially, SSE index does not have a significant effect on unidirectional movements on transaction volume. This unidirectional movement resulted from China becoming the country with the fifth largest capital market capitalization in the world. This has an influence on the movement of the large cap stock index LQ45. So that the increase in SSE index causes an increase in volume of transactions.
11. Transaction volume has a significant effect on the LQ45 index. Based on the coefficient of determination of direct and indirect effects, transaction volume can be an intervening variable between the independent variables (BI interest rate, dollar exchange rate, yuan exchange rate and SSE index) and the dependent variable LQ45 index.

Based on the results of this study, the author's suggestions for further research:

1. Based on the research results, the public (investors) need to pay attention to the pattern of an increase in the dollar exchange rate and a decrease in the yuan exchange rate. This is indicated by the significant effect of the dollar exchange rate with a unidirectional movement and the yuan exchange rate with an opposite movement to the volume of stock transactions. The decline in interest rates is also a concern with its significant impact on transaction volume. So that with a decrease in interest rates, people can allocate more capital in stock investments.
2. Based on the results of this study, further research is suggested to conduct research using other independent variables, because with the independent variables in this study the BI interest rate, dollar exchange rate,

yuan exchange rate and the Shanghai Stock Exchange index can only have an effect of 50.7% on the transaction volume, while 49.3% of the transaction volume is still influenced by other variables.

3. Based on the research results, it is recommended that the government pay attention to movement in transaction volume. The increased transaction volume also shows an increase in the stock price index where the stock price index is a picture of the economy in Indonesia. The government must look at the results of this study to become an indicator of the economy in Indonesia.

References

Anggraeni and Salim. Fundamental Factors Affecting Stock Returns and Its Impact on the Frequency of Stock Trading in the Consumer Goods Industry Sector On the IDX 2010-2017. Journal of Business and Management (BISMA). 2019 13 (2): 122-130

Aini, Izzatul and Maslichah. Analysis of the Effect of Macroeconomic Variables on the Index LQ45 Share Price. 2017

Ariansyah, Jaka. The Effect of the Euro and Yuan Exchange Rates on the JII index, Pefindo 25 Index, and the IDX 30 Index on the IDX. 2015

Arpit Bhargava et. Al. Factors Affecting Stock Prices in India: A time series Analysis. 2016

Aurora, Tona and Riyadi, Agus. The effect of inflation, interest rates, and exchange rates on the price index LQ45 shares on the IDX for the period 2007-2011. 2013

Dicky and Saparila. The Effect of the Global Stock Price Index on the Stock Price Index Combined (IHSG). 2018

Endri. Challenges to the Indonesia Stock Market against the Effects of Global Stock Markets and Macroeconomic Variables. 2019

Faizatul et. Al. Influence of stock trading volume, inflation rate, interest rate, exchange rate, Tax Rate Against the Composite Stock Price Index (IHSG). 2017

Febriaty, Hastina. The Effect of Economic Indicators on Movement of Composite Stock Price Index in Indonesia Stock Exchange. 2018

Febrina et. Al. The Influence of Macroeconomic Variables and Foreign Stock Prices on the Index Joint Stock Price. 2018

Fera, Lely. Factors that influence changes in the stock price index in Jakarta Islamic Index for 2011. 2011

Gayatri and Ni Wayan. Effect of Stock Trading Volume, Profit Volatility, Dividend Yield, and company size on stock price volatility. 2018

Gunawan, Didik and Arfah, Yenni. The Impact of the American-Chinese Trade War on Global Capital Market Integration. 2019

Gursida, Hari. The Influence Of Inflation Rate, Interest Rate, And Money Supply On Share Price LQ45. Synergy. 2018 March; 8 (1)

Hartina, Dede. Mining Sector Index: Impact of Inflation, Interest Rates and Exchange Rates. 2018

Hunjra et. Al. The impact of macroeconomic variables on Stock Prices in Pakistan. 2014

Hussein, Mahfoud. The Effect of Inflation, Interest Rates and Exchange Rates on Stock Prices Comparative Study Among Two Gcc Countries (Kingdom Saudia Arabia and United Arab Emirate). 2012

Kabigting, Leila C. & Rene B. Hapitan. Financial Integration Among The Asean 5 + 3 Stock Markets: A Preliminary Look At The First 10 Years Of The New Millenium. Chinese Business Review. 2013 Vol 12 (5)

Khumalo, John. Inflation and Stock Prices Interactions in South Africa: VAR Analysis. 2013

Kowanda, Dionysia, Binastuti, Sugiharti and, Pasaribu, Rowland. Stock Exchange Influence Global, ASEAN, and Commodity Prices Against the Composite Stock Price Index, Dan EUR / USD Exchange Rate. Journal of Accounting and Management. 2014 August; 25 (2)

Laksmiwati, Mia and Rolanda, Ivo. Effect of 5 Movements from 25 Largest Stock Exchange in The World on Indonesia's Exchange. 2019

Noodles, Noodles and Agustina. Analysis of the Effect of the Foreign Composite Stock Price Index on Indonesian Composite Stock Price Index. Journal of Micro-Political Economy Entrepreneurs. 2014 October; 4 (2)

Mulyana, Bambang and Rini, Rahmatika. Effect of Solvency, Profitability, Size Company and Stock Beta on Firm Value and Its Impact on Return The shares of automotive sub-sector companies and their components which are listed on the stock exchange Indonesian Securities Period 2010-2016. 2017

Murtini and Septivanie. Sensitivity of Dollar, Yuan, Yen and SBI Against JCI. Review Journal Accounting and Finance (JRAK). 2016 August; 12 (2)

Mutakif, Fikri and Nurwulandari, Andini. Effect of Stock Trading Volume, Exchange Rate and the Hang Seng Index against the Movement of the Composite Stock Index. Journal Accounting and Business. 2012 July; 7 (2)

Novita, Nora. Effect of trading volume, interest rates, and exchange rates on the LQ45 Index along with the LQ45 index prediction ARIMA model. 2012

Novita, Sri. Analysis of the Effect of Foreign Exchange Rates USD, EUR, CNY and JPY on the LQ45 Index In the 2011 Period on the Indonesia Stock Exchange. 2011

Nuhu A. Sansa. The Impact of the COVID-19 on the financial Markets: Evidence from China and USA. 2020

Raghutla et. Al. Macroeconomic Variables and Stock Prices in Emerging Economies: A Analysis panel. 2018

Rizaldi and Galuh. Analysis of the Effect of Macro Variables on the Return of the Sharia Stock Index in Indonesia: A Study on the Phenomenon of the Global Trade War. 2020

Said, Ardoni and Aty Herawati. Stock Price Index (CSPI) In Indonesia Stock Exchange (IDX) 2014-2018 period. 2020

Salim, M. Noor, and Santosyah, M. Redho. Financial Performance Of The Manufacturing Sector Consumptive Goods Sub-Sector In Indonesia. International Journal Of Engineering Technologies And Management Research. 2019 August; 6 (8)

Santosya, M. Redho, Salim, M. Noor. Financial Performance Of The Manufacturing Sector Consumptive Goods Sub-Sector in Indonesia. 2019 Setiadi, Mokhamad, Salim, M. Noor. Fundamental Factors and Their Influence on Prices BUMN Shares Listed on the IDX for the 2013-2016 Period. 2017

Sugiyono. Quantitative Research Methods, Qualitative and R & D. Bandung: Alfabeta. 2009

Sukirno, Sadono. Introduction to Macroeconomic Theory, 3rd Edition. Jakarta: PT. Raja Grafindo Persada.2007

Sunariyah. Introduction to Capital Market Knowledge. UPP STIM YKPN: Yogyakarta; 2006

Tandelilin, Eduardus. Portfolios and Investments - Theory and Application First Edition. Canisius:Yogyakarta; 2010

Tarek et. Al. The Associations between stock prices, inflation rates, interest rates are still persistent empirical evidence from stock duration model. 2018

Triyono, David, Indarto, and Santoso, Aprih. Analysis of the Influence of the Foreign Stock Price Index and Indonesian Macroeconomic Variables Against the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange (Period January 2013-August 2015). 2015

Wahyuni, Evilin, Salim, M. Noor. The Effect Of Internal, External Factors On Corporate Performance And Its Impact On Corporate Values In Indonesia Manufacturing Companies In The Automotive Sub Sector And Its Components In 2008-2017. 2019

Widodo. Analysis of the Effect of the Asian Regional Composite Stock Price Index on the Index Indonesian Joint Stock Price. Journal of Economics and Business. 2018 Vol 1 (2): 148-164

Witjaksono, Agung. Analysis of the Effect of SBI Interest Rates, World Oil Prices, Prices World Gold, Rupiah Exchange Rate, Nikkei 225 Index, and Dow Jones Index Against the JCI on the IDX 2000-2009. 2010

Yudianto, Iwan et. Al. The Effect of inflation, USD and Yuan Exchange Rate, Crude Oil, WTI, and ICP to indices sectoral returns in the Indonesian Stock Exchange. 2018

Zulaikha, Sharifah Binti Syed Jaafar. Relationship Between Stock Market And Macroeconomics Variables. 5 A Learning Center. 2013

Bank Indonesia. BI 7-day (Reverse) Repo Rate. Available from:https://www.bi.go.id/en/moneter/bi-7day-RR/data/Contents/Default.aspx [Accessed April 27, 2020]

Bank Indonesia. Bank Indonesia Certificate Interest Rates 2010-2016. Available from:http://bi.go.id [Accessed April 27, 2020]

Jannah, Miftahul. Chinese investment in 2019 RI has doubled to Rp. 70 trillion. Available from:https://tirto.id/in Investasi-china-ke-ri-2019-naik-dua-kali-lipat-jadi-rp70-trillion-evDC [Accessed 25 April 2020]

Meryani, Andina. China Shifts Japan to Become the World's Number 2 Economic Power. Available from:https://economy.okezone.com/read/2011/02/14/213/424529/china-geser-jepang-jadi-kekuatan-ekonomi-nomor-2-dunia [Accessed 29 April 2020]

Oktara, Diko. BKPM: Chinese Investment Drastically Increased In 2016. Available from:https://bisnis.tempo.co/read/839875/bkpm-in Investasi-cina-naik-drastis-di 2016 / full & view = ok [Accessed 1 May 2020]

Yahoo Finance. Historical Price Jakarta Stock Exchange (JKSE) 2010-2019. Available from:http://finance.yahoo.com [Accessed 25 April 2020]

Yahoo Finance. Historical Price Shanghai Stock Exchange (SSE) 2010-2019. Available from:http://finance.yahoo.com [Accessed 26 April 2020]

Yahoo Finance. Historical CNY / IDR Exchange Rates 2010-2019. Available from:http://finance.yahoo.com [Accessed 28 April 2020]

Yahoo Finance. Historical USD / IDR exchange rates 2010-2019. Available from:http://finance.yahoo.com [Accessed 29 April 2020]

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 151-163
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.352

Investigating Structural Relationship Between Service Quality, Satisfaction and Loyalty in Banking Sector of Afghanistan

Jamshed Haidery[1], Sayed Wali Shah Mandozai[2], Hafizullahmeen Amin[3]

[1] Department of Statistics and Econometrics, Faculty of Economics, Kabul University, Kabul – Afghanistan.
[2] Department of Business Administration, Faculty of Economics, Shaikh Zayed University, Khost - Afghanistan.
[3] Department of Business Administration, Faculty of Economics, Shaikh Zayed University, Khost, Afghanistan.

Abstract
This study aims to understand the relationship of service quality dimensions, customer satisfaction, and loyalty in the banking sector using data from the Afghanistan banking sector. The study surveyed 269 respondents using a standard SERVQUAL questionnaire to examine the relationship between service quality dimensions, customer satisfaction, and loyalty in the banking sector of Afghanistan. The Structural Equation Modeling approached was used to analyze data. The findings suggest that assurance, empathy, and tangibles have a positive influence on customer satisfaction. Importantly, results revealed that female customers are less satisfied as compared to their counterparts. furthermore, the findings indicate a positive influence of customer satisfaction on customer loyalty. This paper offers empirical support for bank managers to enhance the physical facilities, assure customer trust, appropriately treat customers and consider gender requirements in providing banking services. The major limitation of this study is that it only includes one private bank customer and only Kabul province. This work illustrates an initial empirical study into service quality, customer satisfaction, and loyalty in Afghanistan using well developed SERVQUAL model.

Keywords: Banking Sector, Customer Loyalty, Customer Satisfaction, Serqual Model, Service Quality

1. Introduction

Banks play an important and active role in the financial and economic development of a country. An effective banking system greatly influences the growth of a country in various sectors of the economy. Practitioners in the banking industry face a large number of complex challenges in the global marketplace. It is crucial for banks to better understand changing customer needs and adopt the latest information technology system to compete more effectively with global organizations (Malhotra & Mukherjee, 2004).

Afghanistan's banking sector enjoyed strong economic growth in the last decade and was considered one of the strongest sectors that were contributing to the economic growth in the country. Indeed, the success of the banking system supports currency stability, which is the primary objective of the monetary policy in Afghanistan. The banking sector in Afghanistan is significantly contributed to the GDP growth in the first decade of the millennium and slightly became fragile by the collapse of Kabul Bank in 2010 just after the global financial crisis. Currently, 12 (7 private and 5 public) banks are now operating in Afghanistan, which is a relatively small number compared with many international cities (DAB, 2018).

Azizi Bank is one of the leading commercial banks in Afghanistan. The bank was established in 2006 and currently has 80 branches in 30 provinces across the country, headquartered in Kabul. Currently, the bank has about 1200 employees of which 12 percent are female. According to the reports, Azizi Bank is the highest lender in the country, contributing to almost 30% of loans disbursed in the economy in different sectors of the country, especially in the areas of infrastructure lending. Bank has an aggressive policy for Financial Inclusion. It is ranked the highest in the country in terms of the number of depositors. Azizi bank offers conventional banking services to its customers. (Azizi Bank, 2019).

Globalization has altered customer behavior regarding banking services, and the operating environment for the banking industry has become more dynamic and competitive. The emergent of new forms of banking services such as automated teller machines, internet banking, and phone banking as well as the maturing financial market and global competition accelerate the need for bankers to explore the importance of customer satisfaction and customer loyalty.

Delivering quality of services by the banks has a positive influence on the satisfaction of its customers and it directly contributes to the profitability of the banking industry. Customer Satisfaction and Service Quality are leading components in the system of external relations of each organization, good quality of service provides numerous benefits to the banking industry, i.e., better business image, enhancement in customer satisfaction, cross-selling opportunities, decreased customer's defection, increased chances of a word to mouth (WoM) recommendations and facilitates the maintenance of long term and valuable customers (Cronin et al., 2000). In the modern banking system maintaining and developing long-term customer relationships is essential for competitive business.

A great number of studies were aimed to identify the significance of service quality by adopting different models. Good service quality is generally regarded as a way to retain existing customers and acquire new ones, reduce costs, enhance corporate image, generate positive word-of-mouth recommendations, and improve profitability (Kang & James, 2004; Yoon & Suh, 2004). The practice of excellent service quality integrated with consumer products is a powerful generator to cater to customers' needs and engage with them. Considering that many banks offer undifferentiated products in a rival marketplace, banks are paying more attention to service quality to gain a competitive advantage (Kumar et al., 2010).

The main objective of this study is to assess the relationship between service quality dimensions with customer satisfaction and the relationship of customer satisfaction with customer loyalty. Besides, this study is looking to identify the most important attributes of service quality considered by customers in the banking sector which has a significant impact on their satisfaction and ultimately on their loyalty.

This study provides empirical evidence regarding factors that lead to customer satisfaction in the banking services in Afghanistan and its managerial implications. These empirical findings will contribute to re-setting the policies and plans of the commercial banks to keep pace with the growing competitive environment to meet the customers and community satisfaction.

This study has six sections. Section 1, presents the background, objectives, and questions. Section 2 describes the key concepts of the study and section 3 provides an intensive overview of the theoretical and empirical literature review. Section 4 presents the methodological framework and section 5 the results of our study. Finally, the conclusions, managerial implications, and future research directions are presented in section 6.

2. Concepts and Definition

Service quality is crucial to the success of any service organization. Since customers participate in the delivery and consumption of services, they interact closely with various aspects of organizations. Service quality can be defined as the conformance to customer requirements in the delivery of a service (Chakrabarty et al., 2007). Researches have shown that service quality is highly associated with increased profit levels, reduce costs, and increase market shares (Kandampully & Juaheer, 2009; Parasuraman et al., 1985; Lau et al., 2005). Moreover, service quality has been shown to influence purchase intentions (Sullivan & Walstrom, 2001), and is used by some firms to strategically position themselves in the marketplace (Brown & Swartz, 1989). Hence, service quality plays a critical role in adding value to the overall service experience and is a key factor of customer loyalty.

Customers' satisfaction and loyalty are vital in the competitive business environment. This is mainly because customers are scarce resources it is far easier to obtain from an old customer than from a new one. On other hand, customer satisfaction and loyalty have a positive effect on the revenues and profitability of the company (Rosenberg & Czepiel 2017). Customer satisfaction is a dynamic, relative, moving target that may evolve and be influenced by a variety of factors. Particularly when product usage or the service experience takes place over time, satisfaction may be highly variable depending on which point in the usage or experience cycle one is focusing on (Fournier & Mick, 1999).

Satisfaction refers to the customers' state of being appropriately rewarded in purchasing situation for the exchange they have made. Oliver (1997) defines customer satisfaction as their fulfillment response. This definition is extended by Zeithaml and Bitner (2003) as satisfaction is the customer's judgment of a product or service in terms of their needs and expectations. Consequently, failure in meeting customer needs and expectations leads to their dissatisfaction with the product or service. Therefore, customer needs and expectations of a product or service are vital for enhancing customer satisfaction (Fornell et al., 1996).

Product and service quality, price, consumer emotion, situational factors, perception of equity or fairness, product features are some of the factors that influence customer satisfaction. On the other hand, psychological, personal, social, and cultural factors influence the purchasing behavior of the consumer. Service is one of the most complex factors which do not exist before it is consumed. Therefore, understanding what customer needs and what they evaluate is essential for developing services management.

Loyalty means a customer prefers to choose a product or service compare with its competitor. The definition of loyalty has been given in much relevant literature; however, there is no unified view to its definition. Goodman (2009, 85) indicates that “loyalty is best measured by continued buying behavior.” According to Reichheld (2001, 44), “loyal is about earning people’s enthusiastic commitment to a relationship that will improve their lives over a long term.” Similarly, Oliver (1997) defines loyalty as " a deeply held commitment to re-buy or re-patronize a preferred product consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behavior.” Gremler and Brown (1999, 34) claim that “customer loyalty shows a customer’s positive attitude for the repeating buying behavior on certain product or service.” Thomas and Tobe (2013) emphasize that “loyalty customers are more profitable.” Hence, Loyalty customers are the most competitive advantage of an enterprise.

Chen and Wang (2009) consider customer satisfaction an attitude, whereas loyalty is described as a behavior. They suggest that customer satisfaction is a consistent judgment between expectations and perceived service quality. Accordingly, satisfied customers get a positive attitude and it is the main reason to continue a relationship with a company’s product and services and is considered an important pillar that upholds loyalty (Abdullah, 2012). The relationship between customer satisfaction is not loyalty is not easily determined.

Based on Coyne (1986) two critical thresholds are affecting the link between customer satisfaction and customer loyalty. This nonlinear relationship consists of two thresholds. There is appeared that when customer satisfaction rose a certain threshold, loyalty increases rapidly, at the same time when satisfaction declines to a certain level, loyalty drops equally dramatically. The role of satisfaction on loyalty largely indicates that the former is a key

determinant of the latter (Dick & Basu 1994). There are other factors besides satisfaction that have a certain impact on customer loyalty (Reichheld & Schefter 2000).

Measuring customer satisfaction is a key performance indicator within a business and is often part of the balanced scorecard. The main aim of measuring customer satisfaction is to make a prompt decision for the continuous improvement of the business transactions. Measuring customer satisfaction may be different in different organizations since there are different approaches to measure customer satisfaction. The possible dimension to measure customer satisfaction could be quality, price, trust relationship, complaints, problems, and many others.

Numerous researchers have sought to uncover the global services attributes that contribute most significantly to relevant quality assessments (Parasuraman et al., 1985; Pitt et al., 1999). Madu and Madu (2002) proposed 15 dimensions for online services quality according to their study. In 2003 Wolfinbarger and Gilly (2003) through their intensive focus group interviews, content analysis, and online survey have come up with only four factors for online retailing experiences: website design, reliability, security, and customer service. Further, Zeithaml et al. (2002) proposed seven different dimensions for service quality. The most prominent work of Parasuraman et al. (1985 and 1988) initially revealed ten dimensions of service quality and later on condensed to the following five dimensions:

(1) Tangibles—physical facilities, equipment, staff appearance, etc.
(2) Reliability—ability to perform service independently and accurately.
(3) Responsiveness—willingness to help and respond to customers' needs.
(4) Assurance—the ability of staff to inspire confidence and trust in customers.
(5) Empathy—the extent to which caring individual service is given.

In turn, these five attributes constitute the base of global measurement devices for service quality, namely, SERVQUAL. It has been widely applied to numerous service industries as a means of measuring service quality and became the workhorse for empirical literature. The primary value of SERVQUAL lies in its powerful benchmarking, diagnostic, and prescriptive tools (Kettinger and Lee, 1997).

This study adapted contextualized SERVQUAL model to assess the relationship between service quality and customer satisfaction and Loyalty in the Afghanistan banking sector. It is believed that the present study of service quality and customer satisfaction and loyalty will provide a platform to discuss the service quality issues in the banking sector of Afghanistan.

3. Literature Review

3.1. Theoretical framework

The issue of customer satisfaction has been explained by numerous theories developed by several authors. Generally, four groups of theories have been used to understand the process through which customers form satisfaction judgments (Adee, 2004). The Four psychological theories are (1) Assimilation theory; (2) Contrast theory; (3) Assimilation-Contrast theory; and (4) Negativity theory (Anderson, 1973).

The assimilation theory was introduced after discovering that the consumer evaluates the products after using them. The theory of assimilation asserts that consumers make some kind of cognitive comparison between expectations about the product and the perceived product performance (Anderson, 1973). Anderson (1973) stated that consumers seek to avoid dissonance by adjusting perceptions about a given product to bring it more in line with expectations. According to this theory, consumers can reduce the tension resulting from poor product performance either by distorting expectations so that they coincide with perceived product performance or by raising the level of satisfaction by minimizing the relative importance of the disconfirmation experienced.

Contrast theory was introduced by Hovland et al., in 1987. The contrast theory states that consumers tend to magnify the discrepancy between their attitudes and the attitudes represented by opinion statements. A discrepancy of experience from expectations will be exaggerated in the direction of the discrepancy. Thus, if a firm under-

promises in advertising while its over-deliver then the customer's experience will be higher than promised leading to positive exaggerated disconfirmation. Conversely, if the firm raises expectations in its advertising, and then the customer's experience is only slightly less than that promised; the product/service would be rejected as totally unsatisfactory.

Anderson (1973) extended the above theories which are known as the Assimilation-contrast theory. His theory is based on the context of post-exposure product performance experience. Assimilation-contrast theory proclaims that if performance is within a customer's range of acceptance, even though it may fall short of expectations, the discrepancy will be disregarded. This is because assimilation will take place and the performance will be deemed acceptable. On the other hand, the theory asserts that if performance falls within the range of rejection, the contrast will prevail and the difference will be exaggerated. As a result, the product or service will be unacceptable (Terry, 1997). Likewise, the negative theory developed by Carlsmith and Aronson (1963) states that when expectations are strongly held, consumers will respond negatively to any disconfirmation (Teery, 1997).

Disconfirmation theory argues that customer satisfaction is related to the size and direction of the disconfirmation experience that occurs as a result of comparing service performance against expectations. According to Ekinci and Sirakaya (2004) disconfirmation paradigm is the best predictor of customer satisfaction. The theory of cognitive dissonance proposes that people have a motivational drive to reduce dissonance by changing their attitudes, beliefs, and behaviors, or by justifying or rationalizing them (Feininger, 1957). Cognitive dissonance is an uncomfortable feeling caused by holding two contradictory ideas simultaneously. The phenomenon of cognitive dissonance has been quickly adopted by consumer behavior research as it is believed to exert high exploratory power in explaining the state of discomfort buyers are often in after they made a purchase (Salzberger and Koller, 2010).

According to adaptation-level theory, customers perceive a product or service according to the adapted standard which is arising from the perceptions of the product or service itself, the context, and psychological and physiological characteristics of the customer. Once created, the 'adaptation level' serves to sustain subsequent evaluations in that positive and negative deviations will remain in the general vicinity of one's original position. Only large impacts on the adaptation level will change the final tone of the subject's evaluation. This theory was originated by Helsen in 1964 and applied to customer satisfaction by Oliver and Hanming (1994).

Hypothesis testing theory developed by Dighton (1983) states that pre-purchase information particularly, advertising plays a substantial role in creating expectations about the products, customers will acquire and use. Customers use their experience with products/services to test their expectations. Second, customers will tend to attempt to confirm (rather than disconfirm) their expectations. The interpretation of this theory is that customers are biased to positivity confirm their product/service experience.

3.2 Empirical Literature

The banking environment is significantly affected by technological, structural, and regulatory factors throughout the world. Banking has integrated globally by implementing regulatory changes (Angur et al., 1999). Banks can perform a wide range of activities by implementing structural changes to become more competitive in the financial market. In recent times, banks are involved to provide quality services by using technological changes in the environment. These rapid changes allow the banking sector to improve service quality and customer satisfaction (Angur et al., 1999; Arasli et al., 2005; Herington & Weaven, 2007; Raza et al., 2015).

Previously, many studies have been conducted in the context of service quality and customer satisfaction across the globe. These studies suggest that service quality and customer satisfaction are key factors of the service industry. Parasuraman et al. (1985) argued that the service quality concept is inconclusive in the context of customer satisfaction. Customer loyalty is another important factor in customer satisfaction.

Wang et al. (2003) support the fact that service quality is an essential factor for the success and reputation of banks. Awan et al.'s (2011) findings suggest the importance of service quality in the banking sector, while Ahmed et al.'s (2010) suggest that bank customers have a superior service quality perception of Islamic banks as compared to

conventional banks. Similarly, other studies' findings confirmed a positive relationship between customer satisfaction and service quality in the banking industry (e.g., Ling et al., 2016, Tan et al. 2016 Sayani 2015).

In Afghanistan, the banking sector can improve service quality dimensions through the active participation of local and foreign stakeholders. This results in competing to increase more customers in the long term by providing better service quality. The Afghanistan banking industry consists of 17 conventional and only one full-fledged Islamic bank where they are involved in a relatively competitive environment with continuous improvement of quality service. Researchers suggest that the banks' customers have a greater perception of service quality.

Despite the existing literature on service quality, fewer studies have been conducted on service quality and customer satisfaction, and customer loyalty in the Afghanistan banking sector. Up till now, to the best of the authors' knowledge, no such studies have been found relative to service quality dimensions and customer satisfaction and loyalty specifically in Azizi bank in Afghanistan. In the present study, we used a modified form of the SERVQUAL model to identify the relationship between service quality and customer satisfaction, and customer loyalty.

4. Methods and Conceptual Model

According to the SERVQUAL model, this study is based on the primary data that is collected through a standard 5-point Likert scaling questionnaire from the banking sector customers in Afghanistan. All items in the instrument were translated carefully into Dari so that our target population can self-complete it. The target population for this study is the legal age local bank customers from Azizi Bank in Kabul city. The present study was conducted in Oct–Nov 2019.

To increase overall precisions of estimates and to make survey administration relatively easier, multiple stratified random sampling methods are used in this study. The interested population (customers) is initially divided into two broad discreet segments, the main branch, and sub-branches of the Azizi Bank. The main branch and six other branches are randomly selected. On average there are about 120-150 transactions per day in each sub-branch of the AZ and around 600 transactions in the main branch. Therefore, based on the share of the customers about 35-40 questionnaires are randomly distributed in each of the sub-branches and 120 to the main branch of the AZ.

Face Validity is used to ensure the construct validity of the instrument through adapting a well-established questionnaire. The reliability of the instrument is tested using the alpha Cronbach statistic. The alpha Cronbach is calculated for each dimension and overall questionnaire. The threshold of 0.7 is used for the acceptance of the concepts.

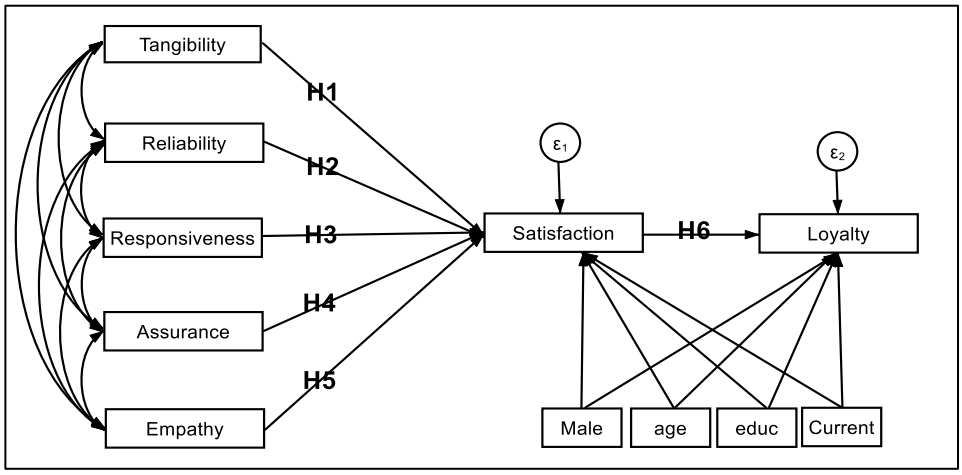


Figure 1: Conceptual Model of the Research

The conceptual model of this study based on the theoretical and empirical model is illustrated in Figure 1. The structural equation model is applied to estimate the parameters of the conceptual model and to analyze the relationship of services quality dimension and customer satisfaction and loyalty.

5. Results and discussion

5.1. Data Description

Table 1 shows the initial distribution of responses among the surveyed customers in the Azizi Bank. In this study in total 350 customers were approached based on the sampling strategy to filled the questionnaire 254 male and 96 females were included. In general, there were no significant differences in the net response rate among the male and female. The main problem after data collection was that almost 49 (15 percent) of the response in the questionnaire were either incomplete or unengaged responses where individuals due to no interest or lack of time or motivation selected almost one Likert scale for all of the questions.

Table 1: Initial Composition of Respondent of the Azizi Bank Customers

Response rate	**Male**	**Female**	**Total**
Number of Questionnaires Distributed	254	96	350
Refusals (no trust, not time, etc.)	9	6	15
Not Returned the Questionnaire	12	5	17
Percentage Refusals and Not Returned	***8%***	***11%***	***9%***
Remaining	**233**	**85**	**318**
Incomplete or Incorrect	13	5	18
Unengaged Responses	24	7	31
Percentage of incomplete and unengaged responses	***16%***	***14%***	***15%***
The net number of questionnaires	196	73	269
Net response rate	***77%***	***76%***	***77%***

Source: Own data (2019)

The result of Table 2 shows that among 269 customers who properly filled the questionnaire there were 190 male and 79 female customers of Azizi Bank. Besides, among them, the type of account they had in the AB were mainly current or salary account, 98 and 99 respectively. Moreover, 61 customers (40 male and 21 female) had saving accounts while only 11 customers (10 male and 1 female) had company account. The salary and company account holder consist less than 40 percent of the responses in the target group of individuals.

Table 2: Account Type and Gender Composition of Respondents

Account Type	Male	Female	Total
Current	76	22	98
Saving	40	21	61
Salary	64	35	99
Company	10	1	11
Total	190	79	269

Source: Own Data

In this study, the distribution of the respondent by their education levels are presented in Figure 2. The figure shows that majority of the participants in this study hold a bachelor's degree (176 individuals, 127 and 49 male and female respectively) that followed by the high school (41 individuals) and master's degree (29 individuals). Besides, other education degrees are modest in this sample where the secondary level is 15 individuals while others are less than 6

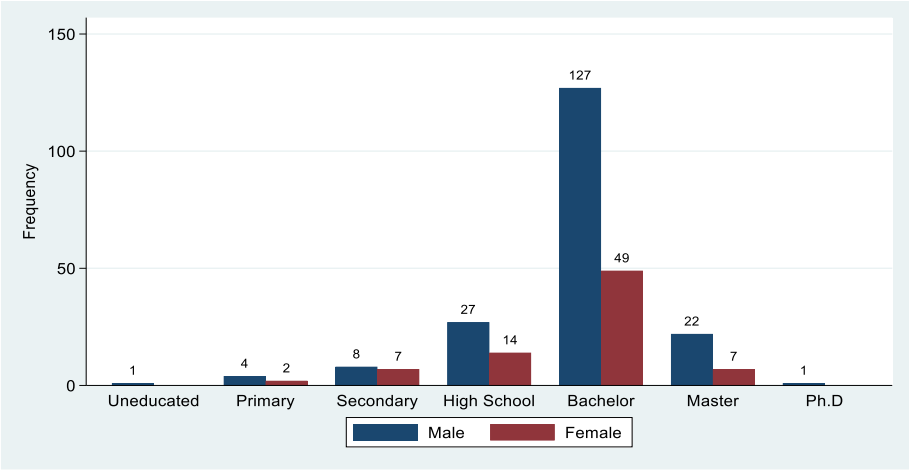


Figure 2: The distribution of the Education of the Respondents

The distribution of the employment type by the gender of the respondents is illustrated in Figure 3. As figure 2 indicates the majority of the surveyed individuals working in the private sector (97 males and 29 females) followed by the Own-account workers (63 males and 33 females) than the public employees (30 males and 17 females).

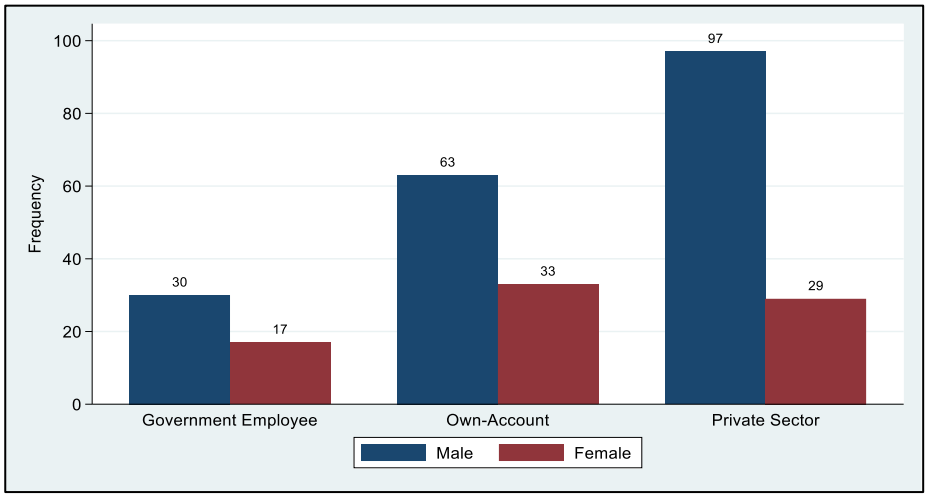


Figure 3: Employment Status by Gender of the Respondents

Before the reliability test, sample adequacy tests are performed to check the sufficiency of the sample size for our analysis. There are mainly two tests that are widely used for such analysis namely, Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.9558
Bartlett's Test of Sphericity	Approx. Chi-Square	4290.906
	df	365
	Sig.	.000

Source: Author's Estimation

The results of both tests are reported in Table 3. The KMO value of 0.96 and the significance of the Bartlett test of Sphericity indicate that our sample size of (269) is sufficient for performing our multivariate analysis. The result of the Alpha Cronbach tests for service quality dimensions, satisfaction, and loyalty are reported in Table 4.

Table 4: Internal Consistency (Alpha Cronbach) of Constructs with Mean and Standard Deviation

Sex	Mean	Std. Dev.	Alpha Cronbach
Tangibility	3.819	0.750	0.847
Reliability	3.896	0.780	0.856
Responsiveness	3.943	0.772	0.856
Assurance	3.997	0.790	0.830
Empathy	3.894	0.834	0.868
Satisfaction	3.944	0.741	0.815
Loyalty	4.040	0.762	0.850
Total	3.933	0.776	0.966

Source: Own Data

Table 4 shows that all dimensions of service quality according to the SERVQUAL models possess strong internal consistency that indicates all of the customers demonstrated a clear understanding of the questions in the questionnaire. Based on the statistics of the internal consistency, we take the average of each construct variable to convert them into the observed variables. This will allow us to further analyze and assess the association among these variables. The average values of the variable by gender are presented in the following table.

The Pearson coefficient of correlation is estimated for the service quality dimensions, satisfaction, and loyalty and presented in Table 5. The overall results of the correlation analysis indicate that there is a positive and highly significant relationship between service quality dimensions and customer satisfaction and customer loyalty. Besides, the result indicates that there is also a significant positive relationship among service quality dimensions.

Table 5: Pearson Correlation Coefficients for the Service Quality Dimension and Customer Satisfaction and Loyalty.

	1	**2**	**3**	**4**	**5**	**6**	**7**
1. Tangibles	1						
2. Reliability	.7114**	1					
3. Responsive	.7035**	.8443**	1				
4. Assurance	.6089**	.7237**	.7443**	1			
5. Empathy	.6918**	.7815**	.8066**	.7730**	1		
6. Satisfaction	.6543**	.6604**	.7073**	.348**	.7554**	1	
7. Loyalty	.6512**	.6280**	.6658**	0.6571**	0.6765**	0.7924**	1

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

5.2. Findings and Discussion

The result of descriptive analysis outlined some relationship among the construct variables and this section outlines the regression results and discusses the main findings of the work. The results of the latent Structural Equation Model is reported in Figure 13 and also summarized in Table 10 and 11. The SEM model is estimated using STATA 15.2. The results of the SEM are reported in figure 13 and also summarized in Tables 6 and 7.

The results indicate a positive association between customers' perception of the tangible aspects of the services and their level of satisfaction. The coefficient is statistically significant at the 0.01 level. The coefficient of this variable shows that one standard deviation increase in the perception of the customers regarding the tangible aspect of the banking services will result in to increase of about 0.189 standard deviations in their satisfaction. As a result, the first hypothesis is supported.

The coefficient of responsiveness is positive, as was expected. However, it is not significant at the 0.05 level. As a result, the second hypothesis is not supported at the 0.05 level. Surprisingly the coefficient of the reliability is negative that indicates a direct effect of responsiveness on customer satisfaction. Though the result is not statistically significant even at 0.1 level and as a result, the third hypothesis is not supported

Table 6: The Results of the SEM Model (Standardized Coefficients) Dependent Variable (Customer Satisfaction)

Variables	Standard Coef.	OIM Std. Err	Z	P>|z|
Tangibility	0.1896	0.0536	3.5400	0.0000
Reliability	-0.0890	0.0729	-1.2200	0.2220
Responsiveness	0.1287	0.0756	1.7000	0.0890
Assurance	0.3435	0.0589	5.8300	0.0000
Empathy	0.3174	0.0690	4.6000	0.0000
Male	0.0731	0.0365	2.0000	0.0450
Age	0.0434	0.0364	1.1900	0.2320
Current Account	-0.0060	0.0361	-0.1700	0.8670
Education	0.0299	0.0364	0.8200	0.4110
Constant	0.5500	0.2980	1.8500	0.0650
Observation			**269**	
Log-Likelihood			**-2323.56**	

Source: Authors Estimation (Dec 2019)

The coefficient of assurance shows a positive and statistically significant impact on customer satisfaction. This is the key findings of this study that assurance has the highest impact on customer satisfaction as compared to the other service quality dimensions. Thus, the fourth hypothesis is supported.

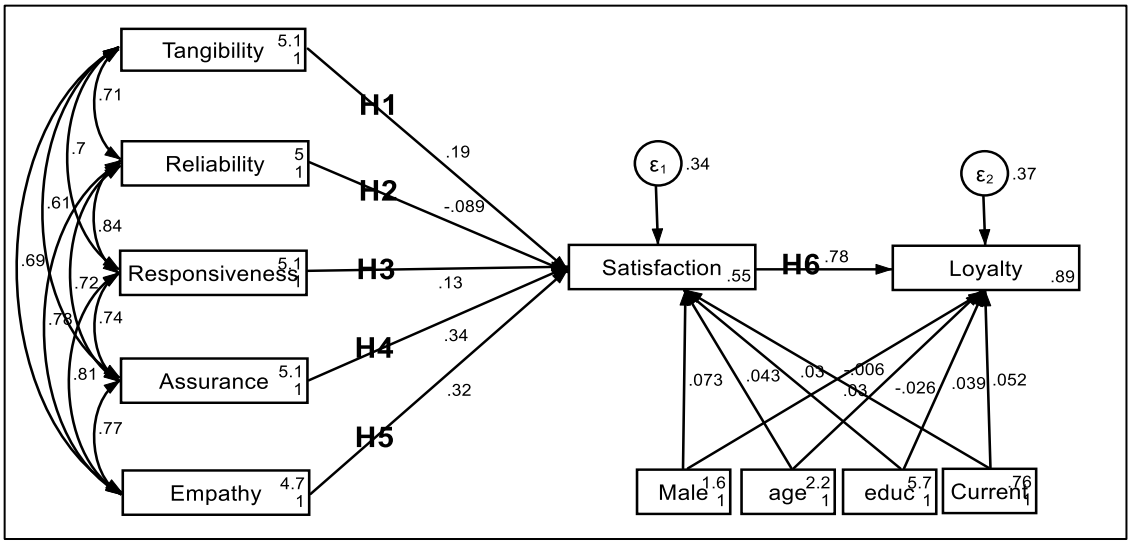


Figure 4: Results of the Structural Equation Model of the Study

The coefficient of empathy is positive and is statistically significant at the 0.01 level. This confirms the positive impact of empathy on customer satisfaction; thus, the fifth hypothesis is also supported. One of the most significant findings relates to the role of gender on customer satisfaction. It shows that male customers are more satisfied as compare to their female counterparts. This finding has significant managerial implications for the banking sector.

The results of customer satisfaction and loyalty are reported in Table 7. The coefficient of satisfaction as was expected is positive that indicates a direct effect of customer satisfaction on customer loyalty. The coefficient of this satisfaction is very high and strong which shows that one standard deviation increase in the customers' satisfaction level from the banking services will bring about a 0.7814 standard deviation in their loyalty level. The effect of customer satisfaction on customer loyalty statistically is significant at the 0.01 level. Thus, the sixth hypothesis of this study is supported.

Table 7: The Results of the SEM Model (Standardized Coefficients) – Dependent Variable (Customer Loyalty)

Variables	Standard Coef.	OIM Std. Err	Z	P>|z|
Satisfaction	0.7814	0.0245	31.9400	0.0000
Male	0.0297	0.0380	0.7800	0.4350
Age	-0.0265	0.0380	-0.7000	0.4860
Current Account	0.0525	0.0374	1.4000	0.1600
Education	0.0392	0.0376	1.0400	0.2960
Constant	0.8924	0.3075	2.9000	0.0040
Observation			**269.0000**	
Log-Likelihood			**-23233.5600**	

Source: Authors Estimation (Dec 2019)

The results of the SEM model indicate that the age, education, and account type of the customers are not significant determinants of their satisfaction and loyalty. Similarly, the gender of the customers is also not a determinant of their loyalty to the banking sector.

4. Conclusion

This study examined the effect of service quality dimensions adopting the SERVQUAL model and the effect of customer satisfaction on customer loyalty in the banking sector of Afghanistan. Using the data of 269 Azizi Bank customers it can easily be deduced from the findings of this study that there is a positive effect of assurance, empathy, and tangibles dimension of the service quality and customer satisfaction. Besides, the noticeable difference in the satisfaction levels between male and female customers indicates that banks should enhance the quality of their services for female customers. Furthermore, results suggest that customer satisfaction strongly increases customer loyalty in the banking sector. The major limitation of this study is that it covers only Kabul-based customers, therefore it is suggested for future researches to extend the sample to cover across Afghanistan. This study provides empirical knowledge for bank managers in improving their service quality by adopting gender-centric strategies that would boost their customer relationships.

References

Abdullah, R. B., Ismail, N. B., Rahman, A. F. B. A., Suhaimin, M. B. M., Safie, S. K. B., Tajuddin, M. T. H. M., & Nair, G. K. S. (2012). The relationship between store brand and customer loyalty in retailing in Malaysia. *Asian Social Science*, *8*(2), 171.

Ahmad, A., Saif, I., & Safwan, N. (2010). An empirical investigation of Islamic banking in Pakistan based on the perception of service quality. *African journal of business management*, *4*(6), 1185-1193.

Ali, M., & Raza, S. A. (2015). Measurement of service quality perception and customer satisfaction in Islamic banks of Pakistan: Evidence from Modified SERVQUAL Model.

Anderson, R. E. (1973). Consumer dissatisfaction: The effect of disconfirmed expectancy on perceived product performance. *Journal of marketing research*, *10*(1), 38-44.

Angur, M. G., Nataraajan, R., & Jahera, J. S. (1999). Service quality in the banking industry: an assessment in a developing economy. *International journal of bank marketing*.

Arasli, H., Mehtap-Smadi, S., & Katircioglu, S. T. (2005). Customer service quality in the Greek Cypriot banking industry. *Managing Service Quality: An International Journal*.

Awan, H. M., Bukhari, K. S., & Iqbal, A. (2011). Service quality and customer satisfaction in the banking sector: A comparative study of conventional and Islamic banks in Pakistan. *Journal of Islamic Marketing*.

Brown, S. W., & Swartz, T. A. (1989). A gap analysis of professional service quality. *Journal of Marketing*, *53*(2), 92-98.

Chen, M. F., & Wang, L. H. (2009). The moderating role of switching barriers on customer loyalty in the life insurance industry. *The Service Industries Journal*, *29*(8), 1105-1123.

Coyne, K. (1989), "Beyond service fads – meaningful strategies for the real world," *Sloan Management Review*, Vol. 30 (4), pp.69-76.

Cronin Jr, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of retailing*, *76*(2), 193-218.

Dick, A. S., & Basu, K. (1994). Customer loyalty: toward an integrated conceptual framework. *Journal of the academy of marketing science*, *22*(2), 99-113.

Ekinci, Y., & Sirakaya, E. (2004). An examination of the antecedents and consequences of customer satisfaction. *Crouch GI, Perdue RR, Timmermans HJP, & Uysal M. Consumer Psychology of Tourism, Hospitality and Leisure. Cambridge, MA: CABI Publishing*, 189-202.

Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American customer satisfaction index: nature, purpose, and findings. *Journal of Marketing*, *60*(4), 7-18.

Fournier, S., & Mick, D. G. (1999). Rediscovering satisfaction. *Journal of Marketing*, *63*(4), 5-23.

Gremler, D. D., & Brown, S. W. (1999). The loyalty ripple effect. *International Journal of Service Industry Management*.

Herington, C., & Weaven, S. (2007). Can banks improve customer relationships with high-quality online services?. *Managing Service Quality: An International Journal*.

Hu, H. H., Kandampully, J., & Juwaheer, T. D. (2009). Relationships and impacts of service quality, perceived value, customer satisfaction, and image: an empirical study. *The service industries journal*, *29*(2), 111-125.

Kang, G. D., & James, J. (2004). Service quality dimensions: an examination of Grönroos's service quality model. *Managing Service Quality: An International Journal*.

Kettinger, W. J., & Lee, C. C. (1997). Pragmatic perspectives on the measurement of information systems service quality. *MIS Quarterly*, 223-240.

Kumar, V., Aksoy, L., Donkers, B., Venkatesan, R., Wiesel, T., & Tillmanns, S. (2010). Undervalued or overvalued customers: capturing total customer engagement value. *Journal of service research*, *13*(3), 297-310.

Lau, P. M., Akbar, A. K., & Fie, D. Y. G. (2005). Service quality: a study of the luxury hotels in Malaysia. *Journal of American Academy of Business*, *7*(2), 46-55.

Ling, G. M., Fern, Y. S., Boon, L. K., & Huat, T. S. (2016). Understanding customer satisfaction of internet banking: A case study in Malacca. *Procedia Economics and Finance*, *37*, 80-85.

Malhotra, N., & Mukherjee, A. (2004). The relative influence of organisational commitment and job satisfaction on service quality of customer-contact employees in banking call centres. *Journal of Services Marketing*.

Parasuraman, A., Zeithaml, V. A., & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *1988*, *64*(1), 12-40.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, *49*(4), 41-50.

Reen, K. W., Chakrabarty, S., & Whitten, D. (2007). Organisational culture of customer care: market orientation and service quality. *International Journal of Services and Standards*, *3*(2), 137-153.

Reichheld, F. F., & Schefter, P. (2000). E-loyalty: your secret weapon on the web. *Harvard business review*, *78*(4), 105-113.

Rosenberg, J.L.& Czepiel, A.J. 2017. Journal of Consumer Marketing: A marketing approach to customer retention. United Kingdom: MCB UP Limited

Salzberger, T., & Koller, M. (2005, December). Cognitive dissonance–Reconsidering an important and well-established phenomenon in consumer behaviour research. In *Proceedings of the ANZMAC 2005 Conference* (pp. 5-7).

Sayani, H. (2015). Customer satisfaction and loyalty in the United Arab Emirates banking industry. *International Journal of Bank Marketing*.

Sullivan, J. R., & Walstrom, K. A. (2001). Consumer perspectives on service quality of electronic commerce websites. *Journal of Computer Information Systems*, *41*(3), 8-14.

Tan, L. H., Chew, B. C., & Hamid, S. R. (2016). Relationship between service quality and customer satisfaction: a study of Malaysian banking industry. *International Journal of Productivity and Quality Management*, *19*(1), 38-50.

Terry G. Vavra (1997). Improving Your Measurement of Customer Satisfaction: A Guide to Creating, Conducting, Analyzing, and Reporting Customer Satisfaction Measurement Programs. Americal Society for Quality. pp. 44-60

Wang, Y., Lo, H. P., & Hui, Y. V. (2003). The antecedents of service quality and product quality and their influences on bank reputation: evidence from the banking industry in China. *Managing Service Quality: An International Journal*.

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: dimensionalizing, measuring, and predicting etail quality. *Journal of retailing*, *79*(3), 183-198.

Yau, O. H., & You, H. (1994). *Consumer behaviour in China: Customer satisfaction and cultural values*. Taylor & Francis.

Yoon, S., & Suh, H. (2004). Ensuring IT consulting SERVQUAL and user satisfaction: a modified measurement tool. *Information Systems Frontiers*, *6*(4), 341-351.

Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: a critical review of extant knowledge. *Journal of the academy of marketing science*, *30*(4), 362-375.

Zeithaml, V.A., and Bitner, M.J. (2003). Services Marketing: Integrating Customer Focus across the Firm. 3rd Edn., McGraw-Hill, New York, USA.

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 164-171
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.353

The Impact of Market Outlets Choice on Beekeepers' Income in Rural Poor: A Case Study of Badakhshan Province

Jamshid Yolchi[1]

[1] School of Economics, Badakhshan University, Badakhshan, Afghanistan.

Correspondence: Jamshid Yolchi, School of Economics, Badakhshan University, Faizabad, Badakhshan, 3403 Afghanistan. E-mail: jamshidyolchi@outlook.com

Abstract
This research carried out to uncover the effect of beekeeping on the income of rural poor and to which extent that market outlet choice affects the income of beekeepers. The findings of Multinomial Logit regression, from 129 questionnaires of 4 districts indicate that there is no relationship between market outlet choice and income of beekeepers. The income of beekeepers is mostly affected by their family size and working experience. But the factors affecting to choose the home selling market outlet is very different from those of three other channels. In order to promote the income of beekeepers, it's recommended that the government and other involved NGOs work on arrangements on wholesale opportunities for beekeepers. Because over 102 out of 129 samples have indicated that their products aren't sold out on time. It means that there is a huge opportunity of filling the gap of honey demand in Afghanistan by promoting the links between producers and buyers.

Keywords: Market Outlet, Beekeeping, Rural Poor, Badakhshan, Afghanistan

1. Introduction

Afghanistan one of the least developed countries in the world struggling to keep up with the rest of the world in term of economic development and growth. As the majority of the country is suffering from the poverty (CSO, 2009; Central Statistic Organization, 2014) and over 80% of the population rely on livestock and agriculture as their main sources of income, which is not modernized so far (IPC, 2019) it's hard to achieve economic development.

In recent years in cooperation and financial aid of international community and NGOs, the government of Afghanistan has implemented major projects to improve income and livelihood in rural areas (Citizen Charter Program, 2019). To address this issues the Government of Afghanistan with the financial assistance of international community has worked and implemented several initiatives. For instance by different projects they have helped the rural poor to grow their fruit orchard and beekeeping business in Agriculture sector, but still the farmers are facing problems in making the most income from their activities. From the production to the marketing

there are lots of challenges that hurdles the activities farmers to making money. To solve this problem the farmers especially the beekeepers are using many market outlets to sell their products, for instance they are selling from home, sending the honey to the local shops, wholesalers, contractors, and selling through branches in other provinces. Till now there is no any research in the area of value chain of honey production and also the impact of market outlet choice is vague in Badakhshan province despite its importance in income and rural development (Marsden, Banks, & Bristow, 2000). In this research the impact of every market outlet would be clear and the best choice would be pointed.

Market outlet choice have different impact on income when chose to sell a product, whether its beekeeping (Tarekegn, Haji, & Tegegne, 2017) or tomato production (Tura & Hamo, 2018). In some cases the marketing chain has affected the income of producers from their honey, for instance the income of producers from their honey production is less than those of retailers in the case of Ethiopia (Yamaneberhan, 2012). The question is to which extent does the market outlet choice affects the income of beekeepers in Badakhshan province of Afghanistan. The hypothesis of this paper is that the market outlet choice has a significant impact on income of rural poor. To uncover the impact of marker outlet choice on income, the research designed to ask the every interviewee whether they are selling their product in certain markets. This year the production due to cold weather has been delayed, so the research covers the production of last year (2019).

The findings of this research will help the government and NGOs (Non-governmental Organizations) to address the market problem of produced honey which faces challenges and hasn't been sold since last year. The study also will pave the way for future studies in the area to tackle such challenges in another research about other products. As the research area covers the rural poor, and those with low income to find the best market outlet will have a positive impact on their income. The government and NGOs have helped the beekeepers with tools, trainings, and some extension services. But they do less about marketing and helping the beneficiaries of their honey projects to gain the most from this activities. In rare cases some beekeepers just send to attend in Ag-fairs in Kabul the capital. Also it's worth to mention that the beekeeping sector doesn't receive any attention from the academia for research about its challenges and problems. So this research solves the problem of best market outlet choice for honey production and kicks start a new trend for analyzing the local problems empirically from academia. Because in understudy districts the beekeeping is one of the major income sources (Department of Agriculture and Livestock, 2020).

The literature which has been read so far in market outlet choice, has focused on four main points. These are demographic characteristics of producers, geographical characteristics of production area, product itself, and financial facilities and institutions. As farmers are producing different products, and they are in large numbers, somehow the market is a competitive one. Every farmer will try to maximize his/her gain from selling of their products, but they have many choices or market outlets, which they should choose from. In lots of cases the market outlet choice is determined by gender, age, marital status, education and some other demographic variables, so their gains from this activities will vary based on mentioned characteristics (Nxumalo, Oduniyi, Antwi, & Tekana, 2019; Dessie, Abate, & Mekie, 2018). As farmers are in large number their collective activity will affect their choice of market outlet and their earnings in turn too (Xaba & Masuku, 2013) which have happened in case of honey producers in Chena district of Ethiopia, they are selling most of their product via cooperatives (Tarekegn, Haji, & Tegegne, 2017). In some area the farmers are having problem as they don't have market information to sell their product in the best market. Assisting them working in groups and sharing information with each other also will help with market outlet choice, which increases their earnings from market outlet selection (Tura & Hamo, 2018; Tadesse, 2011). In addition in developing countries the farmers and majority of the people have no or less formal education. By giving them some education and training regarding marketing, production, and so on they will overcome some of the burdens which decreases their income from market selection (Omari, 2010).

The second set of variables affecting market outlet choice in the literature which have been reviewed is the geographical distance to markets, depending on product characteristics. For dairy, vegetables and other perishable products the long distances to urban centers limiting the market outlet choice and earnings (Kuma, Baker, Getnet, & Kassa, 2013; Xaba & Masuku, 2013). As the honey is not one of those perishable products, the geographical distance is not affecting the product itself, but poses obstacles in the marketing process. Reaching the reliable

market especially to urban, regional and international markets are main problems, which locating in remote area will affect the income of farmers (Omari, 2010). Another challenge which comes from geography is the integration process to the market. They are faced challenges trying to access international markets by forging links with lead firms, they have difficulties to sustain vertical linkages and the interventions are insufficient when it come to market oriented activities (Mitchell, Keane, & Coles, 2009). Which affects the amount of honey supplied to the market. Beside that also some personal characteristics also have positive impact on the amount of marketable honey, which in turn affects the income of beekeepers (Abebe, 2009).

Developing countries are struggling to find financial resources, which hiders the market entry for small scale fruit producers in some cases (Tadesse, 2011), the access to credit is also affecting positively market outlet choice (Tura & Hamo, 2018). Helping with farmers will affect both farmers and the country as a whole (Otto & Varner, 2005). Some countries are helping with the beekeepers in different sections to overcome the financial problem (Miklyaev, Jenkins, & Barichello, 2013). The missing point in all of these papers and market outlet related research is that, they didn't take the effect of market outlet choice on income of farmers and producers. It's worth mentioning that market outlet choice has impact on income, economic development, employment, and food security as other value chain activities (Bammann, 2007; Hailu, May 2016; Lie & Rich, 2016; Rich, Baker, Negassa, & Ross, 2009). This paper took this important issue as main objective of the research to uncover in which extent the market outlet choice affects the income of rural honey producer in Badakhshan province of Afghanistan.

2. Method

In this paper the sampling has been in done in multi-stages. Looking down to the research area which is Badakhshan province, there are 28 districts, from which nearly 10 districts are suitable for honey production (Majidi, 2020). As some districts are under control of Taliban, we have selected 6 safe districts for this research. The districts under sampling are Baharak, Shuhada, Jurm, and Kishem and data collected in the month of August 2020 but due to security reason the access to the other two districts was unsafe. The mentioned districts cover over 50% of honey producers of Badakhshan province. From selected districts, villages have been randomly pulled out and the data has been collected accordingly. The number of samples has been calculated from the following formula:

$$n = \frac{N}{1+(N(e^2)} = \frac{600}{1+(600(0.08^2)} = \frac{600}{4.84} \approx 124 \qquad (1)$$

In the above equation, n stands for sample size, N is the total honey producers' population and e denotes the level of precision.

In total 150 questionnaires have been collected in randomly base in order to get avert the questionnaires with missing data. From which 129 have been used the rest had missing data and we were unable to include it into the analysis. From the total number of sample, kishem (29), Baharak (49), Jurm (38) and Shuhada (14) have been collected. These four districts are the main producers of honey and geographically very suitable for honey production and beekeeping industry.

By using both structured and semi-structured questionnaires the primary and secondary data have been obtained from beekeepers, producers, and civil servants. For more supporting information and data during questionnaire development, focused group discussions and key informant interviews have been carried out with traders, producers, and officials to make the questionnaire more reliable. The structured questionnaire was used to capture the determinants and affecting factors of market outlet choice as well as socio-economic and demographic characteristics of interviewees. We have selected data collectors from the mentioned districts residents in order to collect the most reliable data from the field while making the process run smooth and faster.

In this research two kind of methods have been used to do the analysis. The first one is multivariate Probit Regression model which is an excellent model to analyze the market outlet choice, which is a binary outcome (Gujrati, 2004; Cappellari & Jenkins, 2003). The second one is the OLS method to analyze the determinants of

income. The multinomial logistic Regression model is used to find out the determinants of market outlet of beekeepers. The analysis applied for the following model:

$$M.outlet = \beta_0 + \beta_1 NUC + \beta_2 MI + \beta_3 MT + \beta_4 ES + \beta_5 HQ + \beta_6 NB + \beta_7 BE + \beta_8 PCO + \beta_9 PM + \in \quad (2)$$

In model 2 market outlet is a factor variable for market choices. NUC indicates the nearest urban center which is continuous variable in KMs. MI stands for market information, which takes 1 if the beekeepers have information about market situation and 0 otherwise. MT is a binary variable for marketing training which takes 1 if they took one or taking one and 0 otherwise. ES shows the beekeeping extension services as binary variable, which takes 1 if they are receiving and 0 otherwise. HQ stands for honey quantity which is continuous variable as KGs in monthly bases. NB is stands for number of beehives which is a continuous variable. BE is the beekeeping experiences of beekeepers which is a continuous variable. PCO is the price of honey for certain marketing outlet as AFNs. PM is the payment method as binary variable which takes 1 if cash and 0 otherwise. $\in$ is the residuals and βs are the parameters. In second model we are going to analyze the impact of every market outlet choice on households' income. The following model is intended to be used:

$$Y = \beta_0 + \beta_1 MOC + \beta_j Xi + \in \quad (3)$$

In model 3 Y stands for monthly income of households in AFNs. MOC is the market outlet choice of the beekeepers as factor variable for all choices. And Xi is the matrix of demographic characteristics of beekeepers (age, education, household size, number of educated member etc.)

3. Results

In order to present the empirical findings, this part divided into two parts. At first the descriptive statistics are reported and in the following the findings from Multinomial Logit regression and OLS regression have been reported. To start with, in the table 1, the descriptive statistics of the variables has been reported. As it is obvious in the table there is mean, standard deviation, minimum and maximum have been listed for all variables. For more detail look at table 1.

Table 1: Descriptive Statistics of Variables Used in Analysis

Variable	Obs	Mean	Std. Dev.	Min	Max
Age	129	39.68992	9.995154	20	70
Education	129	8.565891	6.525006	0	16
Experience	129	9.085271	6.530016	1	38
Household size	129	8.511628	3.869182	0	21
Last year production	129	512.7674	607.8735	0	3700
Income	129	251886.7	333557.2	7000	2220000
Trainings	129	0.48062	0.501572	0	1
Other income	129	9514.851	8628.863	0	70000
Total income	129	259336.3	332805.1	7000	2220000
Beehive number	129	26.65116	23.50487	2	176
Urban distance	129	4.810853	6.032467	0	25
Market information	129	0.31783	0.467448	0	1
Marketing education	129	0.193798	0.396814	0	1
Consultation of Gov. NGOs	129	0.426357	0.496475	0	1
Local market price	129	304.6512	244.5054	500	700
Wholesale market price	129	272.1094	226.0432	400	650
Contract price	129	18.21705	91.62977	400	550
Home selling price	129	369.7674	220.9195	450	800

As indicated in table 1, 19 variables have been used in this paper. Dependent variable here is the income of beekeepers and the interested variable is market outlet choice. Market outlet choice of beekeepers is 4 channels in Badakhshan, namely, wholesale, selling from home, contract and local market retail selling. Nearly all of the farmers using more than one market outlet to sell their product. But every one of the farmers are using at least one market as the main channel for selling the honey they are producing. So the biggest market outlet of farmers which they have indicated in the sample gathered, has been reported in table 2:

Table 2: Biggest Market Outlet Used by Beekeepers

No	Outlet	Frequency	Percentage	Cumulative%
1	Selling to contractor	5	3.88	3.88
2	Selling from home	22	17.05	20.93
3	Selling to local market retail	36	27.91	48.84
4	Wholesale	66	51.16	100
	Total	129	100%	

As it's obvious from the table 2, the biggest share of market outlet usage is the wholesale market. The second one is retail selling in local market and selling from home takes the third position. Selling to contractor is very rarely used market outlet in Badakhshan province and the study area of this research.

Looking to results from table 3, it has been indicated that the contractor market outlet, doesn't have any factor affecting it comparing to the base which is wholesale. It means that the contractor selling and wholesale carry the same dynamics and share the same characteristics. This finding is very rational as the wholesale and contract selling are fall into the same selling type, with very little differences. But looking to the second column which is selling from home, which has lots of affecting factors comparing wholesale market outlet. Maybe there are less examples of such marketing outlet tool in other countries. There is much more trust to beekeepers themselves regarding the quality of product comparing to the shops and stores of the market. Lots of local residents prefer to buy first hand from the beekeepers themselves. The first affecting factor of home market outlet is the urban center. Being located far from urban center pushes the beekeepers to sell their products from home rather comparing to wholesale market outlet. In recent years, government and other NGOs are providing many consultation to beekeepers in lots of issues regarding to beekeeping and honey production. This variable affects the home selling market outlet negatively. If a farmers receives this kinds of consultation they are tend to use the wholesale market rather than selling from home. But other beekeeping training have positive impact on home selling market outlet usage. Quantity of production affects the home market negatively, which means by increasing the production, the beekeepers are using wholesale market rather home selling market. Beehives quantities, educational level of beekeepers and home selling market outlet price affecting this market outlet positively. But price of wholesale market affects it negatively.

Table 3: Factors Affecting Market Outlet Choice of Beekeeper in Badakhshan Province Multinomial Logit Model

Market outlet choice	Contractor	Selling from home	Retail in Local
Urban center	-0.430	0.230	-0.047
	(1,102.047)	(0.116)**	(0.176)
Market information	-17.363	-0.200	-7.887
	(16,351.102)	(1.556)	(3.195)**
Marketing education	36.225	-1.320	2.140
	(20,380.286)	(1.738)	(1.686)
Government & NGO consulting services	-2.871	-3.305	2.113
	(4,730.186)	(1.840)*	(1.670)
Trainings	9.187	6.696	6.752
	(11,564.828)	(2.423)***	(2.600)***
Quantity of production	0.019	-0.016	-0.001
	(11.392)	(0.008)**	(0.001)
Beehive	-0.580	0.213	-0.067

	(919.017)	(0.111)*	(0.044)
Experience	2.501	-0.197	-0.265
	(1,126.129)	(0.233)	(0.180)
Age	-0.731	-0.039	0.244
	(2,920.605)	(0.105)	(0.103)**
Education level	-1.890	0.551	-0.048
	(2,531.742)	(0.231)**	(0.145)
Local market price	-0.056	0.000	0.039
	(52.024)	(0.005)	(0.015)***
Wholesale market price	-0.010	-0.023	-0.044
	(43.765)	(0.007)***	(0.013)***
Contract price	0.041	-0.007	-0.052
	(25.384)	(0.012)	(34,685.604)
Home selling price	0.021	0.020	-0.002
	(69.284)	(0.008)**	(0.005)
Constant	-13.993	-7.689	-12.542
	(74,384.923)	(5.348)	(5.408)**
N	128	128	128

Number of observation= 128, LR chi2 (45) = 219.75, Prob > chi2 =0.0000, Log likelihood = -21.562986 Pseudo R2= 0.8359

The last market outlet is local market retail selling. Market information of beekeepers affects it negatively, which means if they are aware of honey market they will choose wholesale market rather than local retail. Age of beekeeper and local market price affecting the selection of local market outlet positively while wholesale market price affects it negatively (Ref. Table 3).

Table 4: Factors Affecting Total Income of Beekeepers in Badakhshan Province OLS Model

Income	Coefficient	S.Error	T stat	P-value
Market Outlet (Ref. Contract selling)				
Selling from home	-19407.7	65053.99	-0.3	0.766
Selling in Local market retail	-49324.5	64229.32	-0.77	0.444
Wholesale	45739.95	71387.21	0.64	0.523
District (ref. Kishem)				
Baharak	-113905	52202	-2.18	0.031
Jurm	94448.46	102288.1	0.92	0.358
Shahada	-162553	55586.24	-2.92	0.004
Age	1315.659	3620.739	0.36	0.717
Education	4615.285	3611.013	1.28	0.204
Experience	11581.05	5001.972	2.32	0.022
Household size	8009.453	4520.327	1.77	0.079
Constant term	20069.13	142810.7	0.14	0.888
N	129			

R-squared= 0.2498, F (10, 118) = 3.88

Table 4 reporting the factors affecting total income of beekeepers. In this part some variables like working experience and household size affecting the total income of beekeepers in study area, but none of market outlet choices affecting the income of beekeepers. This shows that there is no relationship between income of beekeepers and their decision to select the certain market outlet to sell their honey product. Although that the wholesale market outlet has a positive relationship with income of beekeepers, but the coefficient is not statistically significant even in 10% level. Selling in local market and selling from has negative relationship with income of beekeepers. They

also not statistically significant parameters. Also there was one question about selling the product on-time which from 129 of sample 102 of them indicated that their products don't have market. Which shows, that if there would be wholesale opportunities they can earn more than what they are earning now.

4. Conclusion

This paper investigated the impact of market outlet choice in beekeepers of Badakshan province of Afghanistan. The findings of this paper shows that beekeepers are using four major channels of marketing or market outlets to sell their product (honey). They are mainly using wholesale, local market, contractor and selling from home. The factors affecting beekeepers to choose the home selling channels are very different from that of wholesale market while the contract selling carry nearly the same determinants as wholesale market.

Looking to impact of market outlet choice in income of beekeepers, this paper have found that there is no relationship between them. It means that selecting among different market outlet the beekeepers are not receiving more income. Maybe it's because of similarity of prices in all this market outlets. If we look through the price of each market outlet, we can observe that the prices are not very different. Despite being statistically insignificant, the relationship between wholesale market outlet and income is positive. It means that selling in wholesale market will affect the income of beekeepers positively. Also there was one question about selling the product on-time which from 129 of sample 102 of them indicated that their products don't have market. Which shows, that if there would be wholesale opportunities they can earn more than what they are earning now.

Acknowledgments
This paper received financial support from Higher Education Development Program (HEDP) of Ministry of Higher Education of Afghanistan under individual research grant of 2019.

References

Abebe, A. (2009). Market Chain Analysis Of Honey Production: In Atsbi Wemberta District, Eastern Zone Of Tigray National Regional State. Haramaya: Haramaya University.

Bammann, H. (2007). Participatory value chain analysis for improved farmer incomes, employment opportunities and food security. Pacific Economic Bulletin, 22(3), 113-125.

Cappellari, L., & Jenkins, S. P. (2003). Multivariate probit regression using simulated maximum likelihood. The Stata Journal, 3(3), 278–294.

Central Statistic Organization. (2014). National Risk and Vulnerability Assessment 2011 - 2012 (Afghanistan's Living Condition Survey). Kabul: CSO.

Citizen Charter Program. (2019). www.ccnpp.org. 11 22, 2019 tarihinde http://www.ccnpp.org/PageDari.aspx?PageID=15 adresinden alındı

CSO. (2009). National Risk and Vulnerability Assessment 2007/8 A profile of Afghanistan. Kabul: ICON INSTITUTE GmbH & Co. KG Consulting Group.

Department of Agriculture and Livestock. (2020, 5 21). Management Information System. (J. Yolchi, Interviewer)

Dessie, A. B., Abate, T. M., & Mekie, T. M. (2018). Factors afecting market outlet choice of wheat producers in North Gondar Zone, Ethiopia. Agriculture & Food Security, 1-8. doi:10.1186/s40066-018-0241

Gujrati, D. (2004). Basic Econometrics 4th Edition. The McGraw-Hill Companies.

Hailu, A. (May 2016). Value Chain Analysis of Vegetables: The Case of Ejere District, West Shoa Zone, Oromia National Regional State of Ethiopia. Haramaya: Haramaya University.

IPC. (2019). IPC Acute Food Insecurity Analysis August 2019 – March 2020. Kabul: Ministry of Agriculture, Irregation and Livestock.

Kuma, B., Baker, D., Getnet, K., & Kassa, B. (2013). Factors affecting milk market outlet choices in Wolaita zone, Ethiopia. African Journal of Agricultural Marketing, 1(2), 024-031.

Lie, H., & Rich, K. M. (2016). Modeling Dynamic Processes in Smallholder Dairy Value Chains in Nicaragua: A System Dynamics Approach. International Journal of Food System Dynamics, 7(4), 328-340.

Majidi, M. (2020, 2 3). Honey production in Badakhshan province, Afghanistan. (J. Yolchi, Interviewer)

Marsden, T., Banks, J., & Bristow, G. (2000). Food Supply Chain Approaches: Exploring their Role in Rural Development. Sociologia Ruralis, 40(4), 424-438.

Miklyaev, M., Jenkins, G. P., & Barichello, R. R. (2013, 7). Honey Production in Ethiopia: A Cost-Benefit Analysis of Modern Versus Traditional Beekeeping. Development Discussion Paper.

Mitchell, J., Keane, J., & Coles, C. (2009). Trading Up: How a Value Chain Approach Can Benefit the Rural Poor. London: COPLA Global: Overseas Development Institute.

Nxumalo, K. K., Oduniyi, O. S., Antwi, M. A., & Tekana, S. S. (2019). Determinants of market channel choice utilised by maize and sunflower farmers in the North West province, South Africa. Cogent Social Sciences, 5(1), 1-18. doi:10.1080/23311886.2019.1678451

Omari, H. (2010). Analysis Of Honey Value Chain And Honey Value Adding Activities For Traditional Beekeeping: The Case Of Kongwa District, Dodoma. Morogoro, Tanzania: Sokoine University.

Otto, D., & Varner, T. (2005). Consumers, Vendors, and the Economic Importance of Iowa Farmers' Markets: An Economic Impact Survey Analysis . Iowa: Leopold Center Pubs and Papers.

Rich, K. M., Baker, D., Negassa, A., & Ross, R. B. (2009). Concepts, Applications, and Extensions of Value Chain Analysis to Livestock Systems in Developing Countries. International Association of Agricultural Economists Conference, (s. 16-22). Beijing China.

Tadesse, A. (2011). Market Chain Analysis of Fruits for Gomma Woreda, Jimma Zone, Oromia National Regional State. Harmaya: Harmaya University.

Tarekegn, K., Haji, J., & Tegegne, B. (2017). Determinants of honey producer market outlet choice in Chena District, southern Ethiopia: a multivariate probit regression analysis. Agricultural and Food Economics, 5(20), 1-14. doi:DOI 10.1186/s40100-017-0090-0

Tura, E. B., & Hamo, T. K. (2018). Determinants of Tomato Smallholder Farmers Market outlet Choices in Wes Shewa, Ethiopia. Journal of Agricultural Economics and Rural Development, 4(2), 454-460.

Xaba, B. G., & Masuku, M. B. (2013). Factors affecting the choice of marketing channel by vegetable farmers in Swaziland. Sustainable Agriculture Research, 2(1), 112-123. doi:10.5539/sar.v2n1p112

Yamaneberhan, M. (2012). Value chain analysis of honey production. Saarbrucken, Germany: LAP Lambert Academic Publishing.

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 172-188
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.354

Study of Airport Service Quality and Profitability in Indonesia

Adi Nugroho[1]

[1] Pancasila University, Jakarta, Indonesia

Correspondence: Adi Nughroho, Faculty Of Economy And Business, Pancasila University, Jakarta, Indonesia.
E-mail: adinugroho@univpancasila.ac.id

Abstract
This study was about the Airport Service Quality (ASQ) measurement and its relation to profitability in the airport industry. The main purpose of this study was to develop an understanding of the ASQ measurement in Airports by investigating the relationships of service quality in terms of creating purchase intentions. In specific to ASQ, the surveys have been systematically carried out by many airport operators all over the world. ASQ has 8 components: access; check-in; passport/personal ID control; security; finding your way; airport facilities; airport environment; and arrival services. This is different from PZB's (1985) Service Quality dimensions. This suggests that an effective process of measuring and analyzing passenger perceptions of ASQ is not easily achieved. These concerns are certainly relevant to avoid misinterpreting passenger perceptions. The measurement model should be considered for a multidimensional approach in the context of airport performance measurement regarding service quality.The study, however, included the perceptions of both international passengers and domestic concerning the current service levels, more specific was using the measurement model of Cronin and Taylor (1992). Cronin and Taylor (1992) say that perception alone is enough and even better than other models i.e, PZB (1988) model. This study analyzes whether passengers may stay longer in the airport, recommend the airport to other people or pay higher tax if they are satisfied with the service offers by airport. This also included an assessment the ability ASQ to explain the variation in repeat purchase intention including interaction among variables. The results of this study show ASQ has a moderately low effect of purchasing intentions.

Keywords: Airport, Service Quality, Purchase Intention

1. Introduction

1.1 Background

Service Quality has been found to be crucial for retaining profits in service-providing institutions. Tangible and intangible aspects of service performance affect the service quality, which in turn determines purchase intention in many industries including airports.

In the transportation industry, airports are established to service and facilitate aircraft, cargo and passengers. In addition to that, airports are required to fulfill three main tasks. They are flight safety; flight security; and airport comfort-ability. In any situation, the three main tasks should become the top priority, notwithstanding the

economically unprofitable condition of an airport, in which it is unable to cover its operating cost. This has become the commitment of the airport which shall always be upheld. However, some airports are business organization; their shareholders demand that they make profits. This means that it is an onerous situation for company that manages an airport since an airport has to provide some services not only on flight safety and flight security but also on a consumers' interest basis.

In Indonesia, airports are central to 'create and promote Indonesia by – being a significant Indonesia transportation hub for the benefit of Indonesia and environs; striving to maximize return on shareholder's funds and company assets; and striving for excellence in the services which it provides.' This should be conducted in conjunction with airlines, concessionaires and other firms doing business on airport property. Besides that, airports are a point in a route system for loading and transfer of passengers and freight. In addressing these objectives, the measurement of the first objective seems relatively straightforward. However, adequate measurements of the other two - have proved difficult and will be the primary focus of this research. The difficulty arise as airports and policy makers must deal with the questions of how, where, and on what the specific services are to be provided.

Passengers have continuouslyincreasede their expectations. As passengers do not easily articulate service quality, the measurement of airports' service quality has to be based on perceived quality rather than objective quality because (Parasuraman, et al., 1983) - services are somewhat different from goods, though most of the principles needed to develop a quality principles for goods can also be applied by acquiring an understanding of how services differ from tangible products. As industrial activity has shifted more to services, there has been a corresponding increase in the need to monitor service quality (ACI, 2020).

The ever increasing importance of service organization to the airport companies actually has been recognized by marketing academics by exponential development in services and marketing research. Within the airport businesses, a prominent research stream has involved the measurement of service quality. They realize that the inability of airports and their customers to grasp a clear metric or establish a clear standard for performance has only fueled consumer discontent. They concluded that it is necessary for airports to continuously construct their service quality.

Airport Council International (ACI)has provided Generic Scales of perceived service quality in order to continuously improving the passenger experience in airport since 2006. However, Bazerra and Gomes (2016) suggest that ASQ needs more consideration for validity and reliability to avoid misapprehension of passenger' perceptions. This need has become even more crucial with the spread of notion that service quality will lead to airports profitability.

1.2 Problem Statement

Past research on service quality in airports have been conducted by several institution or individuals. At least, three surveys for performing this type of analysis are reported: the Airport Service Quality (ASQ) index developed by Airports Council International (ACI), airport index developed by SKYTRAX, and index developed by J.D. Power. They either conducted research on service quality issues specific to their airport or others; and various transportation and travel industry groups may issue consumer-polled rankings of airport facilities. In addition to that, qualitative and qualitative efforts to examine airport qualityhaves also been conducted by several organizations such as Airport Council International among others that uses the research to monitor airport service quality annually. Others researchers and airports have also explored service quality issues in airport (Doganis, 1991; Brink and Maddison, 1975; Feldman and Shields, 1998; Lemer, 1992; Rowland, 1994; Seneviratne and Martel, 1994; Tretheway, 1998). However, Dawnaet al.l (2001) and Bazerra and Gomes (2016) say that these works are morconcernewithn to airport operators and little reference of characteristics and factors that comprise quality in airport facilities and operations. Despite these efforts considered incom,plete they have provided a base on which to construct a comprehensive study of airport quality.

Another problem is on the service quality measurement and its contribution to the company performance. Unlike manufactured goods quality, airport service quality is an elusive and distinctive construct. It can be defined from several perspectives, including: the ability to satisfy the needs and expectations of the customer; and the totality of features and characteristics of a product or service that bear on its ability to satisfy given needs. This means that the researchers have to concern more on airports' user perspective on the airport service quality provided and its linkage to profitability.

It is still difficult, however, to isolate the contribution has made to profitability. The existing literature is stuffed with unsubstantiated principle. Yet too little evidence exists to substantiate whether these principles result in outcomes. Given difficulties in isolating the contribution made service quality to profitabilty and its numerous surrogate measures, this is not surprising as pointed out by Zeithaml (2000) an author who has been investigating service quality, profitability, and the economic worth of customers for years concluded that much research remains to be done to validate this early evidence of service quality measurement and integrated body of knowledge about how to perform the measur ement.Nevertheless, the studies by Cronin and Taylor (1992),et al.n et al (1993), Rust and Zahroik (1993), and Anet al.n et al (1994) provide a promising foundation for the deveof lopment such research.

In fact, in the last decade, the emergence of diverse instrumeasurement hasrementhas made possible a remarkable development in the study of quality perception related to profitability. The existence of these measurements had been translated into the development of an important investigation agenda oriented along the line: the application of measurement to service quality and the study of how quality influences and affects profitability.

Yet confusion still exists as to which measure offers the greatest understandings. With the purpose of contributing a solid body of evidence on the validity and reliability of quality perception measurement instruments, it is unnecessary to conduct a study that compared of the most frequently used instruments. However, as there is an extensive ronearch of Airport Service Quality iairports allortsall over the world, the main purpose of this study is to extend the researches of Cronin and Taylor (1992), with specific emphasis on the contribution made by airport service quality to profitability in the airport businesses and the concern of this research, specifically is their terminal services.

In Indonesia, this need has become even more important especially with the spread of globalization. As Indonesia is surrounded by countries that have very high standards of international airports such as Singapore with its ChangiAirport and Malaysia with its KLIAAirport. In addition to increased international competition, the increasing awareness of the airport service quality has also imposed preonures to airport operators in Indonesia to improve towards certain quality standards.

1.3 Objection of the Study

The overall objective of this study is to explore the relationship between airport service quality and profitability. The specific objectives were: 1) to assess the validity of Airport Service Quality that is developed by ACI; and service performance measures in the Indonesia airports; 2) To determine the strengths and directions of the correlation between the service quality measure (ASQ) and repeat purchase intentions. 3) To investigate any Service Quality-Purchase Intentions concerns raised by passengers so that remedies may be incorporated into airport policy.

1.4 LiteReview Revuew

Airports provide their service with outcomes that are inherently different from those of any serprovideriders andmanufacturersand otherer product-based enterprises. A customer orientated approach towards understanding quality has permeated the airport service operations literature. The literature on the multi-dimensionality of service quality, and customer evaluations thereof, is now well established (see, for example, Gronroos, 1984; Johnston, 1995; Lewis and Booms, 1983; Parasuraman et al., 1985; Wyckoff, 1984). On the other hand, comparison of the

manufacturing and service quality literatures on customer orientation reveals that, while they share customer-baseded perspective on quality management, there are a number of differences. There are four differences between service and product based enterprises. They are intangibility, inseparability of production and consumption, heterogeneity, and perishability.

Intangibility

Services are invisible. The consumers have difficulty in judging the value of the service before it is actually consumed.

Heterogeneity

Services are delivered according to different basis under which they are being provided. This variance is more pronounced for services than for tangible products. Services are very much influenced by the constitution and qualities of the providers.

Inseparability

The difference between other products and a service is that the quality of a service cannot be determined before consumption. This is because service production and consumption occur almost simultaneously.

Perishability

Differentfromo most products, organizations cannot stockpile services and sell them at a later date. In most cases, as soon as a service is provided, it must be consumed.

Quality of service for tangible products such as cars, refrigerators, and baked beans cannot be easily transferred to intangible services. But, academics and business practitioners are compelled to consider service quality to satisfy customers.

It should be noted that producers usually offer the market with different types of products, and the pure producare is very rare (Stamatis, 1994). The following produnormally differered in market place.

- Pure products. Products that are tangibles such as soap, salt, etc.
- Tangible products. Accompanied by service. The more sophisticated product the more service required.
- Mixed product. Goods and services equally contribute such as restaurant—food and service.
- Services accompanied by product airplane give free drinks and foods.
- Pure services. The product is entirely services, such as massages, consultant, etc.

1.5 The Multi Dimensions of Service Quality

The discussion of the nature of perceived product quality can become very obscure as it involves measuring consumers' expectations of what a firm should provide in the industry and what consumers' perceptions are in respect of this service provision. The perception of quality, however, has changed from time to time as the quality concept has been sometimes conflicting.

Parasuraman, Zeithaml, and Berry (1985) began a research process to investigate service quality based on consumers' expectations and perceptions. The idea was unidimensional scales but was seen as unsatisfactory for measuring service quality given its multidimensional nature and consequently multidimensional scales were developed. Based on their research, they proposed for the very first time that service quality expectation components and classification have five variables: tangibles; reliability; responsiveness; assurance and empathy. It was ten dimensions then they reduced to five. It came through numerous qualitative studies. They evolved a set of five dimensions that have been consistently ranked by customers to be most important for service quality, regardless of service industry. These dimensions are presented as in the table 1.

Table 1: Service Quality Dimensions

Tangibles	Physical appearance, employee appearance, equipment availability and communication structure
Reliability	The ability of a firm and its employees to deliver the service accurately and in a trustworthy manner
Responsiveness	The ability of a firm and its employees' ability to deliver an efficient and fast service
Assurance	The ability to inspire confidence, a guarantee of consistent quality in their service.
Empathy	The capability of the service provider to understand consumers' needs

These dimensions have been subjected to empirical testing by number of authors (see, Parasuraman, et al et al. 1993; Carman, 1990; Babakus and Boller, 1992; Cronin and Taylor, 1992, 1994; and Sureshchandar, Rajendran, and Kamalanabhan, 2001). Although they found to lack specificity in certain industries, Parasuramanet al.l (1991) assert that the underlying dimensions what is so-called SERVQUAL scale; provide framework that can be enhanced through the use of additional items that are specific to certain context.

Within the airport industry, and in specific to ASQ, the surveys have been systematically carried out by many airport operators all over the world (ACI, 2020).Different form PZB (1985), Airport service quality components and classification have 8 components: access; check-in; passport/personal ID control; security; finding your way; airport facilities; airport environment; and arrival services.

However, Bazerra and Gomes (2016)suggest that due to the complexity of the airport service environment, an effective process of measuring and analyzing passenger perceptions of ASQ is not easily achieved. Generic scales for perceived service quality might not cover some particularities, and there has been only limited consideration for validity and reliability. These concerns are certainly relevant to avoid misinterpreting passenger perceptions. The proposed measurement model could be considered an alternative for a multidimensional approach in the context of airport performance measurement regarding service quality. Based on this assertion service quality in airport would be investigated.

1.6 Service Quality and Company Performance

Although the literature is replete with research on service quality, Zeithaml (2000) an author that has been investigating service quality and profitability many years suggests that in the past, expenditures on quality have not been explicitly linked to profits because costs and savings were the only variables on which information was available. More recently, evidence about the profit consequences of service quality stemming from other sources has been found.

In addition, Zeithaml (2000) mentioned that research on the direct relationship between service quality and profits had shown both positive effects in a limited number of studies and no effects in other studies. By no means has this stream of research been exhausted. To a large extent, these findings may be due to the difficulties involved in isolating the 'real' contribution that quality makes to the profitability. A myriad of other factors also influence profitability and as a result, the link between superior service quality and higher profitability is considered as a given.

It is believed that another construct mediates the service quality-profit association: purchase intentions. Service quality by nature is subjective concept (Oliver, 1993). As consumers do not easily articulate service quality, the recipient of the service can only really assess it, thereby making its measurement more subjective than exact. The measurement of service quality has to be based on perceived quality rather than objective quality because services are intangible, heterogeneous and their consumption and production occurs simultaneously.

Published research also offers evidence that service-quality perceptions positively affect intentions to behave in positive ways-praising the firm, preferring the company over others, increasing the volume of purchases, or agreeably paying a price premium. Most of the early research operationalized behavioral intentions in a unidimensional way rather than delineated specific types of behavioral intentions. The recent articles by Brady, Cronin and Brand (2002), Cronin and Taylor (1992), Broet al. al (1993), Rust and Zahorik (1993) have initiated a move towards investigating this link and provide promising results.

1.7 Service Quality Measurement

In addition to the five dimensions nature of service quality, Parasuraet al.t al (1985suggestts that a consumer perceives in a service as a function of the magnitude and direction of the gap between expected Service and Perceived service. This means that the service quality is influenced by consumers' perception and consumers' expectations. Parasuraman eet al.(1985), therefore, suggest that evaluating service quality by measuring expectations and performance, is the way to reduce or even eliminate faults in service. Later this is so called disconfirmation of expectations paradigm (performance-minus-expectation or P-E). The P-E gap was originally used by researchers (Oliver, 1980). The use of that paradigm, however, has been subjected to a number of theoretical and operational criticisms by number of authors (Brady, Cronin and Brand, 2002; Buttle, 1996; Carman, 1990; Babakus and Boller, 1992; Cronin and Taylor, 1992, 1994; Brownet al.l, 1993; Spreng and Olshavsky, 1993; Teas, 1993).

These authors suggest that evaluating service quality by measuring expectation and performance separately is superfluous and that single measures of performance should be employed. These performance-based-measures include Brady, Cronin and Brand (2002) SERVPERF instrument (which is the performance section of the SERVQUAL instrument), Teas' (1993) re-specification of the expectations measure, and the 'direct judgment' or 'non-difference score' measure (Browet al.al, 1993). The 'direct judgment' or 'non-difference score' measurincorporateste both expectations and perceived performanconin one scale. These measures have been tested and claimed as superior for a number of reasons. This study, thereforeemploysoy SERVPERF instruments only to measure service quality.

1.8 Conceptual Framework

Figure 1 below, depicted the relationship the impact of service quality to purchase intention.

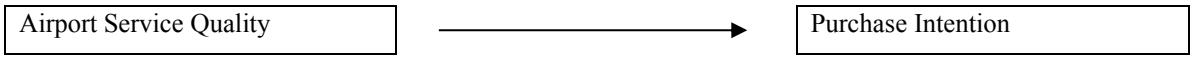


Figure 1: The impact of ASQ on Purchase Intention

Hypotheses of this studwereas ASQ han as influential impact on Purchase Intention

2. Method

To provide the researcher with adequate data, field visits and personal interviews with passengers in the four major Indonesia International Airports were conducted in order to obtain information regarding their perceptions and feelings of the airports' performance.

2.1 Instrument Development

When designing the pilot questionnaire, the 22 items in the SERVQUAL questionnaire developed by Parasuraman et al. (1985) were ignored to. Instead of that the service items were derived from ASQ without modifications and adaptations. The results of that were the items as shown in the Figure 1 and that became the first section of the questionnaires.

V1. Ground transportation to/from airport
V2. Parking facilities
V3. VfM of parking facilities
V4. Availability of baggage carts/trolleys
V5. Waiting time in check-in queue/line
V6. Efficiency of check-in staff
V7. Courtesy and helpfulness of check-in staff
V8. Waiting time at passport/personal ID inspection
V9. Courtesy and helpfulness of inspection staff
V10. Courtesy and helpfulness of security staff
V11. Thoroughness of security inspection
V12. Waiting time at security inspection
V13. Feeling of being safe and secure
V14. Ease of finding your way through airport
V15. Flight information screens
V16. Walking distance inside the terminal
V17. Ease of making connections with other flights
V18. Courtesy and helpfulness of airport staff
V19. Restaurant/Eating facilities
V20. VfM of restaurant/eating facilities
V21. Availability of bank/ATM facilities/money changers
V22. Shopping facilities
V23. VfM of shopping facilities
V24. Internet access/Wi-Fi
V25. Business/Executive lounges
V26. Availability of washrooms/toilets
V27. Cleanliness of washrooms/toilets
V28. Comfort of waiting/gate areas
V29. Cleanliness of airport terminal
V30. Ambience of the airport
V31. Passport/ID inspection
V32. Speed of baggage delivery
V33. Customs inspection

Figure 1: The Attributes of Airport Terminal Service Quality

The next section is containing the three measures of repeat purchase: Come earlier to the airport; The willingness to recommend the airport to others and Paying airport tax higher were placed after respondents completed the Expectations and Perceptions section in the beginning of the questionnaire (see appendix A). This was different from original ASQ in order to be more relevant the study objectives This, however, may cause unavoidable any potential antecedent behavior-attitude or attitude-behavior effects.

Juster's (1966) 'purchase probability scale' was used to measure repeat purchase intentions, the intention of coming earlier to the airport; the willingness to recommend the airport to others and paying airport tax higher. This means that the questionnaires used closed ended questions with ordered choices.Apart from that this 11-point Juster's scale has been tested to predict demand for durables, services, FCMG, and also applied to voting behavior, see Dawes (2002), Genet al.et al, (1991),et al.et al (1991), Seymet al.t al (1994) and Brennan and Esslemont (1994) and Brennan (1995). Its probability statements of intent to purchase reflect a behavioral predisposition to buy and

it had been suggested that the scale is a more reliable instrument than the Likert type, non-probability measurement of purchase intentions used by Cronin and Taylor (1992). When designing measurement, the cultural aspects were taken into account (Scott and Shieff, 1993) Therefore twoo languages in the questionnaires were applied those; English and Bahasa Indonesia to anticipate differing languages as many foreign travelers using airports. The two languages used in the study had been proof by back-to-back translations.

2.2 Pre-Test

The questionnaires then subjected to limited pre-tests with a convenience sample of passengers to avoid un-relevant issues, such as ambiguous questions. In fact, the five dimensions did not exist as proposed by PZB based the Eigen-value calculation. In fact, no change was necessary to the original format of the questionnaires since the pretest indicated no relevant results.

2.3 Sample

After pre-testing, this research was setting the sample size. Despite the sample size might be determined either by using statistical or through some rules of thumb (Aaker et al., 1995), the sample each group has minimum sample size of 100.

As this study was about to explore service quality perception in airport, and also the study focused on establishing service quality measurement in the airport and the effect of service quality on the purchase intention. Therefore, the study was conducted in the natural environments without any manipulation and control. In fact, there are about 26 commercial airports in Indonesia. Initially, all of commercial airports were going to be contacted but this consumed too much effort, time and especially budget. Consequently, there were only four airports were picked up to take part, namely, These four airports were Bali Aiirport; Surabaya Airport; Makassar Airport and Lombok Airport.

Simple stratified equal random sampling was employed despite the numbers of population varies for each airport. **The number of sample was 500.** By this, the respondents were picked in about every 30 minutes based on passengers who entered the boarding lounge; the probability of passengers that were stratified on one airport in the sample was expected equal. Then, sub group sample size determined in equal of target population. The survey were conducted for two months in July-August 2020

	Bali Airport	**Surabaya Airport**	**Makassar Airport**	**Lombok Airport**
Sample	**125**	**125**	**125**	**125**

3. Results

One of the primary objectives of this study was to assess the reliability and validity of ASQ. This was actually the first objective in this study. Prior to reliability and validity analysis, dimensionalities of service quality measures were tested to be used to simplify the interpretation of factors.

3.1 Dimensionality of Service Quality Measures

Although not a major objective of this study, the underlying factor structure of 33 items was investigated. It was seen important to subsequent analysis that the factor structure should be consistent over the 33 items. This was just ascertaining the structure would be consistent with the previous finding in the pilot survey. If a five factor structure consistent with Parasuraman et al's findings did not exist for the service environment, then the instrument would be treated as uni-dimensional in the same manner as Cronin and Taylor (1992). Variables that did not load positively higher than 0.40 on this one variable would be removed from the examination.

factor analysis results were dissimilar to PZB's five factor conceptualization of service quality (table 2). This means that the results were similar to pilot study. Following Cronin and Taylor's (1992) study, the two scales were treated as uni-dimensional.

In addition, a factor rotation procedure was undertaken on both scales showed all variables loading predictably on a single factor with no negative loadings. Consequently, all items were also retained for subsequent analysis.

Table 2: Factor Analysis of 33 Individual dimensions of Service Quality

v1	0.49
v2	0,55
v3	0.83
v4	0.84
v5	0.82
v6	0.74
v7	0.84
v8	0.78
v9	0.69
v10	0.73
v11	0.83
v12	0.81
v13	0,59
v14	0.87
v15	0.91
v16	0.89
v17	0.82
v18	0.70
v19	0.72
v20	0.70
v21	0.72
v22	0.89
v23	0.83
v24	0.90
v25	0.90
v26	0.83
v27	0.92
v28	0.73
v29	0.79
v30	0.76
v31	0.84
v32	0.82
v33	0.86
Eigen value	**20,98**
% of Variance	**52,867%**

3. 2 Reliability Analysis

A composite score of the questionnaire was obtained by summing the scores of individual statements. Reliability tests were run to determine how strongly the attributes were related to each other and to the composite score.

It should be noted, however, there is no clear cut value of alpha which will distinguish between reliable and unreliable measures, but the internal consistency reliability test was deemed to be acceptable for basic research when the reliability coefficient exceeded of 0.70 level (Nunnally, 1978). The closer the Cronbach's alpha is to 1, the higher the internal consistency reliability. Therefore, all items in the questionnaire were tested to see the Cronbach's alpha whether below or higher than 0.70. Despite, many other measures of consistency reliability

used (i.e. split-half reliability coefficient), Sekaran (2000) said that Cronbach's alpha is an adequate test of internal consistency reliability.

It was found that all items were found positive. The alpha is 0.98. This shows that the attributes are very strong related each other and highly internal consistency reliability. This finding is consistence with the finding in the pilot survey. Therefore, it was unnecessary to reconstruct of the questionnaire design.

3.3 Validity Analysis

Many have said that if the result of measurement test is considered reliable, validity test can be ignored as the result of the measurement considered valid. However, in this respect, the next study should asses the construct validity to determine the ability of the Service Quality to predict purchase intention.

Validity is defined as the degree to which a variable or construct achieves theoretical and empirical meaning within the overall structure of a theory (Cresswell, 1994). The importance of construct validity cannot be emphasized enough. Churchill (1979) states that the construct validity should lie at the heart of the scientific process (and) is most directly related to the question of what the instrument is in fact measuring. An assessment of the construct validity of the ASQ measures was undertaken in this study.

Churchill (1979) says that there are three tests of construct validity: convergent validity; discriminant validity; and measurement behavior.

The convergent validity is the extent to which the measure correlates with similar measures of the same construct. The correlation matrix (table 3) indicates a high degree of convergent validity for ASQ measures with high correlation between these measures.

Table 3:Correlation Coefficients

	ASQ	Come Earlier 1 hour before flight	Come Earlier 2 hour before flight	Come Earlier three hour before flight	Re-commend airport to others	Paying airport tax higher
ASQ	1					
	.					
Come Earlier one hour before flight	0.065	1				
	(0.465)	.				
Come Earlier two hour before flight	-0.007	0.104	1			
	(0.938)	(0.240)	.			
Come Earlier three hour before flight	0.206	0.200	0.203	1		
	(0.022)	(0.027)	(0.024)	.		
Recommend airport to others	0.171	0.136	0.219	0.425	1	
	(0.052)	(0.124)	(0.013)	(0.000)	.	
Paying airport tax higher	0.032	-0.018	-0.047	-0.008	0.180	1
	(0.724)	(0.841)	(0.605)	(0.929)	(0.045)	.

Discriminant validity is the degree to which the measure has low correlation with measures of other constructs. The ASQ scales exhibit discriminant validity as exhibited by the low correlation with the repeat purchase measures.

The final test of construct validity relates to 'measure behavior'. In this respect, the ability of the scale to predict a criterion measure (criterion validity) was also assessed.

In this study, the ability of ASQ scales to predict the measures of visit patron; recommend airport to others; and paying airport tax higher were used to determine the criterion validity. This apparently will also reveal the second objective of this study. The correlation matrix (table 3) indicates the ASQ measure has a correlation with purchase intention.

In the stepwise regression results (table 4) provide supports that ASQshows construct validity. ASQ measures explain variation in the dependent variable: giving recommendation to others and paying higher airport tax. It is shown by the adjusted R2, they are 77% and 72%, consecutively. Therefore, the evidence shows the measures demonstrate construct validity.

Table 4: The variation explained by the alternative measures of Service Quality

	Come Earlier one hour before flight	Come earlier 2 hours before flight	Come earlier 3 hours before flight	Recommend airport to others	Paying airport tax higher
V1					
V2					0.33***
V3					
V4			0.48***	0.34**	
V5					
V6					
V7					
V8					
V9	0.25 *				
V10					
V11					
V12					
V13			0.20 *	0.25 *	
V14					
V15					
V16			-0.62***		-0.31*
V17					
V18					
V19	0.30 *				
V20			0.31*		
V21					
V22					
V23					0.41 **
V24		0.26*			
V25					
V26					0.42***
V27					
V28	0.32***	0.43***			
V29	0.33***				
V30					

V31									
V32				0.29 *					
V33						0.41***			
Adj R Sq	**0.82**		**0.74**		**0.74**		**0.77**		**0.72**
Where	*	: p	<0.05	**	:p	<0.01	***	:p	<0.001
F significant at	0.001								

3.4 Analysis of Service Quality and Purchase Intention Correlation

The fundamental objective of this study was to relate service quality to repeat purchase intention. This is apparently the objective number three. Since there were number of constraints in relating between them it was considered necessary to breakdown analysis based upon its component. This means that analyzing the relationship between service quality; and the three measures of visit patronage; recommend the airport to others; and possibility paying higher airport tax (measured by Juster's Scale) were conducted.

3.5 Preliminary Data Analysis

As precursor to more in-depth data analysis, the means and standards deviation of the 33 items were examined.

The various scores were resulted as reflections of the quality of service perceived by passengers were assessed. However, the legitimacy of using means on ordinal data may not be precise since the intervals between points on the Likert's scale have no meaning. Furthermore, the calculation of means from derived scores need further analysis.

All of the 33 items, the highest mean was for v3 (VfM of parking facilities) with 5.08 indicating a high performance level. The lowest mean was 3.83 for v17 (Ease of making connections with other flights).

An inspection of the standard deviation for the items revealing greatest variation (2.51) was for v21 (Availability of bank/ATM facilities/money changers). The lowest standard deviation was for v15 (Flight information screens) with 2.07.

Table 5: Variable Means dan StandardDeviations

	AVERAGE	STDEV
v1	4.95	2.23
v2	4.68	2.36
v3	5.08	2.17
v4	4.71	2.22
v5	4.60	2.29
v6	4.55	2.29
v7	4.50	2.38
v8	4.56	2.31
v9	4.50	2.41
v10	4.69	2.35
v11	4.73	2.30
v12	4.77	2.35
v13	4.13	2.36
v14	4.18	2.39
v15	5.06	2.07
v16	4.39	2.37
v17	4.10	2.41
v18	3.83	2.36
v19	4.86	2.25

v20	4.36	2.39
v21	3.95	2.51
v22	4.53	2.26
v23	4.31	2.33
v24	4.74	2.25
v25	4.36	2.34
v26	4.89	2.23
v27	4.89	2.25
v28	4.39	2.35
v29	4.48	2.30
v30	4.63	2.39
v31	4.62	2.45
v32	4.51	2.38
v33	4.59	2.28
Total average	**4.55**	**2.32**

The means and the standard deviations of the measures of repeat purchase intention were then also calculated (table 6). The repurchase probability means, as expected, decreased as the time period increased. It was shown as passengers came to airport one hour before flight had the highest mean (5.89). Most respondents come to the airport three hours before flight had the highest standard deviation (3.02). While the possibility of giving recommendation to others about the airport had a mean 4.67 with relatively small standard deviation of 2.64. The possibility of paying higher airport tax had a mean 3.97 with standard deviation of 2.71.

These standard deviations were divided by number of points on the scale yield a unit free of measure of variation. The repeat purchase intention measures with unit free variation of 0.22, 0.27 and 0.27 for one, two and three hours respectively. Coming to airport one hour before the flight exhibited lower variation than others. This suggests that the measure present a better predictive ability than others but need a little more demanding of test than giving recommendation to others and the possibility of paying higher airport tax measures with unit free variation of 0.24.

Table 6: Dependent variable Means and Standard Deviations

	AVERAGE	**STDEV**	
Come Earlier one hour before flight	5.89	2.40	(0.22)
Come Earlier two hours before flight	5.25	2.92	(0.27)
Come Earlier three hours before flight	4.43	3.02	(0.27)
Recommend airport to others	4.67	2.64	(0.24)
Paying airport tax higher	3.97	2.71	(0.25)

3.6 The Relationship of Measurement and Purchase Intention Components

The correlation matrix (table 4) indicates a positive relationship between the ASQ with all measures (repeat purchase intention measures component). The measures are highly correlated for ASQ. It is indicated by Adj R2 in table 4. The correlation between ASQ and the repeat purchase measures ranges from 0.72 (Paying airport tax higher) to 0.82 (Come Earlier one hour before flight).

The reason for ASQ having strong predictive ability is uncertain. However, it is suspected that coming 3 hours prediction of visit airport may be as accurate as that 1 and 2 hours. Nonetheless, the 2 and 3 hours visiting airport before boarding measures present a more demanding test of each instrument ability to predict changes purchase intentions due to the slightly greater standard deviation (table 6).

3.7 Dominant Items for Regression Equation

Stepwise regression was undertaken to assess the ability of theASQ scales to explain the variation in repeat purchase intentions. The results of this analysis are shown in table 4.

An initial inspection of the items retained by the stepwise program reveals that no item appears in all equations (table 4).

The adjusted R2 value indicates that 47% to 82% of variation in repeat purchase intentions can be explained by service quality factors. The adjusted R2 figures show firm results for the ability ofASQ measures to predict repeat purchase.

A breakdown of the significance of the items retained in the regression equations reveals that eightitems were significant at 0.001. Additionally, ASQ retains twenty items to explain an average of 76% of the variation in repeat purchase (an average of 4% per retained variable).

However, adjusted R2 value, it can be drawn a tentative conclusion that, the results tentatively demonstrate ASQ to be reliable measure of repeat purchase intentions

3.7 Multi-Collinearity

A major problem that exist when using regression is multi-collinearity. This is when the predictor variables (in this case, the 33 items) correlate with one another. Green, Tull and Albaum (1988) suggest that principal component analysis as a method of reducing the amount of multi-collinearity in the original data set. In this case, principal component were drawn from data set relevant to each instrument. Four principal components were extracted from the ASQ data with each set of components having eigen-value of31% (i.e. the percentage of variance explained by the retained principal components). These principal components were then regressed against the same measure as in table 4.

Table 7: Variation Explained by the Principal Components of the AlternativeMeasures of Service Quality

	Come Earlier one hour before flight	Come Earlier two hour before flight	Come Earlier three hour before flight	Recommend airport to others	Paying airport tax higher
PC1	1.015*	1.111*	1.105*	0.922*	0.750*
PC2	0.055	-0.036	0.071	0.154	*0.322
PC3	0.236*	0.150	-0.047	0.025	-0.048
PC4	-0.116	-0.143	-0.208	-0.120	-0.194
Adj R Sq	**0.807**	**0.727**	**0.687**	**0.753**	**0.685**
Eigenvalue					
Variance	30.89%				

***:** sign at 5%
F ratio for all regression sign at 0.001

The results (table 7) show that the same trends exist after adjustment for multicolinearity.

In addition, Thirteen of the ASQ principal components are significant at 0.0001. However, the 20 ASQ principal components explain an average of 3.45% of the variation in repeat purchase. This explains the results in table 4 and indicate that multicolinearity is considered prominent in the ASQ variables.

3. 8 Correlation between Airport Service Quality and Profitability

The final analsys of this study was to relate the ASQ to profitability. From the Table 8, it was found that despite there being a positive correlation between ASQ and Purchase Intention, the relationship is moderately low. The correlation is only 0.11. This means that the model that was proposed in this study was proven although it is not very strong. The findings suggest that ASQ explains only 11 percent of the variance in passengers' rating of purchase intention. The analysis indicates that the large un-explained variance of almost 90 percent means that the factors influencing service quality-profitability are not yet completely answered. This is not very surprising because some other factors may be considered more important for service quality-profitability proposition, such as: value; attribution and equity; information availability and atmosphere; and some others

Table 8: Correlation Analysis

	Purchase Intention
Airport Service Quality	0.109
	(0.25)

**Correlation is significant at the 0.01 level

It can be said that, firstly, the respondents who took part in this study may think that ASQ is not an important issue. In the airport operation and management, flight frequencies and flight connection or punctuality of flights may be more important.

Secondly, most of respondents may be domiciled in other cities of airport being studied. People generally are very hard to develop purchase intention as they feel unattached to the airport. As suggested by Berman and Evans (2001) that loyalty may exist when they stay around the store.
Another possibility is, the respondents come to airports because the have bought the airline tickets. This situation, respondents do not really give attention to the airport, instead more to the airlines. This situation describes that airport service has only low involvement products. They are treated or bought with very little information. This may cause the perception of airport service quality to be ignored by respondents.

4. Discussion

The overall objective of the study was to identify and ascertain the relationship between airport service quality, its measurement as well as its direction to profitability. This study has actually looked at a number of issues in airport service quality and purchase intention.

The results suggest that the eight dimensions of ASQ proposed by ACI and five key dimensions of service quality proposed by PZB (1985) cannot be used to determine airport service quality in this study. This result is not consistent with the ASQ and research of PZB (1985). Additionally, this suggests that airport service quality dimensions in one airport may be different in other airports. Despite of the dimensions of service quality as proposed ACI do not exist in this study, this can be used as a guideline to develop service quality items that are considered most important to airport users and to understand of the levels of their expectations.

The results of the study also clearly indicates that ASQis capable for service quality measurement in airports.

The last but not the least, there was somewhat moderately correlation between Service Quality and Purchase Intention. The results of the study may reveal that purchase intentions were very much influenced by other factors

such as aircraft schedules. This was taken due to the facts of this study that there was low correlation between Service Quality and Purchase Intentions.

This study has addressed the issues that are important in the management of services in the airport industry, especially in Indonesia. The research was based on the perceptions of passengers of some airports in Indonesia. The failure of service quality to significantly affect purchase intentions in this study should be concerns for further study. Perhaps passengers do not always want the best quality service of an airport. This result suggests that additional efforts appear not very well justified. Much is still to be discovered relative to the process of forming of passengers' perception. The findings may raise further question, however, this has addressed the most important concerns of service quality and purchase intention in the airport industry.

Apart from that, this study has obvious limitations. It focuses on the evaluation of service quality and assumes that both the service providers and passengers agreed on service attributes being studied. Moreover, the constructs and the measures proposed here require further testing before making any conclusive statements about the construct.

References

Aaker, A.D., Kumar, V., and Day, S.D. (2000). *Marketing Research(5th Ed.)*. Canada: John Wiley and Sons

Anderson, E., C. Fornell& D. Lehmann (1994), Customer Satisfaction, Market Share, and Profitability: Findings from Sweden, Journal of Marketing, 58 (July), pp. 53-66.

Babakus, E and Boller, G.W (1992).An empirical assessment oh the SERVQUAL scale. *Journal of Business research*, 24 (3), 253-268.

Banwet, D.K. and Datta, B. (2002), "Effect of service quality on post-visit intentions over time: the case of a library", Total Quality Management, Vol. 13 No. 4, pp. 537-46.

Bazerra, G.C.L and Gomes, C.F (2016). Measuring airport service quality: A multidimensional approach. Journal of Air Transport Management. Volume 53.

Bergman, B. and Klefsjo, B. (1994), Quality: from Customer Needs to Customer Satisfaction, McGraw-Hill, New York, NY, p. 16.

Brady, Michael K., J. Joseph Cronin and Richard R. Brand (2002), "Performance-only Measurement of Service Quality: A Replication and Extension," Journal of Business Research, 55, 17-31.

Brennan, M. (1995) `Constructing Demand Curves from Purchase Probability Data: An Application of the Juster Scale', Marketing Bulletin, Vol. 6, pp. 51-58.

Brennan, M. and Esslemont, D. (1994) 'The accuracy of the juster scale for predicting purchase rates of branded, fast-moving consumer goods', Marketing Bulletin, Vol. 5, pp. 47-53.

Brennan, M., Seymour, P. and Gendall, P. (1993), "The effectiveness of monetary incentives in mail surveys: further data", Marketing Bulletin, Vol. 4, pp. 43-51.

Brink, M. and Maddison, D. (1975), "Identification and measurement of capacity and levels of service of landside elements of the airport", Transportation Research Board, special report 159, pp. 92-111.

Brown, T.J., Churchill, G.A., Jr., and Peter, J.P. (1993). Research note: improving the measurement of service quality. Journal of Retailing, 9 (Spring), 127-139.

Buttle, F. (1996). *SERVQUAL: Review, critique, research agenda.*London: ManchesterBusinessSchool.

Carman, J.M. (1990), "Consumer perceptions of service quality: an assessment of the SERVQUAL dimensions", Journal of Retailing, Vol. 66 No. 1, Spring, pp. 33-55.

Churchill, G.A. Jr, "*A Paradigm for Developing Better Measures of Marketing Constructs*", Journal of Marketing Research, 16, February, 1979, 64-73.

Cronin, J. Joseph and Steven A. Taylor (1994). SERVPERF versus SERVQUAL: reconciling performance-based and perceptions-minus-expectations measurement of service quality. Journal of Marketing, 58 (January), 125-131.

Cronin, J. Joseph and Steven A. Taylor. 1992. "Measuring Service Quality: A Re-Examination and Extension." Journal of Marketing 56 (July): 55-68. Further evidence on the predictive accuracy of the verbal probability scale: The case of household bill payments in Australia. *Journal of Financial Services Marketing*. London: Vol.6, Iss. 3; pg. 28

Dawna L. Rhoades, Blaise Waguespack Jr, and*Seth Young*(2000). Developing a quality index for US airports.*Managing Service Quality*. Bedford:.Vol.10, Iss. 4; pg. 257

Day, D, Gan, B.C., Gendall, P.J., and Esslemont, D. (1991). Predicting purchase behaviour. *Marketing Bulletin*, 2, 18-30.

Douganis, R. (1992). *The airport business*. London and New York: Routledge

Feldman, D. and Shields, M. (1998), "Effective marketing: a key to airport success", in Bulter, G. and Keller, M.R. (Eds), Handbook of Airline Marketing, McGrwaw-Hill, New York, NY, pp. 657-6

Gendall, Philip, Esslemont, Donald, and Day, Dianne(1991). A Comparison of Two Versions of the Juster Scale Using Self-Completion Questionnaires. Market Research Society. Journal of the Market Research Society. London: Jul 1991.Vol.33, Iss. 3; pg. 257

Gronroos, C. (1984), "A service quality model and its implications", European Journal of Marketing, Vol. 8, pp. 36-44.

Johnston, R. (1995), Service failure and recovery: impact, attributes and process, Advances in Services Management and Marketing, 4,211-228.

Juster, F.T. (1966) `Consumer Buying Intentions and Purchase Probability: An Experiment in Survey Design', National Bureau of Economic Research, ColumbiaUniversity Press

Lemer, A.C. (1992), "Measuring performance of airport passenger terminals", Transportation Research, Vol. 26A No. 1, pp. 37-45.

Milakovich, E.M.(1995). *Improving Service Quality.* St. Lucie Press, USA.

Oliver, R.L. (1993), "A conceptual model of service quality and service satisfaction: compatible goals, different concepts", in Swartz, T.A., Bowen, D.A. and Brown, S.W. (Eds), Advances in Service Marketing and Management, Vol. 2, JAI Press, pp. 65-85.

Page, S.J. (1996). *Transport and Tourism.*New York: Longman

Parasuraman, A, Leonard L. Berry, and Valarie A. Zeithaml. 1994. "Moving Forward in Service Quality Research: Measuring Different Levels of Customer Expectations, Comparing Alternative Scales, and Examining the Performance-- Behavioral Intentions Link." MSI Working Paper No. 94-114 (September). Marketing Science Institute, Cambridge, MA.

Parasuraman, A, Leonard L. Berry, and Valarie A. Zeithaml. 1991. "Refinement and Reassessment of the SERVQUAL Scale." Journal of Retailing 67 (Winter): 420-450.

Parasuraman, A., Valarie A. Zeithaml, and Leonard L. Berry. 1985. "A Conceptual Model of Service Quality and Its Implications for Future Research." Journal of Marketing 49 (Fall): 41-50.

Parasuraman, A., Valarie A. Zeithaml, and Leonard L. Berry. 1988. "SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality." Journal of Retailing 64 (Spring): 12-40.

Reichheld, Frederick. W. Earl Sasser, Jr. 1990. "Zero Defections: Quality Comes to Services." Harvard Business Review 68 (September-October): 105Ill.

Rust, and Anthony I Zahorik. 1993. "Customer Satisfaction, Customer Retention, and Market Share." Journal of Retailing 69 (Summer): 193-215.

Scott, D. and Shieff, D. (1993), "Service quality components and group criteria in local government", International Journal of Service Industry Management, Vol. 4 No. 2, pp. 18-25

Seneviratne, P. and Martel, N. (1994), "Criteria for evaluating quality of service in air terminals", Transportation Research Record, No. 1461, pp. 24-30

Seymour, P., Brennan, M. and Esslemont, D. (1994) `Predicting Purchase Quantities: Further Investigation of the Juster Scale', Marketing Bulletin, Vol. 5, pp. 2136.

Spreng, Richard A. and Richard W. Olshavsky (1993), "A desires congruency model of consumer satisfaction," Academy of Marketing Science Journal, 21 (3), 169-177.

Teas, R. Kenneth. 1993. "Expectations, performance, evaluation, and consumers expectations of quality," Journal of Marketing. (October): 1834.

Tretheway, M.W. (1998), "Airport marketing: an oxymoron?", in Bulter, G. and Keller, M.R. (Eds), Handbook of Airline Marketing, McGraw-Hill New York, NY, pp. 649-56.

Wells, A.T. (1996). *Airport Planning and Management*. Mc. Graw-Hill, New York.

Wyckoff, D.D. (1984), "New tools for achieving service quality", The Cornell HRA Quarterly, pp. 78-91.

Zahorik, Anthony J. and Roland T Rust. 1992. "Modeling the Impact of Service Quality on Profitability: A Review, " In Advances in Service Quality and Management, Vol. 1. Ed. Terry Schwartz. Greenwich, CT: JAI, 247-276.

Zeithaml, V.A. (2000), "Service quality, profitability, and the economic worth of customers: what we know and what we need to learn", Journal of the Academy of Marketing Science, Vol. 28 No. 1, pp. 67-85.

Zeithaml, Valarie A., Roland T. Rust, and Kay Lemon. 1999. "Make Customer Profitability the Basis for Service." Working Paper. University of North Carolina at Chapel Hill.

Zikmund, W. G. 2000. Business Research Methods, Fort Worth: The Dryden Press.https://aci.aero/Customer-Experience-ASQ

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 189-195
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.355

Examining the Effects of Food and Product Production Values and Production Added Value on Inflation Over the Years: Empirical Evidence for Turkey

Isil Tellalbasi Menguc[1]

[1] PhD. Bolu Abant İzzet Baysal University. https://orcid.org/0000-0002-4357-9935
Email:isiltel@gmail.com

Abstract
In this study, it is aimed to examine the effects of food and product production values on inflation. In the study, the variables of the World Bank Country Reports between 1991-2019 Consumer Price Index, Wholesale Price Index, Food Production Index, Product Production Index and Production Value Added were used. According to the results obtained from the study, there is a statistically significant relationship between TUFE and TOFE and GUE, UUE and UKD variables ($p < 0.01$). According to the results of controlled correlation analysis, the effects of food and product production indexes on consumer and wholesale inflation level are not statistically significant ($p > 0.05$). The effect of UKD and GUE parameters on inflation is statistically significant ($p < 0.05$). Explanation power of both models is very high. According to the regression coefficients, UKD has a negative effect, and GUE has a positive effect. The results show that production has a positive effect on inflation, while production value added has a decreasing effect on consumer and wholesale prices. These results show that the production in our country is actually high cost and its added value is low.

Keywords: Inflation, Food, Product, Production

1. Introduction

Although the concept of inflation has a long history among the economists, the controversies about its first outlet or source still continue. While the Spanish scholastic Juan de Mariana who writes up to the ends of the 16th century, draw the mainlines of the compelling nature of inflation, the monetary writings of David Hume on the 18th century evaluated the unit changes in the monetary stock as the valuation changes affecting the unit value of the monetary assets of the other individuals (Arteta et al., 2018; Bagus et al., 2014; Blanchard et al., 2010; Garcia and Werner, 2010).

The global economy has witnessed a considerable decrease in inflation since 1970's. Inflation decreased throughout the world as the median annual national consumer prices inflation decreased by approximately 1.7 percent which is the lowest level of about half century in 2015 from about 17 percent summit which was

experienced in 1974. Among the developed economies, the median inflation similarly reduced to the lowest level as 0.3 percent from the highest 15 percent level in the same period (Ha et al., 2019).

While there is a requirement for everybody to meet their own needs in daily life, the prices of these needs change very day with the influence of the pricing mechanisms of the market as well. Sometimes their prices decrease or it could be considered whenever the purchasing power of the money increases or sometimes whenever the quantity of the things which are purchased with the same amount of money decreases. The prices should be compared with each other in order to see the growth of the economy in every period, day, week, month or year in economy and its growth remains dependent on inflation, risks, production, investments, interests or similar other reasons (Durmuş, 2019; Mumtaz and Surico, 2012; Ciccarelli and Mojon, 2010; Ihrig et al., 2010; Calvo and Reinhart, 2002; Aghion et al., 1999).

The decrease in the inflation has been broad-based among the country groups recently and it is clearly seen in the multiple inflation measurements including the headline and core consumer prices, energy and food prices, producer prices and gross domestic product (GDP) deflator (Ha et al., 2019). Although the influence of lots of macroeconomic indicators is examined relating to inflation from past to today, we did not encounter the sufficient number of studies which are mainly focused on the correlation between the food and product prices and production values. Because of this reason, in this study, it is aimed to examine the effects of the food and product production values on inflation.

2. Conceptual Framework

According to the inflation theory, the individuals with lower incomes typically bear greater inflation burdens than their colleagues with higher incomes. Because of the fact that the rich individuals are inclined to have not only knowledge but also resources, they are generally in better positions to avoid taxes. They may invest a greater part of their incomes in the assets with higher profits. Thus, they may protect their saving capabilities against a general decrease of their purchasing powers. On the other hand, the individuals with lower incomes may follow similar strategies to the extent of existence of the index funds or inflation-indexed bonds. However, because they could use smaller part of their incomes for the investment purposes, they would balance a larger part of their incomes which are negatively affected by inflation on the prices of the commodities which they purchase. While there are some financial products which are utilized in order to minimize the effects of the inflation on the investments of the individuals, it is quite difficult to implement a similar strategy in order to protect someone from the increasing prices of the consumables (Bagus et al., 2014).

Inflation could be defined as a kind of commodity and service pricing mechanism. However, we should underline here that this is not the only factor of the price and that of the purchasing power. It depends on the interests, rates, production capacity and capability, population and politics. Most of the time, on account of the shocks which occur in economy, the effects on the interests, investments and production and the quantity of the money and services existing in the market decrease and this causes the prices to go high. This increase means the raw material purchasing problems, needs of the people, less production and less employment. Under such unbalanced quotations, the investors, producers, banks and the people are afraid from spending their habits and, in turn, this influences the prices. Not only the changing prices may result from inflation but also it could create the inflation itself (Durmuş, 2019).

High inflation is usually correlated with the low growth and financial crisis. The increasing price levels are also dependent on the weaker investor confidence, underlining the incentives for savings and the abrasion in the balance sheets of the financial and public sectors. Moreover, the poor people may suffer from the higher inflation in a disproportional manner because poorer households are dependent on the wage proceeds more, they have less access to the interest-yielding accounts and there is a lower probability to have financial or real assets in important amounts other than cash. Because of these reasons, the low and stable inflation is correlated with the better growth and developmental results, financial stability and decreased poverty (Ha et al., 2019).

3. Method

The variables and the World Bank codes which are used in the study are given in the Table 1.

Table 1: The variables and the World Bank codes which are used in the study

Code	Description	World Bank Code
TUFE	Consumer Price Index	Consumer price index (2010 = 100)
TOFE	Wholesale Price Index	Wholesale price index (2010 = 100)
GUE	Food Production Index	Food production index (2004-2006 = 100)
UUE	Product Production Index	Crop production index (2004-2006 = 100)
UKD	Production Added Value	Manufacturing, value added (% of GDP)

The World Bank provided the TOFE data for the years 1991-2013, GUE and UUE data for the years 1991-2018 and TUFE and UKD data for the years 1991-2019. Consequently, the data range of the study is specified as between the years 1991-2019.

In the study, the measurement data are defined as the average, standard deviation, minimum and maximum values. The compatibility of the measurement data to the normality distribution is analyzed by the Kolmogorov Smirnov Test. The Pearson's Moments correlation analysis is performed for the correlation between the data conforming to the normal distribution. In addition to this, the year controlled partial correlation analysis is also performed. Before the econometric analysis, it is analyzed whether the variables contain unit root or not by means of the Augmented Dickey-Fuller unit root test (ADF). Because all of the variables are proportional and since the deflator transformation is already performed, they do not contain any unit root. The linear regression analysis has been used in the correlational scanning between the research data. All of the analyses have been realized in 95% confidence interval and 0.05 relevance level, in Eviews 7.0 for Windows and SPSS 17.0 for Windows programs

4. Findings

Identifying information of the variables which are used in the study are given in the Table-2.

Table 2: Identifying information of the variables which are used in the study (1991-2019)

	Minimum	Maximum	Average	Standard Deviation
TUFE	0,12	234,44	73,81	67,14
TOFE	0,14	123,13	48,21	44,12
GUE	62,21	107,25	79,21	14,57
UUE	70,01	108,66	86,13	11,82
UKD	15,05	22,57	18,36	2,39

In the period between the years 1991-2019, the TUFE variable is between 0.12 – 234.44, the TOFE variable is between 0.14 – 123.13, the GUE variable is between 62.21 – 107.25, the UUE variable is between 70.1 – 108.66 and the UKD variable is between 15.05 – 22.57.

The results of the Pearson's correlation and the partially controlled correlation analysis which are carried out for the correlation between the TUFE and TOFE and the research parameters are given in the Table 3.

Table 3: The results of the Pearson's correlation and the partially controlled correlation analysis which are carried out for the correlation between the TUFE and TOFE and the research parameters

	Pearson's Correlation		**Year Controlled Partial Correlation**	
	r	**p**	**r**	**P**
TUFE				
GUE	0.972**	0.000	0.332	0.132
UUE	0.960**	0.000	0.059	0.793
UKD	-0.617**	0.000	-0.205	0.360
TOFE				
GUE	0.941**	0.000	0.271	0.222
UUE	0.933**	0.000	0.039	0.864
UKD	-0.912**	0.000	-0.196	0.382

According to the results of the correlation analysis, there is a statistically significant correlation between the variables of not only TUFE but also TOFE and GUE, UUE and UKD ($p<0.01$). The correlation direction is positive for GUE and UUE and negative for UKD. However, according to the controlled correlation analysis results, the effects of the food and product production indexes on the consumer and wholesale inflation level are not statistically significant ($p>0.05$).

The Augmented Dickey Fuller (ADF) unit root test results for the research variables are given in the Table-4.

Table 4: The Augmented Dickey Fuller (ADF) unit root test results for the research variables

	t value	**%1 KD**	**%5 KD**	**%10 KD**	**p**
TUFE	2.001760	-3.711457	-2.981038	-2.629906	0.9997
TOFE	0.170849	-3.788030	-3.012363	-2.646119	0.9636
GUE	1.678444	-3.711457	-2.981038	-2.629906	0.9993
UUE	1.821768	-3.788030	-3.012363	-2.646119	0.9994
UKD	-1.669824	-3.689194	-2.971853	-2.625121	0.4350

No unit root is found in all of the variables which are used in the study and, because of this reason, no advanced unit root tests are carried out ($p<0.05$). In addition, the autocorrelation results as performed in the study indicated that the study data are in compliance with the regression analysis. According to this, the following model has been established for TUFE.

$$\mathbf{TUFE = \beta_0 + \beta_1 \, x \, (GUE) + \beta_2 \, x \, (UUE) + \beta_1 \, x \, (UKD)}$$

Table 5: The results of the regression analysis for the TUFE model

Variable	**Beta**	**Std. Error**	**t-Statistic**	**p**
UKD	-3.829011	1.586484	-2.413519	0.0238
GUE	4.481884	1.034177	4.333770	0.0002
UUE	-1.047372	1.371749	-0.763530	0.4526
C	-126.3974	65.98056	-1.915676	0.0674

R-squared	0.956593	Mean dependent exists	68.07747
Adjusted R-squared	0.951168	S.D. dependent exists	60.70343
S.E. of regression	13.41427	Akaike info criterion	8.162079
Sum squared resid	4318.624	Schwarz criterion	8.352394
Log likelihood	-110.2691	Hannan-Quinn criter.	8.220260
F-statistic	176.3040	Durbin-Watson stat	0.941068
Prob(F-statistic)	0.000000		

According to the regression model results, the effect of the UKD and GUE parameters on the inflation is statistically significant ($p<0.05$). The explanatory power of the model has a considerably higher value (R2: 0.956593). According to the regression coefficients, the UKD has negative effect and the GUE has positive effect. The GUE has a greater effect as a coefficient.

The following model has been established for TOFE.

$$\mathbf{TOFE= \beta_0 + \beta_1 x (GUE) + \beta_2 x (UUE) + \beta_1 x (UKD)}$$

Table 6: Regression analysis results for the TOFE model

Variable	Beta	Std. Error	t-Statistic	p
UKD	-8.673161	1.366118	-6.348764	0.0000
UUE	-2.047019	1.138670	-1.797729	0.0881
GUE	4.094102	0.929639	4.403968	0.0003
C	74.67508	59.05911	1.264413	0.2214
R-squared	0.964582	Mean dependent ex.		48.21492
Adjusted R-squared	0.958989	S.D. dependent ex.		44.12317
S.E. of regression	8.935415	Akaike info criterion		7.374693
Sum squared resid	1516.991	Schwarz criterion		7.572170
Log likelihood	-80.80897	Hannan-Quinn criter.		7.424358
F-statistic	172.4823	Durbin-Watson stat		1.112645
Prob(F-statistic)	0.000000			

Similar to the TUFE model results, the effect of the UKD and GUE parameters on inflation is statistically significant ($p<0.05$). The explanatory power of the model has a considerably higher value (R2: 0.964582). According to the regression coefficients, the UKD has negative effect and the GUE has positive effect. The GUE has a greater effect as a coefficient.

5. Discussion

In this study carried out, it is aimed to examine the effects of the food and product production values and the production indexes on the inflation. In this framework, in the study, the analysis is performed on the production and inflation indicators of Turkey between the years 1991 to 2019 and then the correlation between the production and inflation is revealed.

In general, the studies which are carried out in the literature concluded not only the inflation is dependent on the increase of the demand in comparison with the supply but also the excessive production shall decrease the demand and the excessive supply shall cause the inflation to decrease. Setting out from this point, actually the production is expected to have an effect of decreasing and reducing the inflation. With a simple financial approach, as the amount of a specific product or service is abundant in a market, its price shall decrease proportionally and consequently the inflation or the price increase shall be more limited as well. (Alex, 2021; Brito and Bystedt, 2010; Kremer et al., 2009; Ahmad and Mortaza, 2005; Anoruo, 2003; Bruno and Easterly, 1998; Abizadeh et al., 1996; Barro, 1996; Dornbusch and Fischer, 1993).

According to the values obtained in the study, the inflation in the wholesale and consumer prices is in a changing but generally in an increasing trend within the years. Similarly, the product and food production has been in an increase. However, whenever it is compared with the production indexes, the increase in the inflation indexes is higher and more variable. As a matter of fact, although the increase in the production is expected to show an effect of reducing the prices and consequently decreasing the inflation, on the other hand, the cost, unit price and

benefit analyses of the products produced change this situation. In other words, they should be produced within a certain plan and consciously to have an effect on the inflation, but not merely the production of the products or services. At this point, the production planning is commissioned. In this framework concerning the years in which the study is carried out, it could be expressed that the production planning is not performed at the sufficient level.

In the correlation analysis in which the close correlations are shown, the product and food productions are increasing the inflation. While it has many reasons, in general, it could be expressed that the higher service input in the production process of the products or foods produced is higher. On the other hand, whenever the production added value is calculated, the expected correlation is seen and as the production added value increases, the inflation decreases. However, at this point, these effects lose their significance in the year controlled correlation analysis of the variables. This situation further puts forward the rather capital-intensive market of our country as well.

Whenever the regression analysis and the variables are evaluated together with regard to their effects, the effects of the production added value and food productions on inflation are statistically significant. In both models (for the consumer and wholesale prices) the production has decreasing effect for the inflation and the food production values have increasing effect on the inflation. Consequently, it could be expressed that the production costs are above the sustainable level.

6. Conclusion

According to the results which are obtained in this study, it is seen that the production has positive, namely increasing, and the production added value has decreasing effect on the inflation over the consumer and wholesale prices. These results indicate that the production in our country is actually high-cost and its added value is also lower. Indeed, from the agricultural production to the food production, the expenditures such as transportation, energy and taxes etc. among the fundamental inputs have been recently higher than the fundamental production raw material expenditures of the product. Because of this reason, it could be expressed that there are some important missing points in the production planning. In order to eliminate such deficiencies, it is necessary to produce the products with the unit prices having higher added values, to plan the production processes of these productions and to perform the market or trade researches accordingly.

In this regard, it is useful to perform the crosswise studies in which the variables and contributing factors are extended for the advanced researches. With regard to the area application, the study findings point out that it would be beneficial to perform the production master plans and, if any, to specify the missing points of the existing plans and to support the national plans rather than local plans accordingly.

References

Abizadeh, S, Benarroch M and Yousefi M. (1996). “A Multilevel Government Model of Deficits and Inflation,” Atlantic Economic Journal, Vol. 24, No. 2, June, pp. 118-130.

Aghion, P., E. Caroli and C. Garcia-Penalosa (1999), “Inequality and economic growth: The perspective of the new growth theories,” Journal of Economic Literature 37: 1615–1660.

Ahmed, S. ve Mortaza, M. G. (2005). ‘Inflation and growth in Bangladesh: 1981-2005.’ Bangladesh Bank Policy Analysis Unit. Working Paper Series, 0604.

Alex D. (2021). Anchoring of inflation expectations in large emerging economies. The Journal of Economic Asymmetries, 23(1), e00202.

Anoruo, E C. (2003). “An Empirical Investigation into the Budget Deficits-inflation Nexus in South Africa,” The South African Journal of Economics, 71(2), 282-296

Arteta, C., M. A. Kose, M. Stocker, and T. Taskin. (2018). “Implications of Negative Interest Rate Policies: An Early Assessment.” Pacific Economic Review 23 (1): 8-26.

Bagus, P, Howden, D. and Amadeus G. (2014). Causes and Consequences of Inflation. Business and Society Review. 119. 10.1111/basr.12043.

Barro, R J. (1996), “Inflation and Growth,” Federal Reserve Bank of St. Louis Review, 78(3), 153- 169.

Blanchard, O. J., G. Dell'Ariccia, and P. Mauro. (2010). "Rethinking Macroeconomic Policy." Journal of Money, Credit, and Banking 42 (s1): 199-215.
Brito, R. and Bystedt, B. (2010). 'Inflation targeting and emerging economies: panel evidence.' Journal of Development Economics, 91: 198-210.
Bruno, M. and Easterly, W. (1998). 'Inflation crises and long-run growth'. Journal of Monetary Economics, 41: 3–26.
Calvo, G., and C. Reinhart. (2002). "Fear of Floating." Quarterly Journal of Economics 107 (2): 379-408.
Ciccarelli, M., and B. Mojon. (2010). "Global Inflation." Review of Economics and Statistics 92 (3): 524-35.
Dornbusch, R. and Fischer, S. (1993). 'Moderate inflation.' World Bank Economic Review, 7: 1- 44.
Durmuş, A. (2019). High Inflation Risk and Growth Rate. International Journal of Social Science Research, 8 (1), 20-28.
García, J. A. and Werner, T. (2010). Inflation risks and inflation risk premia, European Central Bank, Working Paper, No. 1162.
Ha J, Kose MA, Ohnsorge FL. (2019). Understanding Inflation in Emerging and Developing Economies. Macroeconomics, Trade and Investment Global Practice, Policy Research Working Paper 8761.
Ihrig, J., S. B. Kamin, D. Lindner, and J. Marquez. (2010). "Some Simple Tests of the Globalization and Inflation Hypothesis." International Finance 13 (3): 343-75.
Kremer, S., Bick, A. and Nautz, D. (2009). 'Inflation and Growth: New Evidence from a Dynamic Panel Threshold Analysis.' Economic Risk, SFB 649, Discussion Paper 036.
Mumtaz, H., and P. Surico. 2012. "Evolving International Inflation Dynamics: World and Country-Specific Factors." Journal of the European Economic Association 10 (4): 716-34.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 196-208
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.356

Effect of Entrepreneurial Marketing Dimensions on Small and Medium Enterprises Performance in Nasarawa State

Hindu Jibril Amin[1]

[1] Department of Marketing, Faculty of Management and Social Sciences, Baze University, Abuja, Nigeria

Correspondence: Hindu Jibril Amin, Department of Marketing, Faculty of Management and Social Sciences, Baze University, Abuja, Nigeria Tel: +2348036006609 / E-mail: hindu.amin@bazeuniversity.edu.ng

Abstract
Entrepreneurial Marketing (EM) Dimensions play a critical role in small and medium enterprises (SMEs) performance. The extant study explored the effect of EM dimensions on the performance of SMEs operating within Nasarawa State, Nigeria. EM was conceptualized as innovativeness, risk-taking, and value creation. The research population was 1979 registered SMEs in Nasarawa state, Nigeria. The sample size was 322 which was determined using Raosoft sample size calculator. Out of 322 sets of questionnaire distributed, 136 were validly filled and returned. The data collected were analyzed using Regression Analysis technique to test the study's hypotheses using Statistical Product and Service Solutions software. Results specify that all three of the EM dimensions under study have significant effect on SME performance. In terms of contribution to the model, the explanatory variables were able to contribute 62.1 percent to the variable of interest (SME performance). On individual basis, innovativeness explained the most to the criterion variable. The findings of this study offer important insights for owners and managers of SMEs, researchers, and policymakers to further understand the effects of EM dimensions on SMEs' performance. SMEs should be encouraged to embrace the entrepreneurial dimensions of innovativeness, risk taking, and value creation to increase business performance.

Keywords: Entrepreneurial Marketing, Innovativeness, Nasarawa State, Risk-Taking, SME Development, Value Creation

1. Introduction

The concept of entrepreneurial marketing is a blend of two concepts, entrepreneurship and marketing. It forms a fresh direction in the marketing world. Both basic theories are innovatively combined which are associated with marketing and business practices called entrepreneurial marketing (Gilmore & Coviello, 1999; Hoy, 2008). In the aspect of entrepreneurship in marketing theory education, this idea has generated major gaps between large and small business enterprises (Carson, 1993; Stokes, 2000). Schindehutte and Morris (2010) state that the complete convergence of marketing and entrepreneurship is entrepreneurship marketing. Hills and LaForge (1992) note that the marketing and entrepreneurship fields are analogous in that both fields are boundary spanning, include all-encompassing environmental interaction, and require risk and uncertainty assumptions. In addition, both

marketing and entrepreneurship have clients as their focal point (Hisrich, 1992). In their approach to management, both areas are change-oriented, opportunistic in nature and creative in their approach to management (Collinson and Shaw, 2001). According to scholars, the interface between marketing and entrepreneurship can also help entrepreneurs cope with change, find promising opportunities and improve their creative skills (Collinson, 2002). Entrepreneurship marketing growth, as a traditional entrepreneurial marketing conceptualization, is not only a partnership between marketing tools and entrepreneurial processes, but fully covers all aspects of administrative marketing and entrepreneurship. Kilenthong (2012) has shown that a higher degree of entrepreneurial orientation contributes to a higher level of marketing for entrepreneurs.

In the technologically advanced nations such as the United States of America (USA) and Japan, more than 99 percent of all companies are SMEs. SMEs account for 99 percent of all enterprises in the European Union, account for two-thirds of all private sector employment and have generated around 85 percent of new jobs in the past five years (Fatoki 2019). The SME sector's contribution is one of the reasons for low unemployment and high economic growth rates in many developed countries (Ayyagari, Beck & Demirgüç-Kunt, 2007; Pandya, 2012; European Union, 2018).

Nowadays, marketing is no longer perceived as a function in a business, rather as a wider practice that can be stretched to goods as well as other products, such as services, locations, people, ideas, and causes (Kotler, 2011). During the past four decades, marketing as practiced by businesses today has changed dramatically (Kilenthong Hills, & Hultman, 2015). Marketing, once thought to be an act of sales and advertisement, was forced into this new direction by changes in different components (Day and Montgomery, 1999). Significant advances in the academic marketing area have followed this change to the new view of marketing, and marketing behaviours found in these advancements share identical essence with entrepreneurial behaviours. First, advertising has moved from a transactional approach to a relational approach (Gronroos, 1990; Webster, 1992). Also, marketers have accepted the idea of co-creation and enabled their clients by incorporating them into their modern method of product advancement (Prahalad & Ramaswamy, 2004). They give consumers the chance to participate and pick elements of new product offerings, claiming that doing so will increase the possibility of the success of their new products (Hoyer, Chandy, Dorotic, Krafft, & Singh, 2010).

1.1 Dimensions of Entrepreneurial Marketing

Several studies (Hacioglu, Eren, Eren, & Celikkan 2012; Becherer, Helms, & McDonald 2012; Gorica and Buhaljoti, 2016; Eggers, Niemand, Kraus, & Breier 2020) identified the seven-dimension paradigm developed by Morris, Schindehutte, & LaForge (2002), which is based on both entrepreneurial orientation and marketing orientation. The seven dimensions comprise of proactiveness, opportunity-driven, resource leveraging, innovativeness, risk-taking, value creation, and customer intensity. The first five constructs are associated with entrepreneurial orientation, and the last two dimensions are related to marketing orientation.

1.1.1 Proactiveness

Proactiveness is described by the firm's orientation towards looking for new ways to achieve a competitive edge over large-scale competitors by gradual improvements to current manufacturing and marketing practices (Morris et al. 2002). Proactiveness can be defined as the opportunity-seeking and forward-looking perspective when launching new products ahead of market competition, which contributes to shift in the marketing environment (Hacioglu et al., 2012).

1.1.2 Opportunity Driven

Opportunity driven can be described as identification and pursuit of untouched market opportunities irrespective of resources under control (Morris et al., 2002), while the degree-of-fit defines the market opportunities with reference to resources and capabilities of the firm; it is the ability of the firm to choose the "right opportunity" at the "right time," leading to long term success (Becherer et al. 2012). (Becherer et al. 2012).

1.1.3 Customer intensity

Customer intensity is the process of discovering creative methods to customer acquisition, retention, and growth (Morris et al. 2002). It is distinguished by the characteristics of customer equity, intuitive relationships, and emotional dimension to a firm's marketing efforts.

1.1.4 Risk-taking

Entrepreneurial Marketing incorporates the dimension of risk management or calculated risk-taking, which represents the explicit efforts to recognize the risk factors and then to manage or mitigate those factors (Morris et al. 2002).

1.1.5 Innovativeness

Innovation is characterized by the firm's capability to create new ideas that can be commercialized into new products, services, technologies, and markets (Runserspanjol, 2001: cited in Morris et al. 2002; Gamage et al. 2019; Gamage et al. 2020b). In the context of EM, the dimension of innovativeness can be ranged from opportunity identification, concept generation towards product development, and creative augmentation of a firm's resource base to support innovation (Hacioglu et al. 2012; Carson and Gilmore, 2000).

1.1.6 Resource leveraging

Resource leveraging can be identified as the firm's ability to recognize a resource which has not being used optimally, see how the resource could be used in non-conventional ways, and convince those that control the resource to let the marketer use it in a more productive manner (Morris et al. 2002). Hence, entrepreneurs are not merely constrained by the resources under their control but can leverage resources in diverse ways such as using others' resources to accomplish own purpose, complementing one resource with another to reach higher combined value, getting the use of resources that others haven't recognized, using certain resources to obtain other resources, and reaping the benefits of resources more than others in the past (Morris et al. 2002).

1.1.7 Value Creation

Value creation is a process of discovering unexploited sources of customer value and creating unique combinations of resources to produce value (Morris et al. 2002), which leads to acquiring a competitive advantage over large-scale businesses (Becherer et al. 2012).

1.2 SME Performance

Bandara, Jayasundara, Gamage, Ekanayake, Rajapackshe, Abeyrathne, & Prasanna (2020) stated how performance is a construct that has several meanings in the works of literature. Majority of researchers have defined SME performance on the basis of the firm's substantial outcomes in terms of sales growth, the efficiency of investment, customer acquisition, increasing market share, and returns, which can be identified as 'complex series of actions that integrate skills and knowledge' (Hoque, Awang, and Gwadabe, 2018). Additionally, they indicated how the SME performance in terms of outcome constructive management activities involved efficiency, effectiveness, productivity, and growth. They exemplified performance as the power of a firm to yield satisfactory results and actions. Furthermore, Fatoki (2019) as well as Mojekeh et al. (2018) have explained firms' performance as a set of both financial and non-financial indicators. Similarly, Mojekeh, Nwokolie, & Okwuraiwe (2018) acknowledged return on assets (ROA), return on investments (ROI), return on equity (ROE), market share sales growth, and profitability as financial performance measures. In terms of non-financial performance it is measured in terms of customer contentment, worker commitment, innovation capability, internal business process improvement, and service delivery effectiveness as non-financial performance measures (Mojekeh et al. 2018).

1.3 Problem Statement

Several scholars have recognized various entrepreneurial marketing constructs. Cases in point are Hadiyati and Lukiyanto (2019) study which offered entrepreneurial marketing dimensions in relation to philosophy marketing, marketing strategy, methods, and marketing intelligence, whereas Eggers et al. (2020) established a valid scale for EM, showing its inner frame and prediction of performance on the basis of three EM dimensions of change driving,

bootstrapping, and risk-taking. Similarly, Mugambi and Karugu (2017) acknowledged EM dimensions of strategic, innovation, market, and resource leverage orientations. On the other hand, Kilenthong, Hills, and Hultman (2015) discovered six underlying factors of EM behaviours, namely growth orientation, opportunity orientation, total customer focus, value creation through networks, informal market analysis, and closeness to the market. In terms of SMEs Performance, it is conceptualized as Financial Performance, Production Performance, Innovative Performance, Market Performance, and Owner/Manager's Personal Performance. Thus, different researchers have come up with different concepts in the name of entrepreneurial marketing, therefore this extant study focuses on innovativeness, risk-taking, and value creation, which have not been studied together within the context of Nasarawa State SMEs.

1.4 Objectives of the Study

i. To examine the influence of innovativeness on SME Performance
ii. To assess the effect of risk-taking on SME Performance
iii. To determine the impact of value creation on SME Performance

2. Literature Review and Hypotheses Development

2.1. Theoretical Framework

The theoretical framework introduces and describes the theory that explains why the research problem under study exists. It is the structure that can hold or support a theory of a research study.

2.1.1 Resource Based View (RBV)
The resource-based theory was chosen for this study as it offered a more solid foundation for the investigation of the impact of entrepreneurial orientation on the success of small and medium-sized businesses than the other theories. Wernerfelt (1984) and Barney (1991), in their work on firm capital and sustained competitive advantage, are proponents of RBV. The central idea in resource-based theory is that organizations compete against others on the basis of their resources and capabilities (Barney, 1991; Wernerfelt, 1984). According to the theory, in order to have a sustainable competitive advantage, a business organization must have valuable, rare, inimitable, and non-substitutable resources, which include everything within the organization. The resource-based view was developed under the theory of the firm, in which an organization is described as the summation of strategically important resources where everything matters. Resource-Based View is often associated with entrepreneurial orientation performance and growth since the analysis of orientation of entrepreneur's values in terms of innovativeness, risk taking, value creation and customer focus has become one of the most important estimation tools in the last decade for enterprise performance and competitive strength as well as innovation.

2.2 Empirical Review and Hypotheses Development

In an empirical review, the researcher looks at different empirical studies done by other researchers on subjects that are similar to the extant study. It deals with the prior empirical relationship between the various predictor variables and the variable of interest. The explanatory variables to be discussed are: innovativeness, risk-taking, value creation and customer focus; while the criterion variable is the SME Performance.

2.2.1 Innovativeness and SME Performance
Lomberg, Urbig, Stöckmann, Marino, & Dickson, (2017) describe innovativeness as the propensity of business enterprises to inculcate the spirit of generating creative ideas or processes to introduce new products or services through experiment or feasibility study. Also, Covin & Miller (2014) describe innovativeness as the preparedness of business organizations to come up with new ideas in terms of processes/procedures or products in the marketplace. Numerous works of research have been embarked on to examine the relationship between innovativeness and SMEs performance in various countries.

A research carried out by Bowen, Rostami, & Steel (2010) revealed that innovation and business success are related to each other. Businesses that adopt innovations are known to exhibit higher levels of productivity and economic growth than non-innovating firms (Jimenez & Sanz-Valle, 2011; Ngo & O'Cass, 2013). Furthermore, Wang and Yen (2012) established positive relationship between innovativeness and performance among Taiwanese small and medium enterprises (SMEs) in China. In addition, Casillas and Moreno (2010) reported positive relationship between innovativeness and firm's growth in terms of sales, assets and employment. Similarly, Hughes and Morgan (2007) reported positive relationship between innovativeness and product performance but not customer performance. Also, in a study conducted by Sadiku-Dushi, Dana, and Ramadani (2019) which explored the impact of seven entrepreneurial marketing dimensions on a firm's overall performance (measured in terms of efficiency, profit, owner's personal goal, and firm and owner's reputation) in Kosovo State confirmed that innovativeness, exhibits significant positive effects on overall firm performance. As a result of the above discussion, the following hypothesis is formulated:
H1: Innovativeness is significantly related to SME Performance

2.2.2 Risk-Taking and SME Performance
In the entrepreneurship discourse, risk taking is emphasized as an important feature of entrepreneurship and a contributor to performance. Risk-taking is essential for the success and growth of a business, which is based on how entrepreneurs perceive and manage the risks in their environment. In the recent past, Linton and Kask (2017) describe risk taking as a key factor in the origins of entrepreneurial orientation: the roots of entrepreneurial orientation are related to the fact that entrepreneurial firms are more inclined to take risks than other types of firms. Dewan, Shi, and Gurbaxani (2007) found relationship between firms' risk-taking tendency and marginal product of IT. The study revealed that firms were able to produce higher marginal product of IT when it took higher entrepreneurial risk. On the other hand, firms' low-level risk allows lower product of IT. Risk-taking orientation has also been considered as having a direct relation with the possibility of seizing valuable deals and, in general, is positively related to success (Frese, Brantjes, and Hoorn, 2002). Risk taking is related to a readiness to make more resources to projects where the cost of failure may be high (Miller and Friesen, 1982). This is because risk-taking is essential for the success and growth of a business, which is based on how entrepreneurs perceive and manage the risks in their environment. Sadiku, Dana, and Ramadani (2019) examined the impact of seven EM dimensions on a firm's overall performance (measured in terms of efficiency, profit, owner's personal goal, and firm and owner's reputation) in Kosovo State. The outcomes of the study submitted that calculated risk-taking has a significant negative effect on a firm's overall performance. Consequently, the study hypothesized the following:
H2: Risk-taking is significantly associated with SME Performance

2.2.3 Value Creation and SME Performance
The aim of market orientation is to provide superior value to customers (Narver and Slater, 1990). The information gained from consumer and competitor research ensures that superior value is given. When a company conducts a detailed study of its customers' needs and wants, as well as the actions of rivals in the industry, it is in a stronger position to formulate strategies that will help the company compete efficiently and ensure its long-term viability (Kumar, Jones, Venkatesan, & Leone, 2011).

Value creation is at the core of a company's entrepreneurial and marketing strategy (Rezvani and Khazaei, 2014). Despite the fact that value creation is a prerequisite for exchange, effective business owners prioritize the entrepreneurial approach to value creation in order to gain a competitive advantage (Özdemir, 2013). The customer and transaction relationship have always been more relevant in conventional marketing. The core concept in entrepreneurial marketing is constant and creative value creation, based on the belief that value creation is a prerequisite for transactions and relationships.

Works of research have shown that, the relationship between marketing orientation and performance has been extensively studied (e.g., in the hotel industry, manufacturing sector, financial and non-financial services), and there is widespread consensus that marketing orientation (MO) has an impact on SME performance (Ekaterina and Utz, 2014; Jawad, Fayaz, & Shoaib, 2016; Hussain, Ismail, & Akhtar, 2015; Oluwatoyin, Olufunke, & Salome, 2018).

In a study conducted by Murray, Gao, and Kotabe (2011) which focused on the internal mechanism by which MO influences performance in export markets. The researchers came up with three marketing orientation constructs: marketing capabilities, competitive advantages, and performance relationships. According to Murray, et al. (2011), marketing capabilities partially mediate the relationship between marketing orientation and performance, while competitive advantages partially mediate the relationship between marketing capabilities and performance.

Furthermore, in another study by Hussain, et al. (2015) which examined marketing orientation using three dimensions, competitor orientation, customer orientation, and inter-functional coordination, and how these dimensions influence the performance of SMEs in Pakistan. The results of the study discovered that all the three dimensions of marketing orientation have significant influence on the performance of SMEs in Pakistan. Therefore from the above discussions, the following hypothesis is formulated:
H3: Value Creation is significantly related to SME Performance

3. Research Methodology

Key research methodologies include quantitative, qualitative and mixed-methods (Kumar, 2012; McNulty & Zattoni, 2013). This study chooses a quantitative method. The quantitative method is suitable to examine the relationship between the independent variables and the dependent variable in the research. Also, a cross sectional research design will be engaged in this study for the reason that the data will be collected at a single point in time (Kumar, Abdul Talib & Ramayah 2013; Zikmund, Babin, Car & Griffin n 2013; Sekaran & Bougie 2013). The choice of a cross sectional design is due to its cost effectiveness and time saving which meets the requirement of this study (Sekaran 2010; Wilson 2013). With regards to sample size, a sample size of 322 was drawn from a population of 1979 SME operators and managers operating within Nasarawa State and are registered with both SMEDAN and Corporate Affairs Commission (CAC). Simple random technique was adopted since this type of technique gives equal opportunity to participants of being selected. The Cronbach's alpha was used as a measure of reliability. Inferential statistics using correlations and multiple regression analysis were used for data analysis using the statistical product for service solution (SPSS) software. Inferential statistics were utilized to substantiate the relationship between the predictor variables and the criterion variable.

The following regression model was used: $Y = \beta0 + \beta1X1 + \beta2X2 + \beta3X3 + e$
Where Y = SME Performance; $\beta0$ = Constant; $\beta1$, $\beta2$, and $\beta3$ = Coefficient of Predictor variables; X1, X2, and X3 = predictor variables; e = Error Term

4. Results and Discussion

4.1 Response Rate and Demographic Information

All 322 businesses in the sample were contacted, and the questionnaire was self-administered. The researcher formed contact with the business owners and managers in order to clear up any ambiguities and boost response rates. Over the course of data collection phase, 164 completed copies of the questionnaire were obtained from respondents, and the screening process was completed after that. Despite the researcher's request to double-check completed copies of the questionnaire for missing data, 28 of the 164 responses were found to have some issues and were not included in this report, leaving 136 responses for analysis. The response rate is shown in Table 1. The research sampling is summarized in Table 1:

Table 1: Questionnaire Response Rate

Total Questionnaire Administered	322
Total Non-Response	158
Total Numbers of Questionnaires Returned	164
Unusable Responses*	28
Usable Responses	136

Note: * Unusable Responses were because of missing data and alterations.

The questionnaire comprises of primarily two parts: first part encompasses demographic information about entrepreneurs and second part involves measurement questions for Innovativeness, Risk-taking, Value Creation and SME performance. Likert scale was used in the second part of the questionnaire, labelled by '1' for strongly Disagree and '5' for strongly Agree.

4.2 Demographic Analysis

To examine the demographic characteristics of the 136 complete cases, descriptive statistics were computed.

Gender
In terms of Gender, the total number of respondents that are Male has a frequency of 75 respondents, which accounted for 55 percent. The Female gender on the other hand showed a frequency of 61 respondents which accounted for 45 percent of the total participants.

Age
The respondents' age ranged from 20 to 50 years and above. 8 percent or frequency of 11 participants fall within the age range of 20 to 29 years. The age range between 30 and 39 years have frequency of 58 participants or 43 percent. The age range of 40 to 49 years have a frequency of 52 respondents or 38 percent of the total participants. Finally, the age respondents, of 50 years and above have a frequency of 15 respondents or 11 percent of the total participants.

Educational Level
In terms of educational level, this classification was categorized into High School, Diploma, HND/BSc and Postgraduate Level of education.

Respondents that have High School educational level have a frequency of 63 respondents or 46.3 per cent of the total respondents. In the Diploma holders category a total of 30 respondents or 22.1 percent of the total respondents fall in this category. In the HND/BSc category, 25 respondents or 18.4 percent of the total respondents fall into this category. Finally, the Postgraduate category has a frequency of 18 respondents or 13.2 percent of the total research participants.

Table 2: Demographic Analysis

VARIABLES	**FREQUENCY**	**PERCENTAGE**
Gender		
MALE	75	55
FEMALE	61	45
TOTAL	**136**	**100**
Age in Years		
20 – 29	11	8
30 – 39	58	43
40 – 49	52	38
50 and above	15	11
TOTAL	**136**	**100**
Educational Level		
HIGH SCHOOL	63	46.3
DIPLOMA	30	22.1
HND/BSc	25	18.4
POSTGRADUATE	18	13.2
TOTAL	**136**	**100.0**

4.2 Reliability Statistics

Cronbach alpha coefficient is used to assess item reliability (internal consistency) under each variable construct. The coefficient was created by Cronbach's (1951). The rule of thumb says that Cronbach's alpha value of 0.6 and

above is considered an acceptable range for measuring item reliability (Hair, Anderson, Tatham, & Black 1998). In this study, combined Cronbach alpha value of 0.749 was found to be suitable for this analysis as shown in Table 3.

Table 3: Reliability Statistics

Cronbach's Alpha	N of Items
.749	4

4.3 Analysis and Results

The SPSS 22.0 edition was used to analyze the data in this study. The correlation between the dependent variable (SME performance) and the independent variables was measured using correlation analysis in this study. Multiple regression analysis is used to analyze the significant impact level of independent variables (INNOVATIVENESS, RISK-TAKING, and VALUE CREATION) on dependent variable (SME Performance) in order to evaluate the three formulated hypotheses.

To test for multicollinearity in this study, the Durbin-Watson test yields a valid value of 1.716, which falls within the satisfactory range of 1.5 to 2.5. (Durbin & Watson, 1950). All of the VIFs (Variance Inflation Factors) are less than the threshold value of 5.00, and tolerance values are within the appropriate range of 0.1 to 1.0 (Kutner, Nachtsheim, & Neter 2004), meaning that the model is free of multicollinearity issues.

4.3.1 Interpretations

The correlation coefficient (r) was used to measure the extent of the relationship between variables. Hair, Black, Babin and Anderson (2018) assert that a correlation coefficient is a coefficient that indicates the strength of association between any two metric variables and the value ranges from +1 to -1, where +1 indicates a perfect positive relationship, 0 indicates no relationship and -1 indicates a negative relationship or reverse relationship (as one variable grows larger, the other variable grows smaller. The purpose of the correlation analysis was to determine how the criterion variable (SME_Perf) was related to the explanatory variables. Cohen (1988) states in the guidelines that, if r = .10 - .29 then there is a low effect (low correlation); r = .30 -.49 has a medium effect (moderate correlation) and $r = .50 - .99$ has a large effect (strong correlation). Therefore, innovativeness, risk_taking, and value creation have strong correlation, moderate correlation, strong correlation and moderate correlation respectively as shown in Table 4.

Table 4: Correlations

		SME_Perf	Innov_Tiness	Risk_Taking	Val_Creation
Pearson Correlation	SME_Perf	1.000	.760	.375	.511
	Innov_Tiness	.760	1.000	.266	.490
	Risk_Taking	.375	.266	1.000	.231
	Val_Creation	.511	.490	.231	1.000
Sig. (1-tailed)	SME_Perf	.	.000	.000	.000
	Innov_Tiness	.000	.	.001	.000
	Risk_Taking	.000	.001	.	.003
	Val_Creation	.000	.000	.003	.
N	SME_Perf	136	136	136	136
	Innov_Tiness	136	136	136	136
	Risk_Taking	136	136	136	136
	Val_Creation	136	136	136	136

Table 5, shows a multiple regression results of the effect of entrepreneurial marketing dimensions on SME performance of entrepreneurs in Nasarawa State, Nigeria. The fitness of the regression model is based upon the

adjusted R-squared value and the F-test of the regression. The R-squared value of the regression is called the coefficient of determination. It is the ratio of the squared variation that is explained by the regression (explained sum of squares or SSE) divided by the total variation (total sum of squares or SST). It is a value between zero and one (Wooldridge, 2015). Coefficient of determination, R^2 measures the amount of variation in the dependent variable explained by the variation in the independent variable (Keller, 2018). The results of regression analysis show that the Adjusted R^2 is 0.621 which suggests that innovativeness, risk taking initiative, and value creation explain 62.1% of the variations in the performance of the small and medium scale enterprises operating within Nasarawa State.

Table 5: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.793[a]	.629	.621	1.738	1.716

a. Predictors: (Constant), Val_Creation, Risk_Taking, Innov_Tiness

b. Dependent Variable: SME_Perf

The projected regression model fitted the data well as it was statistically significant at F (3, 132) is 74.754 as shown in Table 6. This indicates that the combination of the explanatory variables significantly predict SME performance. The implication is that the regression of innovativeness, risk taking initiative, and value creation on SME performance is statistically significant at $p<0.05$ level of significance. Besides, Durbin Watson (DW) test was 1.716 which is within the 1.5 and 2.5 recommended value for independent observations. Consequently, there was no autocorrelation as shown in Table 5.

Table 6: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	677.175	3	225.725	74.754	.000[b]
	Residual	398.582	132	3.020		
	Total	1075.757	135			

a. Dependent Variable: SME_Perf

b. Predictors: (Constant), Val_Creation, Risk_Taking, Innov_Tiness

Of the three dimensions of entrepreneurial marketing investigated in this study, and as shown in Table 7, Innovativeness ($\beta = 0.637$, $t = 10.313$, $p<0.05$), Risk Taking Initiatives ($\beta = 0.169$, $t = 3.055$, $p<0.05$), and Value Creation ($\beta = 0.159$, $t = 2.602$, $p<0.05$), had a positive and significant contribution to the performance of the selected SMEs in Nasarawa State.

The results show that Innovativeness ($\beta = 0.637$, $t = 10.313$, $p<0.05$), Risk Taking Initiatives ($\beta = 0.169$, $t = 3.055$, $p<0.05$), and Value Creation ($\beta = 0.159$, $t = 2.602$, $p<0.05$) significantly predict SME performance of entrepreneurs in Nasarawa State.

Table 7: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.666	1.320		3.535	.001		
	Innov_Tiness	.535	.052	.637	10.313	.000	.735	1.361
	Risk_Taking	.146	.048	.169	3.055	.003	.916	1.091
	Val_Creation	.127	.049	.159	2.602	.010	.749	1.336

a. Dependent Variable: SME_Perf

The established regression equation was as follows:
SME_Perf = 4.666 + 0.535Inno_Tiveness + .146Risk_Taking +.127Val_Creation

4.4 Discussion on the Results

One of the results of this study showed that the coefficient for innovativeness (β = 0.535) is statistically significant and different from zero. This is because its p-value is 0.000 which is below the 5% degree of significance. Therefore, a unit increase in innovativeness will result in a 0.535 improvement in SME performance. Hence, the null hypothesis was rejected, and a finding made that Innovativeness is significantly related to SME Performance. The result is in agreement with earlier studies such as Wang and Yen (2012) who established a positive relationship between innovativeness and performance among Taiwanese small and medium enterprises (SMEs) in China. Also, the finding of the study is in line with Casillas and Moreno (2010) study which reported a positive relationship between innovativeness and firm's growth in terms of sales, assets and employment.

Furthermore, another result of this study showed that the coefficient for risk-taking β = (0.146) is statistically significant and different from zero. This is because its p-value is 0.003 which is below the 0.05 degree of significance. Thus, a unit increase in risk-taking will result in a 0.146 improvement in SME performance. So, the null hypothesis was rejected, and a finding made that risk-taking is significantly associated with SME Performance. The result agrees with earlier studies such as Linton and Kask (2017) study which describe risk taking as a key factor in the origins of entrepreneurial orientation. Also, the finding is in line with Dewan, Shi, and Gurbaxani (2007) study which found a relationship between firms' risk-taking tendency and marginal product of IT.

Similarly, Value Creation is positively and significantly related to SME Performance and therefore the third hypothesis of this study which stated that value creation is significantly related to SME Performance is supported. This finding is consistent with the Rezvani and Khazaei, (2014) study which highlighted the importance of value creation by stating that Value creation is at the core of a company's entrepreneurial and marketing strategy. Furthermore, the outcome of this study is in alignment with the study conducted by Narver and Slater, (1990) which stated that the goal of market orientation is to provide superior value to customers. The result showed that value creation has significant impact on the growth and performance of SMEs.

5. CONCLUSION AND RECOMMENDATION

The study concluded that there was positive statistically and significant effect of entrepreneurial marketing on SMEs performance in Nasarawa State, Nigeria with the result of the multiple regression analysis which showed that the regression coefficients for Innovativeness, Risk Taking Initiatives, and Value Creation were significant and also statistically different from zero and at $p<0.05$ level of significance.

It is therefore, recommended that SMEs should embrace the entrepreneurial dimensions of innovativeness, risk taking, and value creation to increase business performance of SMEs. Also, SMEs operators should adopt the creation of innovative solutions or new product lines; SME owners and managers should be free to take initiative for the best interest of the organization and provide superior value to customers which will increase firm performance.

5.1 Limitations and Future Studies

Business owners were the only ones who responded to this survey, and the research was limited to the organizational level. As a result, a detailed analysis of study variables at other levels, such as group and individual, cannot be in-depth. In addition, as the extant research used a quantitative method to achieve its objectives, future studies might utilize mixed methods techniques to explore the scope of the study variables in order to provide a more in-depth understanding of the issues. Finally, the study's constructs were limited to three explanatory constructs such as innovativeness, risk-taking, and value creation; leaving out proactiveness, customer intensity,

opportunity driven, and resource leveraging. Therefore, future studies should examine in detail all the dimensions of EM vis-à-vis SMEs in Nasarawa State.

References

Ayyagari, M., Beck, T., & Demirgüç-Kunt, A. (2007). Small and medium enterprises across the globe. Small business economics, 29(4), 415-434.

Bandara, K., Jayasundara, J., Gamage, N, Ekanayake, E., Rajapackshe, P., Abeyrathne, G. & Prasanna, R. (2020). Entrepreneurial Marketing & Performance of Small & Medium Enterprises in Developed and Developing Economies: A Conceptual Exploration.

Barney J. B. (1991). Firm resources and sustained competitive advantage. Journal of Management Sciences, 17(1), 99-120.

Becherer, R. C., Helms, M. M., & McDonald, J. P. (2012). The effect of entrepreneurial marketing on outcome goals in SMEs. New England Journal of Entrepreneurship, 15(1), 3.

Bowen, F. E., Rostami, M. & Steel, P. (2010) timing is everything: A meta-analysis of the Relationships between organizational performance and motivation, Journal of Business Research, 63 (11): 1179-1185

Casillas, J. C. and Moreno, A. M. (2010). The relationship between entrepreneurial orientation and growth: The moderating role of family involvement. Entrepreneurship and Regional Development, 22(3-4), 265-291.

Carson, D. & Gilmore, A. (2000). Marketing at the interface: not 'what' but 'how'. Journal of marketing theory and practice, 8(2), 1-7.

Cohen, J. (1988). Statistical power analysis for the behavioural sciences (2nd ed.). Hillsdale, New Jersey: Lawrence Erlbaum.

Collinson, E. (2002). The marketing/entrepreneurship interface. Journal of Marketing Management 3 (4), 337{340.

Collinson, E. and E. Shaw (2001). Entrepreneurial marketing a historical perspective on development and practice. Management Decision 39 (9), 761{766.

Covin, J. G., & Miller, D. (2014). International entrepreneurial orientation: conceptual considerations, research themes, measurement issues, and future research directions. Entrepreneurship Theory and Practice, 38(1), 11-44.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16(3), 297-334.

Day, G. S., & Montgomery, D. B. (1999). Charting new directions for marketing. The Journal of Marketing, 63(4), 3-13.

Dewan, S., Shi, C., & Gurbaxani, V. (2007). Investigating the risk–return relationship of information technology investment: Firm-level empirical analysis. Management science, 53(12), 1829-1842.

Durbin, J., & Watson, G.S. (1950). Testing for serial correlation in least squares regression I. Biometrika, 37(4), 409-428.

Eggers, F., Niemand, T., Kraus, S., & Breier, M. (2020). Developing a scale for entrepreneurial marketing: Revealing its inner frame and prediction of performance. Journal of Business Research, 113, 72-82. 9

Ekaterina, P. and Utz, D., 2014. The impact of market orientation on Business Performance: The Case of Tatarstan Knowledge-Intensive Companies, Russia. Problems and Perspectives in Management, 12, pp.225-231.

European Union 2018 https://ec.europa.eu/growth/smes/businessfriendly-environment/performance-review en (accessed on 25 April 2019).

Fatoki, O. (2019). Entrepreneurial Marketing and Performance of Small and Medium Enterprises in South Africa. Journal of Reviews on Global Economics, 8, 1429-1437.

Frese, M., Brantjes, A., & Hoorn, R. (2002). Psychological success factors of small scale businesses in Namibia: The roles of strategy process, entrepreneurial orientation and the environment. Journal of developmental Entrepreneurship, 7(3), 259-282.

Gamage, S. K.N., Ekanayake, E. M. S., Abeyrathne, G. A. K. N. J., Prasanna, R. P. I. R., Jayasundara, J. M. S. B., & Rajapakshe, P. S. K. (2019). Global Challenges and Survival Strategies of the SMEs in the Era of Economic Globalization: A Systematic Review.

Gamage, S. K. N., Ekanayake, E., Abeyrathne, G. A. K. N. J., Prasanna, R. P. I. R., Jayasundara, J. M. S. B., & Rajapakshe, P. (2020). A review of global challenges and survival strategies of small and medium enterprises (SMEs). Economies, 8(4), 1-24.

Gilmore, A., & Coviello, N. (1999). Methodologies for research at the marketing/entrepreneurship interface. Journal of research in marketing and entrepreneurship.

Gorica, K., & Buhaljoti, A. (2016). Entrepreneurial Marketing: Evidence from SMEs in Albania. American Journal of Marketing Research, 2(2), 46-52.

Gronroos, C. (1990). Relationship approach to marketing in service contexts: The marketing and organizational behavior interface. Journal of Business Research, 20(1), 3-11.
Hacioglu, G., Eren, S. S., Eren, M. S., & Celikkan, H. (2012). The effect of entrepreneurial marketing on firms' innovative performance in Turkish SMEs. Procedia-Social and Behavioral Sciences, 58, 871-878
Hadiyati, E., & Lukiyanto, K. (2019). The Effect of Entrepreneurial Marketing Dimensions On Micro, Small, and Medium Enterprise Performance in Indonesia. International Journal of Scientific & Technology Research, 8(10).
Hair, F.J, Anderson, R.E., Tatham, R.L., & Black, W.C. (1998). Multivariate data analysis with readings,(Fifth Edition). Prentice-Hall, Upper Saddle River, New Jersey.
Hair J.F. (Jr), Black W.C., Babin B.J. and R.E., Anderson, R.E. (2018). Multivariate data analysis (8th ed.). Stamford, USA: Cengage Learning.
Hills, G. and R. LaForge (1992). Research at the marketing interface to advance entrepreneurship theory. Entrepreneurship Theory and Practice 16 (3), 33{59.
Hisrich, R. (1992). The need for marketing in entrepreneurship. Journal of Business & Industrial Marketing 7 (3), 53{57.
Hoque, A. S. M. M., Awang, Z., & Gwadabe, U. M. (2018). The Effect of Entrepreneurial Marketing on Bangladeshi SME performance and the Role of Organizational Culture: A Structural Equation Modelling. Journal of Management and Operation Research, 1, 1-21.
Hoy, F. (2008). Organizational learning at the marketing/entrepreneurship interface. Journal of Small Business Management, 46(1), 152-158.
Hoyer, W. D., Chandy, R., Dorotic, M., Krafft, M., & Singh, S. S. (2010). Consumer co-creation in new product development. Journal of Service Research, 13(3), 283-296.
Hughes, M. and Morgan, R.E. (2007). Deconstruction the relationship between entrepreneurial orientation and business performance at the embryonic stage of firm growth. Industrial Marketing Management, 36(5), 651-661.
Hussain, J., Ismail, K., & Akhtar, C. S. (2015). Market orientation and organizational performance: case of Pakistani SMEs. Arabian Journal of Business and Management Review, 5(5), 1-6.
Jawad, H., Fayaz, A.S. and Shoaib, Ch. A., 2016. Market Orientation and Organizational Performance in Small and Medium Sized Enterprises: A Conceptual Approach. City University Research Journal, 6, pp.166-180.
Jimenez, D., & Sanz-Valle, R. (2011). Innovation, organizational learning and Performance. Journal of Business Research (64).
Keller, G. (2018). Statistics for management and economics (11th ed.). Stamford, USA: Cengage Learning.
Kilenthong, P. (2012). An empirical investigation of entrepreneurial marketing and the role of entrepreneurial orientation (Doctoral dissertation, University of Illinois at Chicago).
Kilenthong, P., Hills, G. E., & Hultman, C. M. (2015). An empirical investigation of entrepreneurial marketing dimensions. Journal of International Marketing Strategy, 3(1), 1-18.
Kotler, P. (2011). Reinventing marketing to manage the environmental imperative. Journal of Marketing, 75(4), 132-135.
Kumar, A. (2012). Using phenomenological research methods in qualitative health research. International Journal of Human Sciences, 9, 790-804 doi: 10.14687/ijhs
Kumar, M., Abdul Talib, S. & Ramayah, T. 2013. Business Research Methods. New York: Oxford University Press.
Kumar, V., Jones, E., Venkatesan, R., & Leone, R. P. (2011). Is market orientation a source of sustainable competitive advantage or simply the cost of competing? Journal of marketing, 75(1), 16-30.
Kutner, M.H., Nachtsheim, C.J., & Neter, J. (2004). Applied linear regression models, (Fourth Edition). McGraw Hill/Irwin, Chicago, IL.
Linton, G., & Kask, J. (2017). Configurations of entrepreneurial orientation and competitive strategy for high performance. Journal of Business Research, 70, 168–176.
Lomberg, C., Urbig, D., Stöckmann, C., Marino, L. D., & Dickson, P. H. (2017). Entrepreneurial orientation: the dimensions' shared effects in explaining firm performance. Entrepreneurship Theory and Practice, 41(6), 973-998
McNulty, T., & Zattoni, A. (2013). Developing corporate governance research through qualitative methods: A review of previous studies. Corporate Governance, 21, 183-198.
Miller, D. & Friesen, P.H. (1982) Innovation in conservative and entrepreneurial firms: Two models of strategic momentum. Strategic Management Journal, 3, p.1-25.
Mojekeh, M. O., Nwokolie, C. E., & Okwuraiwe F. E. (2018). Entrepreneurial Marketing and the Performance of the Selected Small and Medium Scale Enterprises in Nigeria. Journal of Economics, Business, and Management, 2, 1-23 DOI: 10.21276/sjebm.2018.5.10.9.
Morris, M. H., Schindehutte, M., & LaForge, R. W. (2002). Entrepreneurial marketing: a construct for integrating emerging entrepreneurship and marketing perspectives. Journal of marketing theory and practice, 10(4), 1-19.

Mugambi, E. N., & Karugu, W. N. (2017). Effect of entrepreneurial marketing on the performance of real estate enterprises: A case of Optiven Limited in Nairobi, Kenya. International Academic Journal of Innovation, Leadership and Entrepreneurship, 2(1), 46-70.

Murray, J.Y., Gao, G.Y. and Kotabe, M., 2011. Market Orientation and Performance of Export Ventures: The Process through Marketing Capabilities and Competitive Advantages. Journal of the Academy of Marketing Science, 39, pp.252-269, https://doi.org/10.1007/s11747-010-0195-4.

Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. Journal of marketing, 54(4), 20-35.

Ngo, L. V. & O'Cass, A. (2013) Innovation and business success: The mediating role of customer Participation, Journal of Business research, 66(8): 1134-1142

Oluwatoyin, A.M., Olufunke, A.P. and Salome, I.O., 2018. The Impact of Market Orientation on Performance of Selected Hotels in Ondo State, Nigeria. Open Journal of Business and Management, 6, pp.616-631. https://doi.org/10. 4236/ojbm.2018.63047.

Özdemir, Ö.G., 2013. Entrepreneurial Marketing and Social Value Creation in Turkish Art Industry: an Ambidextrous Perspective. Journal of Research in Marketing and Entrepreneurship, 15(1), pp.39- 60.

Pandya, V. M. (2012, September). Comparative analysis of development of SMEs in developed and developing countries. In The 2012 International Conference on Business and Management (pp. 6-7).

Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. Journal of Interactive Marketing, 18(3), 5-14.

Rezvani, M. and Khazaei, M., 2014. Evaluation of Entrepreneurial Marketing Dimensions According to Characteristics of Institutions: Institutions Age and Size. International Journal of Basic Sciences & Applied Research, 3(4), pp.207-213.

Sadiku-Dushi, N., Dana, L. P., & Ramadani, V. (2019). Entrepreneurial marketing dimensions and SMEs performance. Journal of Business Research, 100, 86-99.

Schindehutte, M., & Morris, M. (2010). Entrepreneurial marketing strategy: lessons from the Red Queen. International Journal of Entrepreneurship and Innovation Management, 11(1), 75-94.

Sekaran, U. (2010). Research Methods for Business: A Skill Building Approach. 4th edition. New York: John Willey and Sons, Inc

Sekaran, U. & Bougie, R. (2013). Research Methods for Business: A Skill Building Approach. 6th edition. Chichester: John Willey and Sons Ltd.

Shaw, E. (1999). Networks and their relevance to the entrepreneurial/marketing interface: A review of the evidence. Journal of Research in Marketing and Entrepreneurship, 1(1), 24-40.

Stokes, D. (2000). Putting entrepreneurship into marketing: The process of entrepreneurial marketing. Journal of Research in Marketing and Entrepreneurship, 2(1), 1 16.

Wang, H. K. & Yen, Y. F. (2012). An empirical exploration of corporate entrepreneurial orientation and performance in Taiwanese SMEs: a perspective of multidimensional construct. Total Quality Management and Business Excellence, 23(9), 1035-1044.

Webster, F. (1992). The changing role of marketing in the corporation. Journal of Marketing, 56(4), 1-17.

Wernerfelt, B. (1984). A resource-based view of the firm. Strategic management journal, 5(2), 171-180.

Wooldridge, J. M. (2015). Introductory Econometrics: A Modern Approach, 6e. Mason, OH: South-Western CENGAGE Learning.

Zikmund, W.G., Barry, J.B., Jon, C. & Griffin, C.M.G. (2013). Business Research Method. 8th edition. New York: Cengage Learning.

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 209-217
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.357

Impacts of Capital Structure and Dividend Policy on the Financial Performance of Listed Companies on Vietnamese Stocks Market

Loan T. Vu[1], Anh T. H. Vu[2], Thao T. P. Nguyen[3]

[1] University of Economics and Business - Vietnam National University, Hanoi, Vietnam
[2] Joint Stock Commercial Bank for Investment and Development of Vietnam (BIDV), Hanoi, Vietnam
[3] Thai Nguyen University of Economics and Business Administration, Thainguyen, Vietnam

Correspondence: Loan T. Vu, University of Economics and Business - Vietnam National University, Hanoi, Vietnam. Tel: (+84) (974) 943069. E-mail: loanvu.kttn@gmail.com; loanvu.kttn@vnu.edu.vn

Abstract
This study is taken to describe the relationship between the levels of debt, dividend policy and the performance of firms listed in Vietnamese stock market. The dividend policy is proxied by the dividend yield while firm's performance is measured by ROE, ROA, and P/E. The total number of observations is 552, collecting from 92 listed companies on Hochiminh Stock Exchange during 2012 and 2019. The analysis results from generalized least squares (GLS) models report that the choice of firm's performance proxy affects the relationship between firm's performance and leverage as well as dividend policy. While leverage has positive impact on ROE and ROA, it has negative impact on P/E. In contrast, dividend yield ratio is negatively correlated with ROA and P/E but positively correlated with ROE. However, the impact of debt levels on firm's performance is independent with the choice of leverage proxy. The findings of this research are expected to provide better understanding about the connection between debt, dividend and performance of the firm that can support the managers to make relevant decisions.

Keywords: Leverage, Dividend Yield, ROA, ROE, P/E, Financial Performance

1. Introduction

Firm's financial performance is one of the main concerns of firm's managers. Among factors that affecting the firm performance, capital structure is an important factor that relates to the relationship among mangers, stockholders and creditors. The firm's managers must give solutions to these questions: how much debt the firm should maintain? Should firm issue debt to fund new projects? The managers should concern about the pros and cons of using debt especially the impact of debt levels to firm's performance.

While there is no specific level of debt that is optimal for a firm, the discussion about debt-to-equity ratio has been the central in corporate finance. Modigliani and Miller (1958, 1961) have explored the relationship between debt levels and firm value as well as firm's cost of capital in the world with tax and without tax. Modigliani and Miller (1958) state that without the existence tax subsidy, the value of a company using debt is the same as the one of that company funded by equity only. However, in the world with tax, the value of the firm rises as the company is more leveraged (Modigliani and Miller, 1961). According to the trade-off theory, the tax shield from taxable interest expense can be offset by the financial distress costs. The financial distress costs may lower the firm's value and increase the firm's cost of capital. Thus, the trade-off theory suggests that the debt level a firm should maintain is the amount that balances the tax benefit from using debt and the additional costs involved.

Jensen and Meckling (1976) discuss the agency costs arising from the conflicts between managers and stockholders to explain firm's capital structure decision. Managers have incentive to use debt as they are forced to pay out cash instead of using equity to finance inefficient investments. However, when a company uses debt, interest conflicts between creditors and stockholders require the managers to pursue selfish strategies. The selfish strategies include taking risker projects, accepting projects with negative NPV, or making high dividend payout. As a result, the agency costs may lower the firm's value.

The selfish strategies discussion by Jensen and Meckling (1976) suggests other variables such as dividend should be added into the model to provide clearer understanding of the relationship between capital structure and firm's financial performance. Therefore, the incorporating of dividend policy to explain the impact of leverage on firm's performance can be seen in recent literature (Basil, 2011; Ince & Owers, 2012; Banerjee & De, 2015; Abbas et al., 2016, Alex and Tse, 2018). However, there is limited number of reports describing the impact of dividend policy on firm's financial performance as an explanatory factor in the model.

In Vietnam, the development of security markets especially bond market recently provides more capital channels for listed companies besides the traditional source of capital from banks or credit institutions. The availability of debt helps the firm to raise capital easily but the impacts of debt on firm's performance should not be ignored in capital structure decision making. From literature review on agency costs, this research is taken to explore the relationship among dividend policy, debt levels and firm performance which is measured by 3 different variables of ROE, ROA, and P/E of listed companies in Vietnamese stock market. The findings of this paper are expected to bring clearer understanding the relationship between leverage, dividend policy and firm's performance.

Literature review shows that the relationship between debt levels and firm's performance can be positive (Margaritis & Psillaki, 2007; Fosu, 2013; Mujahid, Akhtar, 2014), negative (Salim & Yadav, 2012; Abdul, 2012) or mixed (Abor, 2005; Khan, 2012). In addition, the relationship from those variables depends on the choice of firm performance proxies (Salim & Yadav, 2012; Abor, 2005). There is also evidence on little impact of leverage on firm's performance (Edbaid, 2009) or curvilinear relation between debt and firm's performance (Ju-Ann et al., 2010).

Margaritis & Psillaki (2007) report the positive relationship between leverage and firm's performance in their research on 12,240 companies in New Zealand. Fosu (2013) collects total debt-to-total asset ratio as a proxy of leverage and ROA as a measure of performance from 257 companies in South Africa. Fosu (2013) also pays attention to the competition level of the industry while assessing the relationship between leverage and firm's performance. The results report that leverage has a positive effect on firm performance measured by ROA. Salim & Yadav (2012) apply 4 proxies for performance of the firm including ROA, ROE, Tobin's Q, and EPS to illustrate their relationships with leverage while leverage is measured by not only the debt ratio but also the debt growth rate. Dividing data into six different sectors, the analysis outputs emphasize the positive relationship between short-term and long-term debt and Tobin's Q in all sectors. Mujahid, Akhtar (2014) produces similar results when he conducts the regression analysis on data from several textile companies during 2006-2011 in Pakistan. There is also an evidence on positive impact of capital structure on ROA, ROE and EPS calculated for firms in textile sector.

Vătavu (2015) reports that 196 listed companies in Romania are more profitability if they rely more on equity rather than debt during 2003 and 2010. Abdul (2012) conducts a similar research to determine the relationship between capital structure and financial performance of Pakistan companies, proxied by ROA, GM and Tobin's Q. The level of short-term debt and total debt are used to present company's leverage. The analysis shows that firm's leverage and ROA and GM and Tobin's Q are negatively correlated while the relationship between debt level and ROE is insignificant. The relationship between ROE and debt levels is also reported to be negative in the work of Salim & Yadav (2012). Majumdar & Chhibber (1999) examine the sample of firms operating in India having short-term and long-term loans provided by Government-owned institutions. The study suggests that the source of loans from Government-owned entities in India may be the reason for the negative relationship between debt levels and firm's performance in India. According to Abor (2005), there are negative correlation between long-term debt and ROE and a positive relationship between total debt and ROE.

The theories around capital structure decisions such as agency theory and trade-off theory give rise to studies that incorporate other factors for modelling the relationship between financial performance of the firm and the debt levels. Those factors can be ownership dominance (Hess et al.,2010), institutional ownership (Pirzada et al., 2015), cash flow (Kwangmin, 2013) and ownership structure (Margaritis & Psillaki, 2010). Especially, several efforts have been put on examining the interaction between dividends, capital structure, and company's performance.

Alex and Tse (2018) develop an optimal model for dividend policy and capital stucture that connects to financial performance indicators. A firm having high level of debt prefers to maintain higher dividend paypout as an action to protect stockholders. In order to offset the equity' decrease, the company borrows more to improve its income. Fliers (2016) on the other hand, investigate company's ability to change capital structure as an explanatory of dividend paying behaviour. It is stated in his work that firm which is flexible in changing debt levels and equity is more likely to produce smooth dividend. Similarly, Abbas et al., (2016) provides evidence that profitability and company's leverage are determinants of dividend payout. The impact of capital structure on dividend policy is also found in the work of Augusto et al. (2011).

The interaction of capital structure and dividend policy can be examined if the tax rate change (Ince & Owers, 2012.). Banerjee & De (2015) conduct a research to examine the determinants of dividend payout ratio in the periods before and after the global recession. Basil (2011) explores the interaction among profitability, capital structure and dividend payout ratio. He concludes that the relationship between capital structure and profitability is negative while the relationship between dividend payout ratio and profitability is positive. Mcknight & Weir (2009) explore the relationship between capital structure and firm's pperformance by assessing the debt levels and agency costs. The results show that increasing debt can reduces the agency costs. Using the best-practice firm as benchmark to measure the firm profitability, Berger & Patti (2003) show that an increase in agency costs as the result of using more debt can reduce the firm's performance. Alex & Tse (2020), connects to agency theory when he concludes that an enterprise has incentive to maintain high dividend payout as a channel to transfer firm's value to the equity. To offset the decrease in equity, the company issues more debt to improve the return. Fliers (2016) makes a regression of dividend on the capital structure of the firm and detects that the dividend smoothing payment behaviour is correlated with capital structure policy.

In another approach to explore the relationship among dividend, capital structure and firm's performance, Abbas et al. (2016) treat firm's financial performance as an explanatory variable of dividend policy and capital structure. Augusto et al., (2011) reveal that the interactions between capital structure and dividend policy have impact on the value of the firm. Banerjee & De (2015) reports that the dividend payment of the firm is affected by capital structure decision and the profitability of the firm during the period before and after recession in India. Basil (2011) shows that dividend payout ratio is positively correlated with profitability while the relationship between debt levels and profitability is negative. Wang et al., (2014) combine the free cash flow and leverage to explain the changes in profitability of a firm in China. The conclude that when the firms are more leveraged, the profitability ratios fall.

In Vietnam, there have been evidence of a negative correlation between capital structure and financial efficiency. Fu-Min et al. (2014) collect data from companies listed in Vietnam stock exchanges during 2007-2011. They

report that long-term leverage is negatively correlated with firm financial performance computed by market basis. The study also focuses on the enterprises with state ownership and reveals an insignificant role of state ownership on firm performance. Loc, Lanjouw, & Lensink (2004) measure the change of company leverage and firm's profitability as results of privatization process in Vietnam. Nguyen & Nguyen (2020) recently evaluate the relationship between ROE, ROA, and EPS with debt levels in different industries in Vietnam. The results report that short-term and long-term debt levels negatively related to the firm's performance. Regarding to industry classification, relationship between leverage and firm's performance is higher in industries providing medical and consumer goods.

Although the relationship between capital structure and firm's financial performance has been investigated in Vietnam, there is lack of research on the interaction of debt levels, dividend policy and firm's performance. Therefore, this research is taken to test the following hypothesis:

H_{01}: There is a negative relationship between levels of debt and firm's ROE
H_{02}: There is a negative relationship between levels of debt and firm's ROA
H_{03}: There is a negative relationship between levels of debt and firm's P/E
H_{04}: There is a positive relationship between dividend policy and firm's ROE
H_{05}: There is a positive relationship between dividend policy and firm's ROA
H_{06}: There is a positive relationship between dividend policy and firm's P/E

2. Method

Describe variables

In the study, the dependent variable is the firm's financial performance (PERFORMANCE). This variable is described in accounting basis (ROA and ROE) and market measure (P/E). The independent variables are leverage and dividend policy. The leverage uses 2 proxies of Total debt on total assets ratio (TDTA) and long-term debts on total assets ratio (LDTA) while dividend policy is dividend yield (DY). The size of company (total assets-SIZE), the company's growth (sale growth rate-GROWH) and tangible assets size (TANG) are the control variables in the models.

Sample consists of firms in VN100 index including the 100 largest and most liquid listed firms on Hochiminh stock Exchange (HOSE) during 2014-2019. After removing firms operating in financial sector, the sample consists of 92 companies. Therefore, the total number of observations is 553.

Research Design

Model (*) below describes the relationship between financial performance and independent variables. From model (*) specific models from 1 to 6 are constructed.

$$PERFORMANCE_{i,t} = \alpha + \beta LEVERAGE_{I,t-1} + \gamma DY_{i,t} + \delta CONTROL_{i,t} + \mu_{i,t} \quad (*)$$

$$ROE_{i,t} = \alpha + \beta TDTA_{I,t-1} + \gamma DY_{i,t} + \delta CONTROL_{i,t} + \mu_{i,t} \quad (1)$$

$$ROA_{i,t} = \alpha + \beta TDTA_{I,t-1} + \gamma DY_{i,t} + \delta CONTROL_{i,t} + \mu_{i,t} \quad (2)$$

$$P/E_{i,t} = \alpha + \beta TDTA_{I,t-1} + \gamma DY_{i,t} + \delta CONTROL_{i,t} + \mu_{i,t} \quad (3)$$

$$ROE_{i,t} = \alpha + \beta LDTA_{I,t-1} + \gamma DY_{i,t} + \delta CONTROL_{i,t} + \mu_{i,t} \quad (4)$$

$$ROA_{i,t} = \alpha + \beta LDTA_{I,t-1} + \gamma DY_{i,t} + \delta CONTROL_{i,t} + \mu_{i,t} \quad (5)$$

$$P/E_{i,t} = \alpha + \beta LDTA_{I,t-1} + \gamma DY_{i,t} + \delta CONTROL_{i,t} + \mu_{i,t} \quad (6)$$

FEM and REM models are supposed to be appropriate for panel data collected in this research. In the fist step, the selection of FEM or REM depends on the result of Hausman test. For model chosen, several tests to detect multi-collinear, autocorrelation, heteroscedasticity errors are taken. In step 2, FEM or REM model contains any errors, GLS is recommended.

3. Model's results

Before taking Hausman test to select FEM or REM model, the statistic description of variables is shown in Table 1 to provide overall understanding about the data.

Table 1: Summary of descriptive statistics

Variables	Mean	Std. Dev	Minimum	Maximum	Median	Skewness	Kurtosis
ROE	0.126	0.359	-7.32421	0.9539	0.134	-16.796	339.624
ROA	0.086	0.082	-0.39897	0.416	0.073	0.536	8.111
P/E	20.817	78.043	-4.42	1.255	9.700	11.887	161.643
LDTA	0.089	0.122	0.000	1.000	0.029	1.721	5.347
TDTA	0.421	0.225	0.0027	1.000	0.417	0.232	2.526
DY	5.561	4.606	0.000	24.100	5.210	0.861	3.978
TANG	0.228	0.208	0.000	0.940	0.170	1.422	4.665
SIZE	28.054	1.465	24.6191	32.254	27.846	0.559	2.937
GROWTH	0.133	0.413	-0.8824	4.113	0.081	4.434	36.604

The decision of choosing FEM or REM depends on the results of Hausman test (Table 2). Accordingly, FEM is chosen for models 1,2,4, and 5 as the P-values are smaller than 0.05 while REM is chosen for models 3 and 6 because the P-value are bigger than 0.05.

Table 2: Results of Hausman tests

	model 1	model 2	model 3	model 4	model 5	model 6
chi2 (5)	13.230	18.730	3.090	14.430	13.900	8.200
Prob>chi2	0.021	0.002	0.686	0.013	0.016	0.145

FEM (models 1,2,4,5) and REM (models 3,6) are tested problems of multicollinearity, autocorrelation, and heteroskedasticity. The multicollinearity errors are diagnosed by the VIF estimates shown in table 3. All VIFs just above 1 indicate that there is no multicollinearity among predictors.

Table 3. Results of multicollineary

	model 1	model 2	model 3		model 4	model 5	model 6
Variable	*VIF*	*VIF*	*VIF*	*Variable*	*VIF*	*VIF*	*VIF*
SIZE	1.150	1.150	1.150	SIZE	1.410	1.410	1.410
TDTA	1.140	1.140	1.140	LDTA	1.240	1.240	1.240
DY	1.030	1.030	1.030	DY	1.180	1.180	1.180
GROWH	1.020	1.020	1.020	GROWH	1.030	1.030	1.030
TANG	1.000	1.000	1.000	TANG	1.020	1.020	1.020
VIF	1.070	1.070	1.070	VIF	1.170	1.170	1.170

According to Wooldridge test rule for autocorrelation, there is no autocorrelation in each model if P-value is smaller than 0.05. However, autocorrelation exits if P-value is bigger than 0.05 in each model. According to table 4, autocorrelation can be found in models 1,2,3 that include long-term debt on total assets as proxy for leverage.

Table 4: Results of autocorrelation

	model 1	model 2	model 3	model 1	model 2	model 3
F(1,91)	0.825	0.112	1.384	8.80E+06	1.50E+05	5.660
Prob > F	0.366	0.738	0.243	0.000	0.000	0.009

For heteroskedasticity, Wald test is run in each of six models. If P-value is smaller than 0.05, heteroskedascity is problem in each model as the null hypothesis of no heteroskedasticity is rejected. As shown in table 5, all P values are under 0.05, thus, heteroskedasticity problem is existing in each model.

Table 5: Results of heteroskedasticity testing

	model 1	model 2	model 3	model 4	model 5	model 6
Chi^2 (92)	13.230	18.730	1.50E+05	6.20E+06	2.30E+05	6.510
Prob	0.021	0.002	0.000	0.000	0.000	0.005

GLS models are run to test the relationship among firm's financial performance and leverage, dividend policy and control variables because the the existence of heteroskedasticity detected in FEM and REM models. Table 6 below presents the coefficients of independent variables in 6 models and the significance of relationships between independent variables and dependent variable. Table 7 summarize all the signs of correlations among leverage, dividend policy, and firm's performance.

Table 6: Results of GLS models

	Coef.	Std.Er.	T	p>|t|		Coef.	Std.Er.	T	p>|t|
Model 1 *Dependend variable: ROE*					*Model 2* *Dependend variable: ROA*				
TDTA	0.033	0.026	1.270	0.204	TDTA	-0.102	0.041	-2.490	0.015
DY	0.003	10.996	2.680	0.008	DY	-0.002	0.001	-2.880	0.005
SIZE	0.007	0.004	1.830	0.067	SIZE	-0.011	0.012	-0.890	0.375
GROWTH	0.110	0.018	6.070	0.000	GROWTH	0.020	0.006	3.190	0.002
TANG	0.025	0.026	0.990	0.321	TANG	0.024	0.052	0.470	0.641
_cons	-0.110	0.109	-1.010	0.315	_cons	0.429	0.327	1.310	0.192
Model 3 *Dependend variable: P/E*					*Model 4* *Dependend variable: ROE*				
TDTA	17.282	10.415	1.660	0.098	LDTA	0.400	0.159	2.150	0.012
DY	-0.167	0.529	-3.150	0.002	SIZE	-0.077	0.014	-5.430	0.000
SIZE	1.591	1.511	1.050	0.293	GROWTH	0.821	0.060	13.690	0.000
GROWTH	1.764	5.358	0.330	0.742	DY	0.028	0.005	6.120	0.000
TANG	-2.965	10.620	-0.280	0.780	TANG	0.069	0.105	0.660	0.512
_cons	-22.357	39.574	-0.560	0.572	_cons	1.968	0.403	4.890	0.000
Model 5 *Dependend variable: ROA*					*Model 6* *Dependend variable: P/E*				
LDTA	-0.202	0.027	-7.520	0.000	LDTA	56.531	27.322	2.070	0.039

SIZE	0.005	0.002	2.200	0.028	DY	-1.625	0.426	-3.820	0.000
DY	0.003	0.001	3.590	0.000	SIZE	0.459	1.509	0.300	0.761
GROWTH	0.038	0.008	4.460	0.000	GROWTH	6.433	4.299	1.500	0.135
TANG	0.089	0.016	5.480	0.000	TANG	-9.694	11.0169	-0.880	0.379
_cons	-0.091	0.069	-1.320	0.187	_cons	12.705	41.466	0.310	0.759

Table 7: The summary of coefficient signs

	ROE	**ROA**	**P/E**
TDTA	+	+	+
LDTA	+	+	-
DY	+	-	-

(+) positive impacts; (-) negative impact;

4. Discussion

According to the analysis results of 6 models, the relationships among capital structure, dividend and firm's performance depend on the choice of firm's financial performance proxies. Both TDTA and LDTA have positive impact on ROE and ROA (H_{01} and H_{02} are rejected). However, these two variables are negatively correlated with P/E (H_{03} is accepted). The difference of relationship signs reported in these models can be seen is consistent with the results from the works of Salim & Yadav (2012) and Abor (2005).

Dividend yield is statistically significant in all 6 models. Like the capital structure, the relationships between dividend yield and firm's performance are not the same if the firm's performance differs in the models. Dividend yield has a positive impact on ROE (H_{04} is accepted) but negative impact on ROA and P/E (H_{05} and H_{06} are rejected).

From the results in 6 models, the choice of financial performance measure plays an important role in deciding the relationship among capital structure and dividend policy of the firm. However, despite using long-term debt or total debt to measure the debt levels, findings about the relationship between capital structure and firm's performance are unchanged.

The positive coefficient signs of dividend yield and capital structure in models 1 and 4 show that company's return on total assets ratio increases when the company uses more debt and makes more dividend payout. In contrast, as shown in models 2 and 4, the company's ROE can be affected as firm increases debt level and dividend yield. In addition, the debt level and dividend yield have inverted effects on P/E.

The findings of this paper provide that a change in capital structure and dividend policy may have unexpected consequences on the financial performance of a firm. Therefore, the findings can support firm's managers in making important decisions relating the choice of debt levels and dividend payment. For future research, the impact of capital structure on dividend policy should be tested to detect the existence of selfish strategies in Vietnamese companies before examining the effects of these variables to firm's performance.

References

Abbas, Asad & Hashmi, Shujahat & Chishti, Anwar. (2016). Dividend Policy and Capital Structure: Testing Endogeneity, *SSRN Electronic Journal*, Electronic copy available at: http://ssrn.com/abstract=2745726. 10.2139/ssrn.2745726.

Abdul, G.K. (2012). The Relationship of Capital Structure Decisions with Firm Performance: A Study of the Engineering Sector of Pakistan, *International Journal of Accounting and Financial Reporting*, 2(1), 2162-3082.

Abor, Joshua. (2005). The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana, *Journal of Risk Finance*, 6. 438-445. 10.1108/15265940510633505.

Alex S. L. Tse. (2020). Dividend policy and capital structure of a defaultable firm, *Mathematical Finance, Wiley Blackwell*, 30(3), 961-994.

Ang, J. S., R. A. Cole, and Lin, J. W. (2000). Agency Costs and Ownership Structure, *Journal of Finance*, 55, 81-106.

Augusto, M.G., Lisboa, J.V. and Brandão, E.F. (2011). Dividend policy and capital structure: an empirical application in the Portuguese corporate context, *Int. J. Decision Sciences, Risk and Management*, Vol. 3, Nos. 1/2, pp.2–31.

Baker, Malcolm, and Jeffrey Wurgler (2002). Market Timing and Capital Structure, *Journal of Finance*, 57(1), 1-32.

Banerjee, Arindam & De, Anupam. (2015). Capital Structure Decisions and Its Impact on Dividend Payout Ratio during the Pre- and Post-period of Recession in Indian Scenario: An Empirical Study. Vision: The Journal of Business Perspective , *Journal of MDI , Gurgaon (Sage Publication),* 19, 366-377, 10.1177/0972262915610956.

Basil, Al-Najjar, (2011) .The inter-relationship between capital structure and dividend policy: empirical evidence from Jordanian data, *International Review of Applied Economics*, 25:2, 209-224, DOI: 10.1080/02692171.2010.483464

Berger, Allen & Patti, Emilia. (2003). Capital Structure and Firm Performance: A New Approach to Testing Agency Theory and an Application to the Banking Industry, *Journal of Banking & Finance,* 30, 1065-1102. 10.1016/j.jbankfin.2005.05.015.

Berger, A., Bonaccorsi di Patti, E. (2006). Capital structure and firm performance: a new approach to testing agency theory and an application to the banking industry, *Journal of Banking and Finance*, 30, 1065-102.

Bokhtiar Hasan Md., Mainul Ahsan A. F. M., Afzalur Rahaman Md. & Nurul Alam Md. (2014). Influence of Capital Structure on Firm Performance: Evidence from Bangladesh, *International Journal of Business and Management*, 9(5), 184194.

Brigham, E. F. & Ehrhardt, M. C. (2004). *Financial Management: Theory and Practice*, 11th Edition, South-Western College Publishers, New York.

Ebaid, Ibrahim. (2009). The Impact of Capital Structure Choice on Firm Performance: Empirical Evidence from Egypt, *Journal of Risk Finance*, 10. 477-487. 10.1108/15265940911001385.

Hess, Kurt & Gunasekarage, Abeyratna & Hovey, Martin. (2010). State-dominant and non-state-dominant ownership concentration and firm performance: Evidence from China, *International Journal of Managerial Finance,* 6, 264-289, 10.1108/17439131011074440.

Fliers, Philip. (2016). Dividend Smoothing, Financial Flexibility and Capital Structure, *SSRN Electronic Journal*, 10.2139/ssrn.2821657.

Fu-Min, Chang & Yale, Wang & Nicholas, R. Lee & Duong, T. La. (2014). Capital Structure Decisions and Firm Performance of Vietnamese Soes, Asian Economic and Financial Review, Asian Economic and Social Society, vol. 4(11), 1545-1563.

Fosu, Samuel. (2013). Capital structure, product market competition and firm performance: Evidence from South Africa, *The Quarterly Review of Economics and Finance*, 53, 140–151. 10.1016/j.qref.2013.02.004.

Gleason, Kimberly & Knowles, Lynette & Mathur, Ike. (2000). The Interrelationship Between Culture, Capital Structure, and Performance: Evidence from European Retailers, *Journal of Business Research*, 50. 185-191. 10.1016/S0148-2963(99)00031-4.

Ibrahim El-Sayed Ebaid, (2009). The impact of capital-structure choice on firm performance: empirical evidence from Egypt, *The Journal of Risk Finance, Vol. 10 Issue: 5*, pp.477-487, https://doi.org/10.1108/15265940911001385
Permanent link to this document:
https://doi.org/10.1108/15265940911001385

Ince, U., & Owers, J. E. (2012). The interaction of corporate dividend policy and capital structure decisions under differential tax regimes, *Journal of Economics and Finance*, 36(1), 33-57, https://doi.org/10.1007/s12197-009-9101-7

Jensen, Michael C. & Meckling, William H., (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics*, Elsevier, vol. 3(4), 305-360.

Ju-Ann, Yang , Shyan-Rong, Chou , Hsien-Chao, Cheng & Chen-Hsun, Lee. (2010. The Effects of Capital Structure on Firm Performance in the Taiwan 50 and Taiwan Mid-Cap 100. *Journal of Statistics and Management Systems*, 13:5, 1069-1078, DOI: 10.1080/09720510.2010.10701521

Khan, Mohd. (2012). Capital Structure, Equity Ownership and Firm Performance: Evidence from India, *SSRN Electronic Journal*, 10.2139/ssrn.2016420.

Loc, Truong & Lanjouw, Gerrit & Lensink, Bernardus. (2004). *The impact of privatisation on firm performance in a transition economy: the case of Vietnam,* University of Groningen, Research Institute SOM (Systems, Organisations and Management), Research Report.

Majumdar, Sumit & Chhibber, Pradeep. (1999). Capital Structure and Performance: Evidence from a Transition Economy on an Aspect of Corporate Governance, *Public Choice*, 98. 287-305. 10.1023/A:1018355127454.

Margaritis, Dimitris & Psillaki, Maria. (2007). Capital Structure and Firm Efficiency, *Journal of Business Finance & Accounting,* 34, 1447-1469, 10.1111/j.1468-5957.2007.02056.x.

Margaritis, Dimitris & Psillaki, Maria. (2010). Capital Structure, Equity Ownership and Firm Performance, *Journal of Banking & Finance*, 34. 621-632. 10.1016/j.jbankfin.2009.08.023.

María José Arcas & Patricia Bachiller, (2008). Performance and Capital Structure of Privatized Firms in Europe, *Global Economic Review: Perspectives on East Asian Economies and Industries,* 37:1, 107-123, DOI: 10.1080/12265080801911980

Mcknight, Phillip & Weir, Charlie. (2009). Agency costs, corporate governance mechanisms and ownership structure in large UK publicly quoted companies: A panel data analysis, *The Quarterly Review of Economics and Finance*, 49, 139-158. 10.1016/j.qref.2007.09.008.

Miller, Merton & Modigliani, Franco. (1961). Dividend Policy, Growth, and the Valuation Of Shares, *The Journal of Business*, 34. 411-411. 10.1086/294442.

Modigliani, F. and Miller, M.H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment, *The American Economic Review*, 48, 261-297.

Mujahid, Mubeen & Akhtar, Kalsoom. (2014). Impact of Capital Structure on Firms Financial Performance and Shareholders Wealth: Textile Sector of Pakistan, *International Journal of Learning and Development*, 4. 27. 10.5296/ijld.v4i2.5511.

Nguyen, Thanh & Nguyen, Huu. (2020). Capital structure and firm performance of non-financial listed companies: Cross-sector empirical evidences from Vietnam, *Accounting*, 137-150. 10.5267/j.ac.2019.11.002.

Nguyen, Nhung & Nguyen, Lien & Dang, Hang. (2017). Analyze the Determinants of Capital Structure for Vietnamese Real Estate Listed Companies, *International Journal of Economics and Financial Issues, Econjournals, vol. 7(4), pages 270-282.*

Park, Kwangmin. (2013). Capital structure, free cash flow, diversification and firm performance: A holistic analysis, *International Journal of Hospitality Management,* 33, 51–63. 10.1016/j.ijhm.2013.01.007.

Pirzada, Kashan & Mustapha, Mohd & Wickramasinghe, Danture. (2015). Firm Performance, Institutional Ownership and Capital Structure: A Case of Malaysia, *Procedia - Social and Behavioral Sciences*, 211, 170-176, 10.1016/j.sbspro.2015.11.025.

Salim, Mahfuzah & Yadav, Raj. (2012). Capital Structure and Firm Performance: Evidence from Malaysian Listed Companies, *Procedia - Social and Behavioral Sciences,* 65, 156–166, 10.1016/j.sbspro.2012.11.105.

Vătavu, Sorana. (2015). The Impact of Capital Structure on Financial Performance in Romanian Listed Companies, *Procedia Economics and Finance,* 32, 1314-1322 10.1016/S2212-5671(15)01508-7.

Wang, Guo & Wang, Zi & Li, Yuan, (2014). The Impact of Free Cash Flow and Capital Structure on the Performance of the Company, *Applied Mechanics and Materials*, 623, 305-309, 10.4028/www.scientific.net/AMM.623.305.

Zeitun, Rami and Tian, Gary G. (2007). Capital structure and corporate performance: evidence from Jordan, *Australasian Accounting, Business and Finance Journal*, 1(4) , 40-61. doi:10.14453/aabfj.v1i4.3

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 218-230
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.358

Analysis of Banking Risk, Good Corporate Governance, Capital and Earning Influences on the Indonesia's Commercial Bank Performances

M. Nuruddin Subhan[1]

[1] Faculty of Economics and Business, Universitas Pancasila, Jakarta, Indonesia

Correspondence: John Smith, Faculty of Economics and Business, Universitas Pancasila, Jakarta 12630, Indonesia. E-mail: nuruddin.subhan@univpancasila.ac.id

Abstract
This study aims to analyze the effect of commercial bank soundness in Indonesia based on Bank Indonesia regulation number 13/24/DPNP date 25 October 2011, which concern on the implementation guide for Bank Regulation in Indonesia number 13/1/PBI/ 2011 on assessment of bank healthy. In general, those assessments cover risks, good corporate governance (GCG), earning and capital. While, the performance of commercial bank is measured based on credit growth and profit growth. A total of 45 commercial banks listed on the Indonesia Stock Exchange are the population of the study which will be analyzed using the structural equation modeling program - partial least square (SEM-PLS). The results show that credit risk, GCG and earnings have no effect on bank's performance in Indonesia. Market risk, liquidity risk and capital negatively affect the performance of commercial banks in Indonesia. This research is expected to contribute to the policy making of central banks and also commercial bank organization in particular to improve their performance. This research also contributes to the theory by enriching the discussion on related themes.

Keywords: Performance, Bank, Risk, Good Governance, Capital, Earning

1. Introduction

1.1 Introduce the Problem

Performance illustrates the achievement of an organization. Specifically, in bank sector, good or not, healthy or not, can be seen from its financial statements which represent information about its financial performance. The financial report aims to provide information and current situation of the bank related to internal and external parties. Table 1.1 illustrates bank's performances in Indonesia from 2015 to 2019 as follows:

Table 1.1: Banks performance in Indonesia

	Bank's performance (in billion rupiahs)				
	2015	2016	2017	2018	2019
Total of Loans	4,092,104	4,413,414	4,781,931	5,358,012	5,683,757
Third party capital	4,413,056	4,836,758	5,289,377	5,630,448	5,998,648
Profit	133,198	136,311	165,398	185,439	196,474

Source: Indonesia banking statistics, 2019

The table shows that there was a significant decline in the growth of third-party funds and profits, as well as a significant decrease in the growth of provided credit in 2019. The performance of state-owned banks throughout 2019 experienced a downturn. On average, lending and third-party funds to the four state-owned banks grew only single digit. For examples, PT. Bank Mandiri which posted a net profit of Rp. 27.5 trillion in 2019 only recorded a growth of 9.9% yoy, which is far below the 2018 achievement of 21.2%. PT. Bank Rakyat Indonesia also experienced similar situation which has managed a net profit of Rp. 34.4 trillion in 2019 or about 6.2% percent of growth compared to 11.6% from the previous year. PT. Bank Negara Indonesia in contrast, witnessed a net profit of Rp. 15.4 trillion or 2.5% growth increased in 2019 but was not as high as the growth in 2018 about 10.3%.

Banks in Indonesia generally face challenges and demanded to maintain good performance. Commercial banks in Indonesia need to grow in a healthy manner therefore responsibilities and functions of banking as a financial intermediary in the national economy can run well (Hermawan, 2011). However, banking sector in Indonesia often experience problems related to management aspect and in some cases, several banks have shown a very poor performance, which eventually dropping public trust and causing losses that imposed burden on the government. According to the LPS (Lembaga Penjamin Simpanan) during the period of 2005 to 2019, LPS has handled as many as 98 failed banks with total customer claimed reaching of Rp1.4 trillion. Meanwhile, the only bank rescued by LPS was Bank Century with bailout reaching Rp. 8.1 trillion. In summary, Bank failures as the result of weak good corporate governance or the implementation of Good Corporate Governance (GCG).

The main income of a bank comes from loans, which shows that the more loans are given, the greater the bank's income. However, the high growth in loans will also increase potential risk of non-performing loans. Thus, this study aims to investigate the concept of RGEC from the Central Bank about bank's performance measurement. In this research RGEC are the independent variables while performance is the dependent variable. RGEC stands for Risks (credit risk, market risk and liquidity risk), Good corporate governance, Earning and Capital.

The banking industry is one of the sectors that influences a country's economic development. Therefore, banking sector must become a healthy industry in order to be able to maintain its performance. This is what underlies this research so that the results of this study can become a reference and preference for policy makers in banking organizations to be able to wisely determine the target for lending products. This research is also expected to provide consideration for Bank Indonesia, as the central bank and regulator, to make policies and decisions related to banking health and performance of commercial banks in Indonesia. In addition, this study is expected to contribute to the body of knowledge or a path for further research to discuss in more detail and depth the risks faced by banking industry in its operational activities.

1.2 Literature Review

The effect of banking soundness on commercial bank performance is a focus of interest in this study. Bank's healthy covers risks exposure, good corporate governance, earnings and capital. Meanwhile, commercial bank's performance contains of loan and profit growth. Research related to this theme is very diverse and provides a broad perspective for formulating hypotheses to be tested in this study. Some of them will be discussed briefly in this section.

1.2.1 Effect of Banking Risk on Commercial Bank Performance

Analysis of differences in health level of commercial banks before and after the implementation of Risk Profile, Good Corporate Governance, Earning, Capital (RGEC) method in Indonesia were conducted by Mayasari and

Aryani in 2018 with purposive sampling method of 10 banks in the period 2008-2016 through a different t-test (comparative analysis). The findings revealed that Risk Profile is proxied by Non-Performing Loans (NPL) and earnings proxied by Net Interest Margin (NIM). It has proved with no significant difference before and after the implementation of RGEC. Meanwhile, Good Corporate Governance and Capital, proxied by the Capital Adequacy Ratio (CAR) were proven to have significant differences between before and after the implementation of RGEC. This is in line with research by Ramosa *et al*. (2020) on commercial banks in Peru during the 2009 - 2018 period. Veithzal (2013) explains market risk is a risk that arises because of market movements from portfolios owned by banks, which can be detrimental to the bank (adverse moment). One factor that influence market risk is interest rate, which is measured by the difference between funding interest rate and loan interest rate. The difference between the total cost of funding and the total cost of borrowing is called NIM (Net Interest Margin). Market risk arises from market movements from normal conditions to abnormal conditions so that these conditions cause banks to experience losses (Fahmi, 2014). On the other hand, credit risk can be measured using a Non-Performing Loan (NPL), which is a comparison between total non-performing loans and total debts. The smaller the NPL, the more bank can manage their credit risk well so that it can have a good impact on financial performance assessments. Several researches also revealed that credit risk (NPL) has a negative effect on financial performance (Mushtaq *et al*. 2015; Ndoka & Islami, 2016; and Anshika, 2016). Noman *et al*. (2015) also assert similar results in the Bangladesh banking sector using NPL, LLR, and CAR variables as indicators of credit risk, ROA and NIM as indicators of profitability.

In addition, liquidity risk is a risk caused by bank's inability to meet its maturing obligations. It measures how much the bank's ability to pay its debts and payback to its depositors (Damayanti & Savitri, 2012). If the LDR value is high, then the credit channeled will be bigger therefore it will increase the profitability obtained by the bank through credit. This indicates that the LDR has a positive effect on ROA. This statement is in accordance with research conducted by Rengasamy (2014) and Dewi *et al*. (2015). Accordingly, three hypotheses are formulated as follows:
H1: Credit risk has a negative influence on bank’s performance
H2: Market risk has a negative influence on bank’s performance
H3: Liquidity risk has a positive influence on bank’s performance

1.2.2 Effect of Good Corporate Governance on Commercial Bank Performance
The OECD defines corporate governance as a set of relationships between company management, the board, shareholders, and other parties who have an interest in the company. According to the World Bank, good corporate governance is rules, standards and organizations in the economic sector which regulate the behavior of company owners, directors and managers as well as the details and description of their duties and authorities include their responsibilities to investors (shareholders and creditors). Ideally, good corporate governance ables to reduce risks that may be carried out by the board self-interest decisions and leads to increase investors' confidence to invest (Kusuma in Ristifani, 2009).

According to a research conducted by Nuswandari (2009) that *good corporate governance* positively affects the company’s performance. The result supports by Pranata (2007) who assessed the *good corporate governance* secara with ROE and performance measured by NPM. Therefore, hypothesis four is formulated as follow:
H4: Good Corporate Governance berpengaruh terhadap Kinerja Bank Umum.

1.2.3 The effect of Earning on Commercial bank performance
Earnings ratio is a comparison between profit after tax with profit before tax with total assets owned by the bank in a certain period. In order the ratio calculation result is closer to the actual conditions, the capital position is calculated on average during that period (Riyadi, 2006). Kalendesang (2017) states that ROA ratio has a significant effect on bank financial performance and obtains a healthy predicate. The amount of Return on Asset (ROA) shows better performance, because the rate of return is getting bigger. If the Return on Assets (ROA) increases, it means that the company's profitability increases, hence the benefits can be enjoyed by shareholders.

One of the earnings ratios in this study uses Operational Costs to Operational Income (BOPO). This ratio shows the level of efficiency of bank operational performance (Muhamad, 2014). The higher the level of the ratio, the

worse the performance of the bank's management, because the bank is less efficient in using existing resources in the company. This argument is supported by several research such Sudiyatno (2010), Schiniotakis (2012), and Suhardi and Altin (2013) that BOPO has a negative effect on profitability (ROA).
H5: Earnings effect on commercial banks performance

1.2.4 Effect of Capital on commercial bank performance
Capital is an important factor for a company in the context of business development and to accommodate risks that may occur (Umam, 2013). Capital is an assessment of the bank's capital adequacy to cover current risk exposures and anticipate future risk exposures. Mayunita's research (2017) shows that the CAR (capital adequacy ratio) has a positive effect on bank performance. Here the CAR variable shows its value has increased from year to year. Similarly, Chyntiaovami (2018) and Handayani, (2017) state that the CAR variable has a positive and significant effect on bank performance. CAR shows the ability of bank capital to guard against possible risk of loss to its business activities and has a significant effect on bank performance.

Moussa (2018) analyzes determinants of bank capital and stated that capital is very important to increase the strength and efficiency of the banking system. His research studies a sample of 18 banks in Tunisia during period of 2000-2013 and his finding shows that asset returns, net interest margins, liquidity, inflation rates, foreign ownership and private ownership significantly influence bank capital. This result is also supported by Taherinia and Baqer (2018); Yahaya et al. (2016); Hwang et al. (2013); Petria, et al. (2015) which states that CAR has a positive effect on profitability (ROA).
H6: Capital effects on the performance of commercial banks

1.3 Research Framework

Based on observation in the literature review section, this study proposes six independent variables which measure one bank's performance as the dependent variable, the figure is as follows:

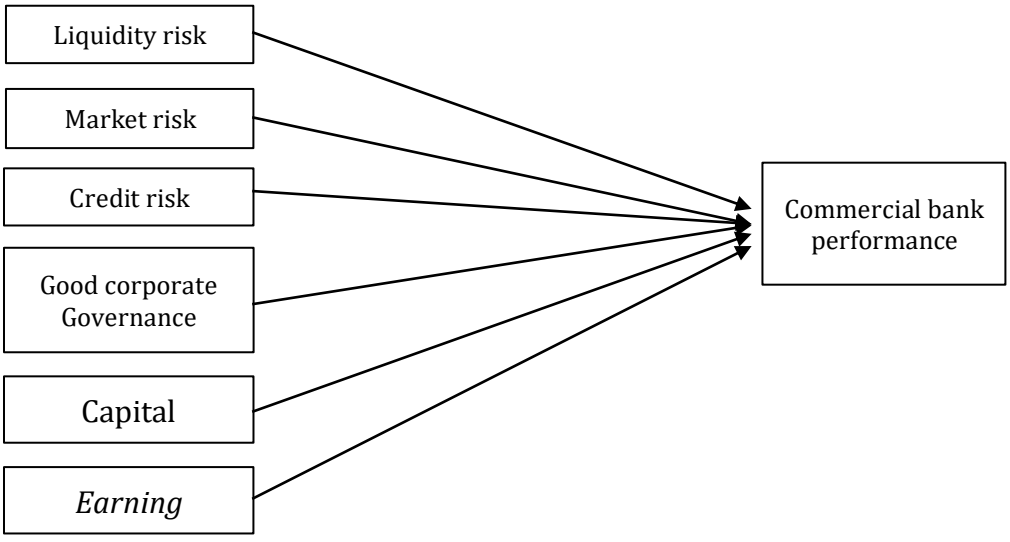


Figure 1.1: Research model

2. Method

2.1 Research Design

The method of this research is exploratory with objective to gain something different than other research and also to test the causal relationship between dependent and independent variables. This research assesses the effect of bank soundness such as risks, good corporate governance, earning dan capital toward performance of commercial bank in Indonesia.

Besides, this article also analysis descriptively the data of bank soundness through bank risk exposures (credit risk, market risk and liquidity risk), good corporate governance, earning dan capital altogether with commercial bank performance through credit as well as profit growths. Therefore, this paper in nature is positivist to test the formulated hypotheses.

The analysis technique used to process the data is the structural equation modeling (SEM) analysis technique using the Partial Least Square (PLS), in order to see the relationship between indicators and latent constructs by calculating the total variance which consist of general, specific and error with a sample of 45 commercial banks that have been go-public and listed on the Indonesia Stock Exchange (IDX). The period of this research is 2015 to 2019.

Several variables were studied in order to achieve research objectives in this study, namely credit risk, market risk, liquidity risk, good corporate governance, capital and earnings, on the performance of commercial banks. The governance process assessment aims to assess the effectiveness of GCG principles implementation process, which is supported by the availability of a bank governance structure and infrastructure. For this reason, a supporting variable is used, namely the frequent training that has been provided and carried out by the governance structure. The indicator of the number of training (training) in this study is the number of training conducted by the governance structure which is recorded in the GCG implementation report.

3. Analysis results

The first step in analysis phase in this study is demographic analysis. Then followed by assessing the validation and reliability of the model. Outer model with reflexive indicators is evaluated through convergent and discriminatory on the indicators forming latent constructs, as well as through composite reliability and Cronbach alpha for the indicator block. The next phase is to evaluate the structural equation model (inner model) which explains the effect of the independent latent model on the dependent latent variable.

3.1 Demographic analysis

In the description of the research data, the minimum, maximum, mean, and standard deviation of each indicator on the research variables are presented. The results of descriptive statistics for data can be seen in the following table:

Table 3.1: Descriptive statistic for each indicator

n = 225	Minimum	Maximum	Mean	Std. Deviation
NPL	.700	15.750	3.80319	2.331626
NPLN	.200	9.920	2.21483	1.573582
PDN	.063	6.820	1.94508	1.707968
PDNV	.043	5.580	1.09112	1.194948
LDR	50.610	111.750	85.98032	12.227406
LCR	-.596	9.081	1.41361	1.797532
CAR	9.927	35.720	20.83464	5.995452
Train	2.000	4.000	3.00000	.707107
Profit	.058	1.472	.15687	.226002
Credit	.047	1.180	.12888	.180793
ROA	-.552	.359	.05491	.099481
Bopo	-.030	.171	.02117	.025176

Source: Result of data analysis

The mean value shown in the table for each construct variables is obtained from time series data for 45 commercial banks in Indonesia (listed on BEI) from 2015-2019. The average NPL (Non-Performing Loan) value as an indicator of the credit risk variable was 3.8. This value increased from 3.3 in 2015. The average NPLN (Non-Performing Loan Netto) was quite low (2.2) because NPLN in 2015 was only 1.8, It increased in the following

years, then fell back to 1.9 in 2019. A high NPL ratio indicates the large number of debtors who do not pay credit installments continuously, either the principal or the interest.

Other indicator, the average of PDN and PDNV are 1.94 and 1.09 respectively. NOP and PDNV are indicators of market risk variables. Among the banks studied, the average NOP and PDNV were less than 20%. This is because banks are required to manage and maintain NOP not exceeding 20% of capital every 30 minutes since the bank's treasury system is opened to closed.

The table also shows the average of LDR (Loan to Deposit Ratio) and LCR (Liquidity Coverage Ratio) which are indicators of liquidity risk variable. The average value of LDR tends to be stagnant, around 86.764% from 2015 to 2019 appointing to 85,990%. This shows that the LDR value is too high. If the LDR value is too high, means that banks do not have sufficient liquidity to cover their obligations to customers (TPF).

Based on the average LCR value, commercial banks in Indonesia are above 1, which means that it is above 100%. According to the regulation, banks are required to meet a minimum quota of 100% LCR in a sustainable manner. The average value of training (abbreviated as Train) is 3.0 which this indicator is used to measure good corporate governance (GCG). In addition, the average value of CAR is 20.8%, this also shows that the CAR of commercial banks in Indonesia is more than the safe limit of 8%, which indicates the ability to provide funds to overcome possible risk of loss. The CAR of commercial banks in Indonesia tends to be stagnant, shown with the values of 21.24 in 2015, 21.49 in 2016, and 21.07 in 2019 respectively.

In regard to operational expenditure, BOPO is the interest expense paid to customers while operating income is the interest earned from customers. The smaller the BOPO value means the more efficient the bank is in operating. The table shows the average value of BOPO is 0.02 or 2%, which means that every 2 rupiah of expenses, it generates income of Rp. 100. The average growth of bank profits is 0.157 and the average credit growth is 0.129.

3.2 Analysis of Structural Equation Modelling (SEM)

The instrument can be said to be valid if the instrument can measure what it should be measured (Cooper and Schindler, 2014). In this study, the validity test used the method of convergent validity and discriminant validity with the help of SmartPLS 3.0. Based on the research method described in chapter 3, before analyzing the data, the first step is to test the quality of the instrument, namely the validity test and the reliability test. The result of convergent validity shows that almost all loading factor values are more than 0.70 and between 0.60 - 0.70 is acceptable. With the variable indicators above, it is declared valid and considered sufficient to meet the convergent validity requirements. In addition, all constructs or latent variables have good discriminant validity, where the indicators in the construct indicator block are better than the indicators in other blocks.

To evaluate the discriminant validity, it can also be seen by the average variance extracted (AVE) method for each construct or latent variable. The AVE value of each construct is above 0.5, except for the liquidity risk which has AVE 0.463 < 0.5. Therefore, there is no convergent validity issue in the model being tested hence the construct in this research model can be said to have good discriminant validity. Based on the composite reliability value, all constructs are very good which is above 0.7, except for liquidity risk which has a composite reliability value of 0.632 <0.7 but the composite reliability value between 0.6 - 0.7 is still acceptable according to Ghozali, (2015: 77). Thus, it can be concluded that the construct indicators are reliable. In other words, all manifest variables of latent variables are proven to have accuracy, consistency and accuracy of instruments in measuring constructs well.

3.2.1 Structural Model (Inner Model)

This subsection explains the results of the path coefficient test, goodness of fit test and hypothesis testing. Path coefficient evaluation is used to show how strong is the effect or influence of the independent variable on the dependent variable. While, coefficient determination (R-Square) is used to measure how much the endogenous variable is influenced by other variables. Chin, (1998) states that the R2 result of 0.67 and above for endogenous latent variables in the structural model indicates that the effect of exogenous variables on endogenous variables is

strong. If the result is 0.33 - 0.67, it is in the medium category, and if the result is 0.19 - 0.33, it is in the weak category (Chin, 1998 quoted in Ghozali and Latan, 2015: 81).

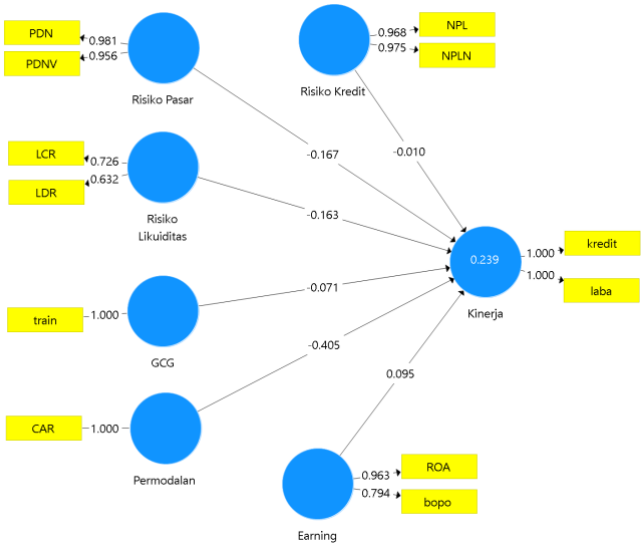


Figure 3.1. Output of Structural Model (*Standardized Output*) – *PLS Algorithm*

Source: Result of data analysis

Based on the inner model scheme that has been shown in Figure 3.1, it can be explained that the regression coefficient value for credit risk variable is -0.010, market risk variable is -0.167, liquidity risk variable is -0.163, GCG variable is -0.071, capital variable is -0.405 and earnings variable is 0.095. These values show that there are five variables in this model that have a negative coefficient as follows: the variable credit risk, market risk, liquidity risk, GCG and capital. These results imply that the greater the coefficient value on these variables, the lower the performance of commercial banks and vice versa. In contrast, the earning variable has a positive coefficient which means that the higher the earnings, the higher the performance of commercial banks. Moreover, R-Square value for the performance variable of commercial banks is 0.239. This value explains that the percentage of commercial bank performance can be explained by credit risk, market risk, liquidity risk, GCG, capital and earnings as much as 23.9% and the remaining 76.1% is caused by other unstudied factors. The R-square value of 0.239 is in the range 0.19 - 0.33 indicates that the model is in the weak category.

3.2.2 Hypotheses tes

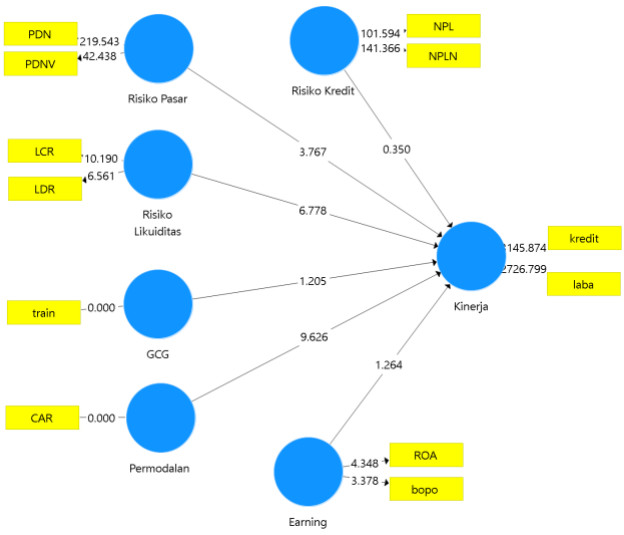


Figure 3.2 Structural model results (*Standardized Output*) – *Bootstrapping*

Source: Result of data analysis

The SmartPLS 3.0 program only provides a bootstrap resampling method. The significance value used was 1.96 (on significance level = 5%) (Ghozali and Latan, 2015: 80). Thus, constructs with t count >1.96 declare to have a significant effect. The following is a summary of the results of hypothesis testing.

Table 4.13: Hypotheses Testing

Hypotheses	Variable	Path Coefficient	T – Statistic	p-values	Remark	Decision
H1	Credit Risk → Performance	-0.010	0.350	0.727	No effect	Rejected
H2	Market Risk → Performance	-0.167	3.767	0.000	Effect significantly	Accepted
H3	Liquidity risk → Performance	-0.163	6.778	0.000	Effect significantly	Accepted
H4	GCG → Performance	-0.071	1.205	0.229	No effect	Rejected
H5	Capital → Performance	-0.405	9.626	0.000	Effect significantly	Accepted
H6	*Earning* → Performance	0.095	1.264	0.207	No effect	Rejected

Source: Result of data analysis

Based on the results of hypothesis testing, it can be explained as follows:

Hypothesis 1 states that credit risk affects the performance of commercial banks. From the results of existing data processing, it is known that the t-value of the credit risk statistic is 0.350 smaller than 1.96 and the p-value is 0.727 > 0.05, so that H0 is accepted and H1 is rejected. This means that the credit risk variable has no effect on the performance of commercial banks so that hypothesis 1 is rejected

Hypothesis 2 states that market risk affects the performance of commercial banks. By looking at the results of existing data processing, the t-value of the market risk statistic is 3,767 > 1.96 and the p-value is 0,000 < 0.05 so that H0 is rejected and H2 is accepted. This means that the market risk variable has a significant effect on the performance of commercial banks so that H2 be accepted.

Hypothesis 3 states that liquidity risk affects the performance of commercial banks. The result of data processing shows that the t-value of the liquidity risk statistic is 6.778 > 1.96 and p-value of 0.000 < 0.05, so that H0 is rejected and H3 is accepted. This means that hypothesis 3 is accepted where liquidity risk has a significant effect on the performance of commercial banks.

Hypothesis 4 describes the effect of GCG on the performance of commercial banks. In the table of processed data, the t-value of the GCG statistic is 1.205 < 1.96 and the p-value is 0.229 > 0.05, so that H0 is accepted and H4 is rejected. This means that the GCG variable has no effect on the performance of commercial banks and hypothesis 4 is rejected.

Hypothesis 5 describes the effect of capital on the performance of commercial banks. With the results from data processing, the t-value of the capital statistic was 9.626 > 1.96 and the p-value was 0.000 < 0.05. This means that H0 is rejected and H5 is accepted, which indicates that the capital variable has a significant effect on the performance of commercial banks.

Hypothesis 6 describes the effect of earnings on the performance of commercial banks. The t statistical earning value from the processed data is 1.264 < 1.96 and the p-value is 0.207 > 0.05. This means that the earning variable has no effect on the performance of commercial banks so that H0 is accepted and H6 is rejected.

4. Discussion

4.1 *Effect of Banking Risks on Commercial Bank Performance*

Among the risks exposures on banking sector consist of credit risk, market risk and liquidity risk. The study results show only market risk and liquidity risk have a significant negative effect on the performance of commercial banks

in Indonesia. The rest does not actually affect the performance of commercial banks in Indonesia. In details, the size of NPLs did not actually affect the performance because credit risk or NPLs could be anticipated with various techniques, methods and alternatives which increasingly develop on banking industry, for instance: rescheduling, reconditioning , restructuring and others method (Didik and Bambang, 2013; Putri Qaniah, 2015; and Pauline, 2015).

Liquidity risk is caused by the inability to fulfill its due obligations. Loan to Deposit ratio (LDR) is used to measure how good the bank to pay its debts and repay to its depositors. LDR indicates the effectiveness of third-party funds (customer funds) channeled to generate returns and profits. The lower the liquidity risk, the better the performance of the bank. In other words, lower liquidity risk (the ability to manage their liquid assets to meet short-term liabilities), it will have an effect on improving the performance. These results are supported by Sari et al. (2012), Damayanti & Savitri, (2012), Fahmi (2014), Attar (2014), Dewi et al. (2015), Mushtaq et al. (2015), Ndoka & Islami (2016), Anshika (2016), Rengasamy (2014).

4.2. *Effect of Good Corporate Governance on Commercial Bank Performance*

The results showed that good corporate governance (GCG) as represented by training indicators which had no effect on the performance of commercial banks in Indonesia. Training is an indicator that explains how much training has been carried out by committee with the aim of helping banking performance, especially in the governance process.

The analysis results show that the quantity of conducted training does not affect the performance of banks in Indonesia. Good quality training actually helps more in the governance process than the quantity of training provided. It is probably the conducted training was not based on business activities related to profit growth and credit growth. Moreover, good corporate governance also requires the existence of the right structure and tools (especially in achieving profit growth and credit growth) to achieve goals and oversight the performance of commercial banks in Indonesia. The results of this theme are in line with Pracoyo and Putriyanti (2016), Yani and Azwansyah (2017), Ferdian (2018), Gabriela and Ivonne (2019) and Panji and Joko (2019).

4.3. The Influence of Capital on Commercial Bank Performance

The results showed that capital had a negative effect on the performance of commercial banks in Indonesia. Even more, capital is the strongest influence on performance compared to other variables. The results of this study also show that the increased capital adequacy ratio (CAR) causes credit growth and profit growth for commercial banks in Indonesia to decline. Capital is the most basic factor for a bank in the context of business development and accommodating risks that may occur. If the value of the CAR is large, the more capital need to carry out for its operational activities. Similarly, with Oino's (2017) studies on the Impact of Regulatory Capital on European Banks Financial Performance, which shows that banks play an important role in the economy by channeling resources from savers to borrowers and striving to allocate productive investment opportunities. However, the last decade has highlighted the dangers of allowing the financial sector to become too large. Thus, negative developments such as rent seeking and the development of complex innovative financial instruments may outweigh the financial benefits.

However, to avoid greater risks, the minimum CAR ratio must be adjusted to the size and nature of banking activities as some banks are involved in riskier projects than others (Adelia, 2011 and Anisah, 2013).

4.4. Effect of Earning on Commercial Bank Performance

The results of this study indicate that earnings have no effect on the performance of commercial banks in Indonesia. The level of ROA and BOPO do not affect profit growth and credit growth. The ROA ratio is a comparison of profit before tax with total assets owned by the bank in a certain period or a comparison of profit after tax with capital. In order for the ratio calculation results closer to the actual conditions, the capital position is calculated averagely during that period. Return on Asset (ROA) shows the health level of a bank because of a large rate of

return. BOPO is a ratio that shows the actual state of bank operations. The higher the level of the BOPO ratio, the worse the health of the bank because the bank's concern is less efficient in using existing resources. The BOPO ratio did not affect credit growth and profit growth for commercial banks in Indonesia, even though commercial banks are efficient in bank operations as well as in the use of assets.

5. Conclusion and Suggestion

5.1 Conclusion

1. The lower the market risk for commercial banks in Indonesia (the ability to manage capital for their foreign exchange activities), the better the performance of commercial banks will be.
2. Liquidity risk has a negative effect on the performance (credit and profit growth) of commercial banks in Indonesia. The lower the liquidity risk in commercial banks in Indonesia (the ability to manage their liquid assets to meet short-term liabilities), the higher the performance (credit and profit growth) of commercial banks.
3. Good Corporate Governance (GCG) as represented by training indicator at commercial banks did not affect the performance (credit and profit growth) of Indonesian commercial banks. A good quality of training carried out by the governance structure is more helpful rather than the quantity of training provided.
4. Capital in commercial banks has a negative effect on the performance (credit and profit growth). The higher the capital adequacy ratio (CAR), the lower the credit growth and profit growth of commercial banks in Indonesia. It is possible for commercial bank credit and profit growth to be shifted to a capital adequacy ratio in order to achieve compliance with the stipulated CAR regulations.
5. Earning at commercial banks does not affect performance in Indonesia. This shows that the level of ROA and BOPO do not affect profit growth and credit growth of commercial banks in Indonesia. ROA shows the health of commercial banks only, because of a good rate of return. Likewise, BOPO does not affect credit growth and profit growth for commercial banks in Indonesia, even though commercial banks are quite efficient in bank operations and asset utilization.

5.2. Suggestion

1. For banking industry
   a. The ability of commercial banks in Indonesia to manage market risk and liquidity risk can be maintained and even improved therefore performance of commercial banks in Indonesia will increase. The ability to manage market risk and liquidity risk should be appreciated by BI as the central bank and financial services authority (OJK).
   b. To achieve the implementation of training in the governance process at commercial banks in Indonesia, it should also improve the quality of training compared to its number.
   c. The increasing capital adequacy ratio (CAR) for commercial banks in Indonesia should be accompanied by the increasing of profit growth. Commercial bank nowadays have been strengthened their capital structure by increasing the amount of reserved profit to increase their paid-in capital.
   d. Because commercial banks have an intermediary function in the economy, the increasing the capital adequacy ratio for commercial banks in Indonesia should be accompanied by the increasing credit growth. However, growth in credit distribution must remain under control because credit with poor collectability has a greater risk, so that assets are weighted according to risk (the components in the capital adequacy ratio will also increase).
   e. The soundness level of commercial banks in Indonesia, which is marked by a good returns and efficiency in operations. It should be used to increase credit growth and profit growth for commercial banks.
2. Future research

   This study provides another perspective for future research using other variables, both financial and non-financial, such as: company size, compliance, maximum credit lending limit (BMPK), fulfillment of minimum statutory reserves (GWM). Inflation rate, BI rate and other variables are also among the

suggestion variables to be accounted so that it can better describe what things can affect Indonesian banking. Samples in further research should also differentiate types bank such as foreign exchange bank, non-foreign exchange bank, conventional and non-conventional (sharia) banks.

Acknowledgments

There is no conflict of interest in this article. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

References

American Psychological Association. (1972). *Ethical standards of psychologists*. Washington, DC: American Psychological Association.

Anderson, C. A., Gentile, D. A., & Buckley, K. E. (2007). *Violent video game effects on children and adolescents: Theory, research and public policy.*

Beck, C. A. J., & Sales, B. D. (2001). *Family mediation: Facts, myths, and future prospects* (pp. 100-102). Washington, DC: American Psychological Association. http://dx.doi.org/10.1037/10401-000

Bernstein, T. M. (1965). *The careful writer: A modern guide to English usage* (2nd ed.). New York, NY: Atheneum.

Bjork, R. A. (1989). Retrieval inhibition as an adaptive mechanism in human memory. In H. L. Roediger III, & F. I. M. Craik (Eds.), *Varieties of memory & consciousness* (pp. 309-330). Hillsdale, NJ: Erlbaum.

Abba, G. O., Zachariah, P., & Inyang, E. E. (2013). Capital Adequacy Ratio and Banking Risks in the Nigeria Money Deposit Banks. *Research Journal of Finance and Accounting*, 4(17), pp: 17–25. Retrieved from http://www.iiste.org/Journals/index.php/RJFA/article/view/8972

Alajmi, M. & Alqasem, K. (2018). Determinants of Capital Adequacy Ratio in Kuwaiti Banks, *Journal of Governance and Regulation*, 4(4), pp: 315-322

Aspal, P. K. and Nazneem, A. (2014). An Empirical Analysis of Capital Adequacy in the Indian Private Sector Banks, *American Journal of Research Communication*, 2 (11), pp: 28-42

Athukorala, Prema-chandra and Peter G. Warr. (2002). Vulnerability to a Currency Crisis: Lessons from the Asian Experience. *The World Economy* 25 (1), pp. 33–57.

Aykut Ekinci, (2016). The Effect of Credit and Market Risk on Bank Performance: Evidence from Turkey. *International Journal of Economics and Financial Issues*, *Econ Journals*, vol. 6(2), pp: 427-434.

Barth JR, Caprio G, Levine R. (2010). Bank Regulation and Supervision: What Works Best? *Journal of Financial Intermediation* 13:205–248

Bateni, Leila, Vakilifard, Hamidreza, dan Asghari, Farshid. (2014). The Influential Factors on Capital Adequacy Ratio in Iranian Banks. *International Journal of Economics and Finance*, 6(11), pp. 108-116

Bertrand, M. and A. Schoar (2003). Managing with Style: The Effect of Managers on Firm Policies. *Quarterly Journal of Economics* 118.4, pp. 1169–1208

Boot, A. and Thakor A.V. (2010). The Accelerating Integration of Banks and Markets and its Implications for Regulation, in A. Berger, P. Molyneux and J. Wilson (eds.), *The Oxford Handbook of Banking*, pp. 58-90.

Borio, C., Zhu, H. (2008). Capital Regulation, Risk-Taking and Monetary Policy: A Missing Link in the Transmission Mechanism? Bank for International Settlements *Working Paper* 268

Buchory, Herry Achmad, (2006). The Influence of Financial Intermediary Function Implementation, Risk Management Application and Bank Capital Structure on Banking Financial Performance, *Disertasi* Fakultas Ekonomi, Universitas Padjadjaran Bandung

Dornbusch, R. (2009). Expectations and Exchange Rate Dynamics. *Journal of Political Economy* 84, pp: 1161–1176

Eichengreen, Barry, and Yung Chul Park (2005). Why Has There Been Less Financial Integration in Asia than in Europe? in Y.C. Park, T. Ito, and Y. Wang, eds., A New Financial Market Structure for East Asia. Cheltenham, Edward Elgar, pp. 84-103

Farlane (2009). Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. *World Bank Economic Review* 13, pp: 379-408.

Fiordelisi, F., and Marques-Ibanez, D. (2013). Is Bank Default Risk Systematic? *Journal of Banking and Finance* M37, pp: 2000-2010

Fiordelisi F, Marques-Ibanez D, Molyneux P. (2011a). Efficiency and Risk in European Banking. *Journal of Banking and Finance* 35 (5), pp: 1315-1326

Francis, W. and Osborne, M. (2010). On the Behavior and Determinants of Risk-Based Capital Ratios: Revisiting the Evidence from UK Banking Institutions. *International Review of Finance*, 10, 485-518

Fu, F., (2009). Idiosyncratic Risk and the Cross-Section of Expected Stock Returns. *Journal of Financial Economics* 91, 2437.

Furman, J. and Stiglitz, J. (2000). Economic Crises: Evidence and Insights from East Asia. *Brookings Papers on Economic Activity*, 29(2), pp. 1–136

Gadzo, Samuel Gameli Holy Kwabla Kportorgbi & John Gartchie Gatsi. (2019). Credit risk and operational risk on financial performance of universal banks in Ghana: A partial least squared structural equation model (PLS SEM) approach, *Cogent Economics & Finance*, 7:1, 1589406

Ghenimi, A., & Omri, M. A. B. (2016). Liquidity Risk Management:A Comparative Study Between Islamic and Conventional Banks. *Arabian Journal of Business and Management Review,* 3(6), pp: 25-30.

Ghozali, I., dan Latan, H. 2015. Partial Least Squares: Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.0 untuk Penelitian Empiris. Semarang: BP-UNDIP.

Giordana, Gaston A., and Ingmar Schumacher. (2017). Bank Liquidity Risk and Monetary Policy. Empirical Evidence on the Impact of Basel III Liquidity Standards. *International Review of Applied Economics* 27, pp: 633–55

Glick, Reuven and Hutchison (2009). Contagion and Trade. Why Are Currency Crises Regional? *Journal of International Money and Finance*, 18, pp: 603-618. Earlier versions issued as CEPR *Discussion Paper* 1947 and NBER Working Paper 6806

Goldstein, Itay. (2005). Empirical Literature on Financial Crises: Fundamentals vs. Panic. In the Evidence and Impact of Financial Globalization. Chapter 36, 523–534. *Academic Press*

Griffin, J. M., & Lemmon, M. L. (2002). Book–to–Market Equity, Distress Risk, and Stock Returns. *The Journal of Finance*, 57(5), pp: 2317-2336

Huang MY, Fu TT (2013). An Examination of the Cost efficiency of banks in Taiwan and China using the metafrontier cost function. *J Prod Anal* 40, pp:387–406

Kaminsky, Graciela, Saul Lizondo, and Carmen Reinhart (2008). Leading Indicators of Currency Crises. International Monetary Fund Staff Papers, 45, March, 1-48

Kaminsky, Graciela L. and Carmen M. Reinhart, (2009). The Twin Crises: The Causes of Banking and Balance of Payments Problems. *American Economic Review*, 89(3), pp: 473–500

Khan, Z., Ferguson, D., and Pérez, A. (2015). Customer Responses to CSR in The Pakistani Banking Industry. *International Journal of Bank Marketing*, Vol. 33(4): 471-493

Koju, Laxmi, Ram Koju, Shouyang Wang. (2018). Macroeconomic and Bank-Specific Determinants of Non-Performing Loans: Evidence from Nepalese Banking System, *Journal of Central Banking Theory and Practice*, 3, pp. 111-138

Krugman, Paul (2000). A Model of Balance of Payments Crises. *Journal of Money, Credit and Banking*, 11, pp: 311—25

Kumar, Manmohan, Uma Moorthy, and William Perraudin (2008). Determinants of Emerging Market Currency Crises and Contagion Effects. paper presented at *CEPR/World Bank Conference*. Financial Crises: Contagion and Market Volatility, London, May 8-9

Lepetit, L., Nys, E., Rous, P., Tarazi, A., 2008. Bank Income Structure and Risk: An Empirical Analysis of European banks. *Journal of Banking and Finance,* 32(8), pp: 1452–1467

Leeungan, M., & Turban, E. (2015). A Trust Model for Consumer Internet Shopping. *International Journal of Electronic Commerce*, 6, pp: 75-91.

Lepetita, Laetitia & Strobel. (2015). Bank Insolvency Risk and Time-Varying Z-Score Measures *Journal of International Financial Markets, Institutions & Money,* 25, pp. 73-87

Mahran, Hatim Ameer, (2012). Financial Intermediation and Economic Growth in Saudi Arabia: An Empirical Analysis, 1968- 2010. *Journal Modern Economy,* 3(5), pp. 626-640

Minsky, H.P., (2000)*, Stabilizing an Unstable Economy*, New Haven, CT: Yale University Press

Mishkin, Frederic S. (1997). *The Economics of Money, Banking, and Financial Markets*. Pearson International Edition, 8th edition

Mishkin & Eakins, (2006). Financial Market & Institutions, Chicago: Richard D. Irwin

Moreno, Luis (2005). The Europeanization of Welfare: Paradigm shifts and social policy reforms, in Taylor-Gooby, Peter (ed.), *Ideas and Welfare State Reform in Western Europe*, pp. 145-175. New York: Palgrave Macmillan

Moreno, Ramon (2009). *Was There a Boom in Money and Credit Prior to East Asia's Recent Currency Crisis?* Federal Reserve Bank of San Francisco Economic Review No. 1

Noman, Abu Hanifa Md., Mustafa Manir Chowdhury, Najmeen Jahan Chowdhury, Mohammad Jonaed Kabir, and Sajeda Pervin. (2015). The Effect of Bank Specific and Macroeconomic Determinants of Banking Profitability: A Study on Bangladesh. *International Journal of Business and Management* 10: pp: 287–97.

Nouaili, M., Abaoub, Ezzeddine & Ochi, A. (2015). The Determinants of Banking Performance in Front of Financial Changes: Case of Trade Banks in Tunisia. *International Journal of Economics and Financial Issues*, 5(2).

Poudel, R.P.S. (2012). The impact of credit risk management on financial performance of commercial banks in Nepal. *International Journal of Arts and Commerce*, 1(5), pp: 9-15

Rose, Peter, S., (2002). *Commercial Bank Management*. Chicago: Richard D. Irwin, Inc

Roy, A. D. (1952). Safety First and the Holding of Assets. *Econometrica*, 20(3), pp: 431-449

Rivai, V., & Ismal, R. (2007). *Islamic Risk Management for Islamic* Bank. Jakarta: Gramedia Pustaka Utama.

Riyanto, (1998) *Dasar-dasar Pembelanjaan Perusahaan,* Yayasan Badan Penerbit Gadjah Mada, Edisi 4, Yogyakarta

Saba, I., Ashraf, H. M. W., Kouser, R. (2017) Impact of Basel III framework on financial distress: A case study of Pakistan. *Journal of Accounting and Finance in Emerging Economies, 3*(1), pp: 1-22

Salas, V., Saurina, J., (2003). Deregulation, Market Power and Risk Behavior in Spanish Banks. *European Economic Review,* 47, 1061–1075.

Taherinia, Masoud & Baqeri, Alirahm (2018). The Effect of Capital Adequacy Ratio on the Ratio of the Bank Reserves Accepted in the Tehran Stock Exchange. *International Journal of Economics and Financial Issue*s, *Econjournals*, 8(1), pp. 161-167.

Yahaya, S., Hamid, I. A., Fauzi, A., Idris, B., & Haji-Othman, Y. (2016). Adoption of Islamic banking products and services in Nigeria: An application of Diffusion of Innovation theory. *Science and Technology*, 2, 264-273

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 231-244
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.359

The Impact of Human Capital Underutilization on Productivity and Economic Growth in Egypt

Eman Ahmed Hashem[1]

[1] Associate Professor of Economics- Faculty of Business- Ain Shams University.
Email: emyhashem2004@yahoo.com / dr.emanhashem@bus.asu.edu.eg

Abstract
This study estimates the effects of human capital underutilization on economic growth and productivity. This paper investigated the relationship between underutilization of human capital and economic growth using a variety of econometric tests like the Augmented Dickey Fuller test, the Johansen Integration test, and the ARDL model. The results indicate that, there is a negative relationship between human capital underutilization and economic growth. The results indicate that underutilization of human capital has a greater long-term impact on economic growth than it does in the short run. Reforms to education and training systems are required in order to maximise human capital utilisation and thus increase productivity and economic growth.

Keywords: Egypt, Human capital, Underutilization

1. Introduction

One of the most problems facing developing countries and hinder economic growth is the underutilization of human capital. Human capital underutilization indicates that resources are not being used efficiently. So, better utilization of human capital is considered as one of the most important targets of any country's economic plan. Several economic literatures assesses the validity of Okun's law, which indicates that there is a strong relationship between economic growth and unemployment. Okun's law proved that unemployment is inversely related to economic growth (IMF, 2012: 4).

However, avoiding unemployment is not sufficient; there are other types of labour underutilization. Human capital underutilization refers to the mismatch between labour supply and labour demand. Unemployment is commonly used as the only indicator of labour underutilization, but this only provides a partial picture of labour underutilization. There are other types of labour underutilization, such as time-related underemployment, which includes employees who want to work more hours or have worked less than a specified number of hours during a short reference period (ILO, 2018: 2). In addition, there is labour underutilization in qualitative terms, which means that workers are overqualified for the jobs they have. In addition to those outside the labour force who stop their job search or who are not immediately available but want a job in the future.

In many developing countries, a sizable proportion of the population is unemployed or working in jobs that do not allow them to fully utilise their skills to increase productivity. As a result, underutilization of human capital has an impact on productivity and economic growth (Steven Pennings, 2020: 3-4). Most studies concentrated on the relationship between unemployment and economic growth, ignoring other types of underutilization. As a result, in this study, we examine the relationship between different types of human capital underutilization and economic growth.

2. Literature Review

Several studies tried to examine the empirical relationship between economic growth (output) and unemployment. There are two points of views, first one found that economic growth has a significant negative impact on unemployment in Egypt (validity of Okun's law) as in (Khaliq s. petal, 2014). This study examines the relationship between unemployment and GDP growth in nine Arab countries [Algeria, Egypt, Tunisia, Sudan, Morocco, Lebanon, Palestine, Syria, and Jordan] using pooled EGLS over 16 years old (from1994-2010).

The result of this study found that economic growth has a negative and significant impact on the unemployment rate, with a 1% increase in economic growth resulting in a 0.16 percent decrease in the unemployment rate. Hany Elshamy (2013) This paper examined Okun's coefficient in Egypt from 1970 to 2010 by using co-integration analysis to estimate Okun's coefficient in the long run and the error correction mechanism (ECM) in the short run. This study found that Okun's law in Egypt had a statistically significant coefficient with the expected sign in both the long and short run (World Bank, 2014). This study assesses the relationship between economic growth and unemployment in Egypt using quarterly data from 2003 qi to 2013 qi. This study found significant negative correction between GDP growth rate and unemployment rate for all labours, but especially for women.

The relationship is no longer statistically significant when the sample is limited to men; however, the results show that a 1% increase in year-to-year GDP growth is associated with a 5.8 percent decrease in female unemployment.
On the other hand there are other studies that found the invalidity of Okun's law in the Egyptian economy like Moosa (2008), This paper investigated the validity of Okun's law in four Arab Countries (Egypt, Morocco, Algeria and Tunisia) for the period (1990 – 2005).

The study found that the Okun's coefficient is -0.011 in Algeria, 0.001 in Egypt, -0.00009 in Morocco, and 0.001 in Tunisia. As a result of the findings of this study, which indicate that unemployment and output are unrelated in the four countries. Also (Fouzia Mohmed et al, 2015), this study assessed the relationship between unemployment and growth rate in Egypt from 2006 Q1 to 2013 Q2 using the ADF unit root test, the standard Granger Causality test and the Johansen Co-integration test. The findings indicated that there was no co-integration relationship between output (GDP) and unemployment, which indicates that there is no long-term relationship between the economic growth and unemployment rate. From the above we noticed that previous studies concentrated on the relationship between economic growth and unemployment through examine the validity of okun's law. But in this paper, we examine the relationship between different forms of human capital underutilization and economic growth.

3. Okun's law and its validity

3.1 Okun's law

Okun's law explains the relationship between output and unemployment. Shifts in aggregate demand, according to Okun's law, causing output to fluctuate around potential. These outputs causing firms to hire and fire employees, causing the employment rate to shift in the opposite direction. These connections can be expressed as

$$E_t - E_t^* = \gamma(y_t - y_t^*) + \phi_t \,, \gamma > 0 \qquad (1)$$

$$U_t - U_t^* = \sigma(E_t - E_t^*) + \mu_t \,, \sigma > 0 \qquad (2)$$

Where: -
$\boldsymbol{E_t}$ log of employment
$\boldsymbol{y_t}$ log of output
$\boldsymbol{U_t}$ unemployment rate

Then substitute (1) into (2)

$$\boldsymbol{U_t - U_t^* = \beta(y_t - y_t^*) + \varepsilon_t}\,, \boldsymbol{\beta < 0} \qquad \textbf{(3)}$$

Okun's law can be estimated in two ways.

First way:
To estimate the changes in unemployment based on the changes in log real GDP, where beta can be considered as a simple correction for changes in unemployment and output, do the following.

$$\boldsymbol{\Delta U_t = \alpha^d + \beta^d \Delta y_t + e_t^d} \qquad \textbf{(4)}$$

Second Way:
The output gap and model deviations from full employment (IMF,2012:3-4)

$$\boldsymbol{U_t = \alpha^g + \beta^g (y_t - y_t^*)}$$

3.2 Validity of Okun's law in developed and developing countrie:

Some studies, such as (Zidong An et al., 2017), (ILO, 2019), and (IMF, 2017), investigated the validity of Okun's law in developing countries and discovered that okun's law is less valid in developing countries, particularly low-income countries, than in developed countries. There are some factors that can explain why developing countries have lower okun's coefficient values than developed countries.

3.2.1 Economic structure: An important factor in determining the validity of Okun's law is economic structure. The inverse relationship between economic growth and unemployment is more pronounced in the service sector. Large movements in employment would be observed in the service sector or a service-oriented economy. While economies that rely largely on agriculture and have a higher rate of self-employment would see more price adjustment than employment growth (ILO, 2019: 32).

3.2.2 Informal sector: The size of the informal sector is another variable that could influence how labour markets respond to economic growth. The magnitude of Okun's coefficient decreases as the share of informal employment increases (Zidong An, 2017:18).

3.2.3 Labor market flexibility: Countries with more flexible labour markets are more likely to have more responsive labour markets (An, Zidong, 2017). Increased business regulation slows the hiring and firing process, reducing the labour market's responsiveness to fluctuations in output. As a result, higher levels of business regulation are associated with weaker labor market responses (IMF, 2017:22).

4. Measurements of Human Capital

4.1 Human Capital Index (HCI)

The HCI is intended to assess how current health conditions and education outcomes influence the next generation's labour productivity.

4.1.1 Components of Human Capital Index

1) Survival till school age, which measured by under 5 years mortality rates.
2) Expected years of schooling adjusted by measurements for the quantity and quality of education.

- **The quantity of education** Based on the current pattern of enrollment rates across grades, the number of school years a child can expect to end by the age of 18 is measured.
- **The quality of education** is measured according to the World Bank's efforts to harmonize test scores for the major international student accomplishment testing programs.

The adjusted years of schooling (LAYS)

$$\mathbf{LAYS_c = S_c \times R_c^n}$$

Where: -

$\mathbf{S_c}$ **:** a measure of the average number of years of schooling obtained by a relevant cohort of country C's population

$\mathbf{R_c^n}$ **:** Learning assessment using a numeraire for a relevant cohort of students in Country c (or benchmark)

$$\mathbf{LAYS_c = EYS_c \times \frac{HTS}{625}}$$

3) Health: measured by two indicators; Adult survival rates (represent by 15 years old who survive for age 60 and the stunting rate of children under 5 years

4.1.2 Aggregation methodology of HCI

The HCI components are combined into a single index after they have been converted into productivity contributions relative to a guidelines of complete education and complete health

$$\mathbf{HCI = Survival \times School \times Health}$$

$$\boldsymbol{Survival = \frac{1 - under\ 5\ mortality\ rate}{1}}$$

$$\boldsymbol{School = e^{\emptyset}(expected\ years\ of\ school \times \frac{Harmonized\ test\ score}{625} - 14)}$$

$$\mathbf{Health = e(\gamma_{ASR} \times (Adult\ survival\ rate - 1) + \gamma_{stunting} \times (not\ stunded\ rate - 1)/2}$$

The resulting index has a value between 0 and 1. So, a score of 0.70 indicates that a child born today's productivity as a future worker is 30% lower than what could have been accomplished by complete education and total health. (world Bank,2020:2-6)

4.2 The utilization adjusts Human Capital Index (UHCI)

The HCI (Human Capital Index) iindicatesthe amount of human capital that a child can be expected to accumulate by the age of 18 , taken into consideration the risks of poor health and education in his country. As a result, it assesses how changes in health and education affect the next generation of workers' productivity. HCI assumes that when today's child grows up and becomes a future worker, he will be able to find work. which may

not be correct, particularly in developing countries. In many developing countries, a sizable proportion of the population is unemployed or working in jobs that do not allow them to fully utilise their skills. Human capital underutilization is a problem in developing countries (World Bank, 2020: 109). The utilization adjusted human capital index (UHCIs) correct the HCI labour market underutilization of human capital according to the proportion of the working-age population employed or in jobs where their skills and abilities can be better used to increase productivity. So, The UHCIs are intended to supplement the HCI.

$$\text{UHCI (basic or full)} = \text{utilization rate (basic or full)} \times \text{HCI}$$

- **Basic UHCI :** Captures the income gains from employing all potential [unemployed] workers.
- **Full UHCI:** Gains from increased employment rates + Gains from relocating workers to locations where they can better utilization of their human capital to increase productivity [better employment].

$$\textbf{Utilization (basic measure)} = \frac{\textbf{Employment}}{\textbf{Working Age population}}$$

$$\textbf{Utilization (Full measure)} = \textbf{BER} \times \mathbf{1} + (\mathbf{1} - \boldsymbol{BER}) \times \frac{\boldsymbol{minimum\ HCI}}{\boldsymbol{HCI}}$$

$$\textbf{BER (Better employment rate)} = \frac{\boldsymbol{non\ agriculture\ wage\ employees} + \boldsymbol{employers}}{\boldsymbol{population\ working\ age}}$$

Better employment rate: as the proportion of the working-age population in better employment

$$\textbf{UHCI (full measure)} = \textbf{BER} \times \textbf{HCI} + (\mathbf{1} - \textbf{BER}) \times (\textbf{minimum HCI})$$

The world bank examined utilization measures for more than 160 countries and found that GDP per Capital will be $\frac{1}{\text{UHCI}}$ higher in a world of full utilization total health and complete education (Steven Pennings, 2020: 3-4).

5. Human capital underutilization in Egypt

5.1 Human Capital in Egypt

Between 2010 to 202, the HCI value for Egypt increased from 0.48 to 0.49.

Table 1: HCI in Egypt 2020

	Boys	Girls	Overall
HCI	0.48	0.51	0.49
Survival to Age	0.98	0.98	0.98
Expected years of school	11.4	11.6	11.5
Harmonized test scores	344	368	356
Learning adjust years of school	6.3	6.8	6.5
Adult survival rate	0.82	0.90	0.86
Not stunted rate	0.76	0.79	0.78
HCI Ratio (Richest/ poorest 20 percent)			1.27

Source: World Bank Database

The value 0.49 indicates that a child born in Egypt today will be only 49% as productive when he reaches the age of 18 as he could be if he received a good education and was in full health.

5.2 Problems Facing human capital in Egypt

5.2.1 Unemployment in Egypt

Table 2: unemployment in Egypt (2004 – 2019) unit 000

Indicator	2004	2009	2014	2019
Labor Force				
Total	**20871**	**25353**	**27944**	**28348**
Males	**15879**	**19410**	**21315**	**23255**
Females	**4992**	**5943**	**6629**	**2093**
Employed				
Total	**18718**	**22975**	**24299**	**26123**
Males	**14937**	**18397**	**19264**	**22133**
Females	**3781**	**4578**	**5035**	**3990**
Unemployed				
Total	**2154**	**2378**	**3646**	**2226**
Males	**934**	**1013**	**2052**	**1122**
Females	**1211**	**1365**	**1594**	**1103**
Unemployment rate (%)				
Total	**10.3**	**9.4**	**13**	**7.9**
Males	**5.9**	**5.2**	**9.6**	**4.8**
Females	**24.3**	**23.0**	**24.0**	**21.7**

Source: CAMPAS

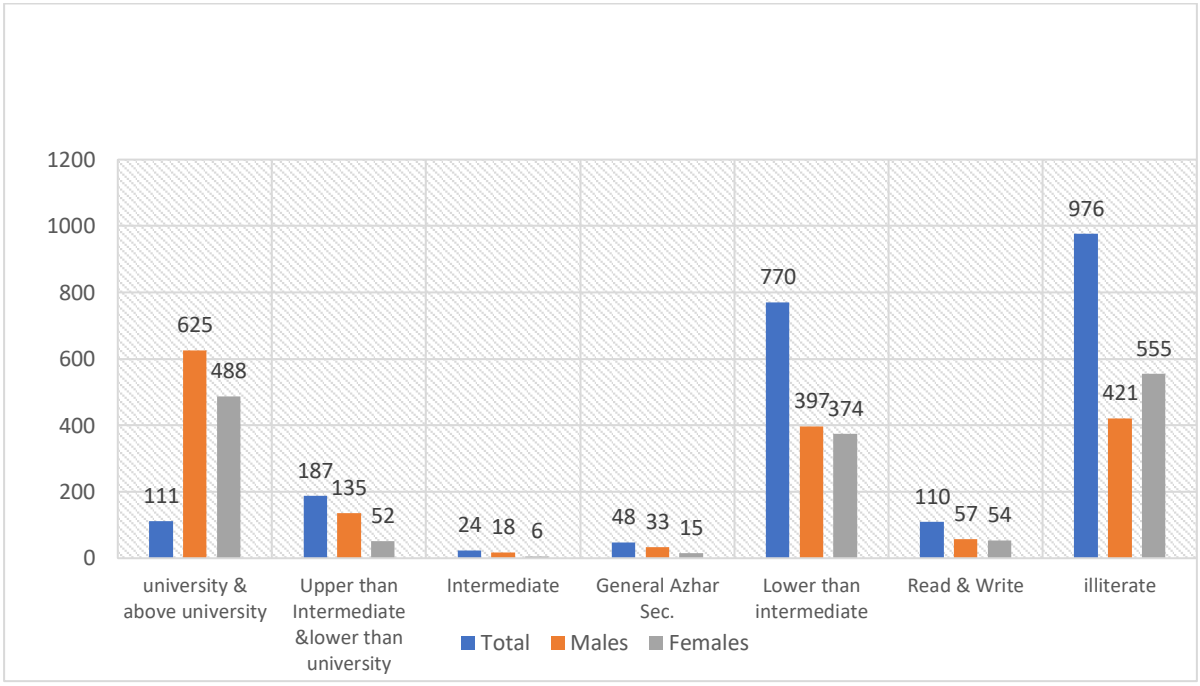


Figure 1: Distribution of unemployed by Educational status & sex in Egypt 2019

Source: CAMPAS

From above, we found that:

- In Egypt, unemployed rate increased from 10.3% in 2004 to 13% in 2014 and then decreased to 7.9 in 2019.
- The majority of unemployed people are young people aged 15 to 29, who are new entrants to the labour

market and are looking for work for the first time.

- Female unemployment is approximately five times that of male unemployment. The unemployment rate in 2019 was 7.9 percent [4.8 percent for men and 21.7 percent for women].
- The main problem facing Egypt's labour market is a mismatch between the educational system and the labour market. This is reflected in the relatively high unemployment rates among graduates of higher education.
- In 2019, the unemployment rate for those with a bachelor's degree or higher was 16.7 percent [10.5 percent for males and 29.9 percent for females], while it was 2.2 percent (15 percent for males and 5.2 percent for females) among illiterates.
- For the distribution of employment by economic activity, we observed that construction had the highest percentage increase in employment, reaching 26.8 percent in 2019. While employment in the agriculture sector fell by 2.8 percent. In 2019, the sector employed 23.2 percent of the workforce.
- About the geographic distribution of unemployment. There are significant disparities between urban and rural areas, with urban areas accounting for a greater proportion of unemployed people than rural areas.
- The most governorates have high unemployment rate in 2019 was: Damietta 21.1%, North Sinai 15.6% Red sea 14.8% and port said 12.7%. While the governorates that has low unemployment, rate was fayom 3.5%, Menia 4.6%, Qena 4.8%, Suhag 5.1% and Beniseuf 5.2%.

5.2.2 Underutilization in Egypt

- The unemployment rate focuses on a very specific population (the unemployed) while ignoring those who are employed or are not in the labour force.
- The unemployment rate is only one component of labour underutilization; there is also unused labour supply among those who are employed (but would like to work more hours than they do) and those who are not employed (Having given up on the job search or not being immediately available but desiring a job in the future). There is also qualitative labour underutilization caused by a skills mismatch, in which employees are overqualified for the jobs they have.

Other than the unemployment rate, we have more indicators to measure underutilization.

$$\mathbf{LU2} = \frac{\boldsymbol{unemployd + Time\ Related\ underemployment}}{\boldsymbol{labor\ force}}$$

People in Time Related Underemployment can defined as all employees who wanted to work more hours during a short reference period, whose total Working hours was less than a specified number of hours , and who were willing to work more hours if given the opportunity.

$$\mathbf{LU3} = \frac{\boldsymbol{unemployd + potential\ labor\ force}}{\boldsymbol{labor\ force + potential\ labor\ force}}$$

The potential labour force consists of two categories first people of working age who are actively looking for work, who were not available to start work immediately but will be available soon, second, who were not actively looking for work but wanted to work and were available soon (available potential jobseekers) (ILO,2020:6).

$$\mathbf{LU4} = \frac{\mathbf{unemployd + potential\ labor\ force + time\ related\ underemployment}}{\mathbf{labor\ force + potential\ labor\ force}}$$

Table 3: Underutilization in Egypt (2010 – 2019)

Year	LU2	LU3	LU4
2010	10.2	17.5	18.7
2011	13.4	21	22.4
2012	14.2	21.7	23.2

2013	**14.9**	**22.3**	**23.8**
2014	**14.8**	**22.2**	**23.8**
2015	**14.7**	**22.4**	**23.9**
2016	**14.1**	**21.7**	**23.2**
2017	**13.4**	**21.2**	**22.7**
2018	**10.9**	**19.2**	**20.2**
2019	**10.8**	**19.1**	**20.1**

Source: ILO Stat.

- For LU2, we found that the youth labor underutilization (15 – 24) LU2 was high 32.1% in 2019. It increased between 2010 and 2019 (From 29.4 to 32.1 percent). Youth labour underutilization was particularly high among young women. In 2019, female labour underutilization LU2 was 54.5 percent. Despite the fact that it was 25.1 percent among males.
- In 2019, youth labour underutilization (15–25) was 45 percent for LU3. It grew between 2010 and 2019. (40.3 to 45 percent)..Female youth labour underutilization (LU3) was more than double that of males.
- In 2019, females had a LU2 of 75.3 percent, while males had a LU2 of 29.9 percent. We also discovered that the LU3 rate was low in the high age group (+25), with 10.3 percent in 2010 and 14 percent in 2019.
- The composite rate of labour underutilization in LU4 increased from 18.7 percent in 2010 to 20.1 percent in 2019. In terms of geographical distribution disparities in labour underutilization, the rate in urban areas is higher than in rural areas. 39.7 percent live in cities, while 23.7 percent live in rural areas.In 2019, the youth labour underutilization rate (15–24) LU4was 49.2 percent [75.9 percent for females and 35.8 percent for males].
- LU4 for females was 41.4 percent in 2019 [49.2 percent in urban & 33.9 percent in rural] and increased to 75.9 percent for youth females [79.4 percent in urban & 72 percent in rural] and decreased to 31.4 percent for 25+ females [39.7 percent in urban & 23.7 percent in rural].

5.3 The Impacts of covid 19 on Human capital in Egypt

In 2020, 8.8 % of total working hours all over the world were lost compared to the fourth quarter of 2019. This translates into 225 million full-time positions. In 2020, working-hour losses will be roughly four times higher than they were in 2009, during the global financial crisis. Global employment fell by 114 million jobs in 2020 compared to 2019. In relative terms, women lost more jobs (5%) than men, and young workers (8.7%) lost more jobs than older workers. Total labour income all over the world is expected to fall by 8.3 percent in 2020, amounting to US$ 3.7 trillion, or 4.4 percent of total GDP (ILO stat).

Table 4: The impact of covid 19 on employment in Egypt

	Second quarter 2019	Second quarter 2020	change
Employment rate (%)	38.8	35.1	↓
Number of unemployed (000)	2094	2574	↑
Labor force (000)	28069	26689	↓
Unemployment rate	7.5	9.6	↑
Males	4.2	8.5	↑
Females	22.3	16.2	↓

Source: CAMPAS

The employment rate fell from 38.8 percent in the second quarter of 2019 to 35.1 percent in the second quarter of 2020. As a result of the crisis, the unemployment rate increased to 9.6 % in the second quarter of 2020. Unemployment rates by gender, we can see that the gender disparity in the unemployed has downsized from five

to one. This could be attributed to a high proportion of female participation in essential services such as education and health care.

According to ILO estimates, working hours lost in Egypt as a result of the Covid 19 crisis will be 9.5 percent in 2020. (total weekly hours worked of employed decreased from 1222641.3 in 2019 to 1126411.2 in 2020). In terms of full-time jobs, the loss is 2972 thousand jobs based on 40 hours per week and 2476.7 thousands jobs based on 48 hours per week (ILO estimate stat).

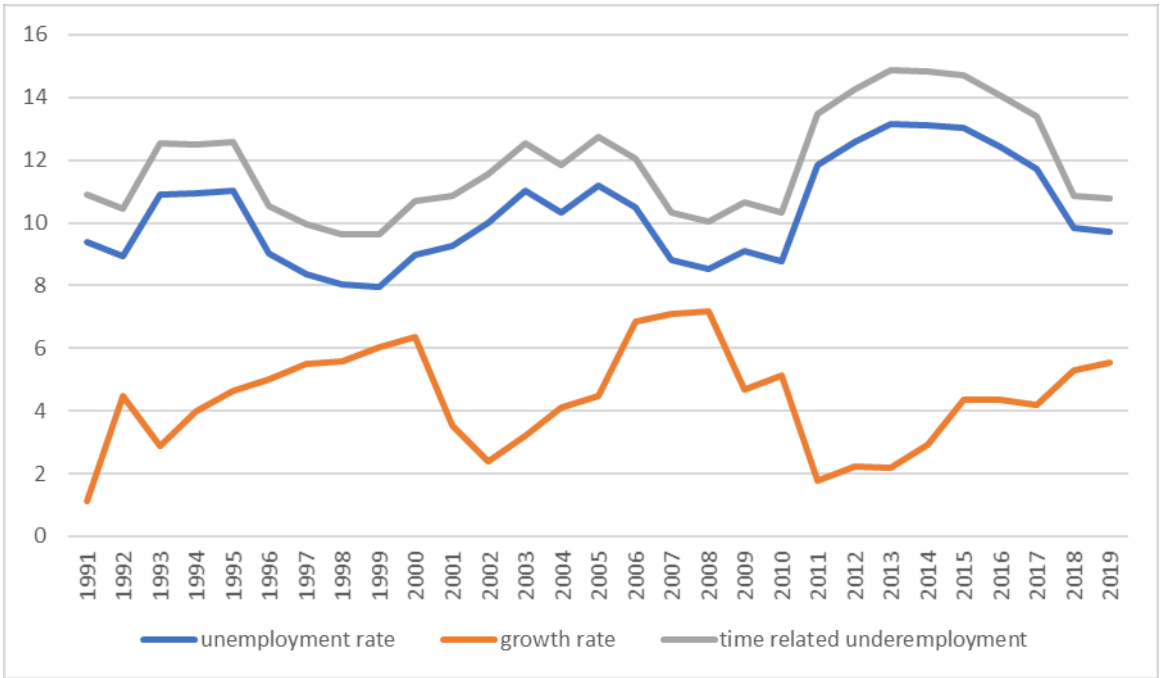


Figure 2: Relationship between underutilization and Economic growth in Egypt (1991-2019)

Source: CAMPAS & world bank database

It should be noted that The rate of real economic growth fluctuates a lot. between 1991 and 2011. This can be due to local and global economic and political changes. The annual rate of economic growth has risen from 1.13 percent in 1991 to 5.56 percent in 2019. The global financial crisis has had a negative impact on the Egyptian economy, causing the GDP growth rate to fall from 7.16 percent in 2008 to 4.67 percent in 2009. This was offset by an increase in the unemployment rate, which rose from 8.52 percent in 2008 to 9.09 percent in 2009. In 2011,Political instability in Egypt resulted in a significant decrease in GDP growth rate in 2011, from 5.15 percent in 2010 to 1.76 percent However, this was offset by an increase in the unemployment rate from 8.76 percent in 2010 to 11.85 percent in 2011.

6. Estimate the relationship between underutilization of human capital and economic growth in Egypt

6.1 Augmented Dickey fuller & Johansen Integration Tests

The aim of this study is to see if there is a link between underutilization of human capital, productivity, and economic growth in Egypt using a diverse range of econometric tests like the Augmented Dickey Fuller test, the Johansen Integration test, and the ARDL model. The first step is to determine if time series are stationary or non-stationary. There are several tests, one of the most important and widely used being the Augmented Dickey Fuller test (ADF)

Table 5: Results of Augmented Dickey Fuller Test

Variable	Level			First Difference		
	Intercept	Intercept &Trend	None	Intercept	Intercept &Trend	None
GDP	-3.56	-3.5	-0.36	-6.1	-5.97	-6.27

	(0.014)**	(0.05)*	(0.54)	(0.000)***	(0.000)***	(0.000)***
UR	-2.82 (0.07)*	-4.54 (0.06)*	-0.2 (0.6)	-4.3 (0.002)***	-4.3 (0.017)**	-4.4 (0.000)***
EAG	-1.046 (0.72)	-1.6 (0.76)	-1.79 (0.07)*	-5.04 (0.004)***	-4.95 (0.002)***	-4.7 (0.000)***
LP	2.4 (0.9)	0.26 (0.9)	6.6 (1.00)	-4.3 (0.002)***	-5.1 (0.001)***	-2.2 (0.02)**
TU	-2.8 (0.05)*	-4.3 (0.01)**	-0.26 (0.5)	-4.37 (0.00)***	-4.37 (0.00)***	-4.46 (0.00)***

From Table (5) we can say that with using 5% significance level GDP stationary at level while all other variables are stationary at first difference.

Table 6: Johansen Integration Test (Trace Eigenvalue Statistic)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.791176	97.84039	60.06141	0.0000
At most 1 *	0.697726	57.11755	40.17493	0.0005
At most 2 *	0.563983	26.01061	24.27596	0.0299
At most 3	0.144330	4.428674	12.32090	0.6489
At most 4	0.014359	0.376053	4.129906	0.6028

Table (7): Johansen Integration Test (Maximum Eigenvalue Test)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.791176	40.72284	30.43961	0.0019
At most 1 *	0.697726	31.10693	24.15921	0.0049
At most 2 *	0.563983	21.58194	17.79730	0.0128
At most 3	0.144330	4.052622	11.22480	0.6200
At most 4	0.014359	0.376053	4.129906	0.6028

Tables (6) and (7) show the results of the Johansen Method for the Trace and Maximum Eigenvalue tests indicate that at the 0.05 level of significance there is three cointegrating egn(s). Thus, these findings confirm the presence of a long term relationship between those variables.

6.2 ARDL model

Because some variables are stationary in level and others are stationary in first difference. Then, we can utilize ARDL model

6.2.1 First: the impacts of underutilization of human capital on economic growth.

Table 8: ARDL model estimates for GDP

Variable	Coefficient	t-Statistic	Prob.*
GDP(-1)	0.782138	2.359929	0.0361
GDP(-2)	-0.298271	-1.113961	0.2871
EAG	-0.024542	-0.224048	0.8265
EAG(-1)	-0.118102	-1.236348	0.2400

EAG(-2)	0.138269	1.857163	0.0880
LP	0.260306	0.125817	0.9020
LP(-2)	6.391586	2.521801	0.0268
TU	-0.686881	-0.437029	0.6699
UR	-0.197042	-0.109118	0.9149
UR(-2)	-0.922091	-2.453603	0.0304
C	3.989925	1.096089	0.2946
R-squared	0.874776		
Adjusted R-squared	0.739117		
S.E. of regression	0.777159		
Sum squared resid	7.247706		
Log likelihood	-20.28605		
F-statistic	6.448350		
Prob(F-statistic)	0.001368		

ARDL estimates indicate that GDP is significantly positively affected by the second lag of employment in agriculture sector, the first and second lag of labor productivity. Unemployment rate. Table (8) indicates that if over the long run, if Unemployment decrease by 1% GDP will significantly increase with 0.92%. Also, if time related unemployment decrease by 1% GDP will increase with 0.68%. in addition, if employment in agriculture decease by 1% and labor go for industry or service sector will increase GDP by 0.12% (but this insignificant)

Table 9: ECM Regression for GDP

Variable	Coefficient	t-Statistic	Prob.	
D(GDP(-1))	0.298271	1.776834	0.1009	
D(EAG)	-0.024542	-0.358053	0.7265	
D(EAG(-1))	-0.138269	-2.459604	0.0301	
D(LP)	0.260306	0.254906	0.8031	
D(LP(-1))	-6.391586	-5.919368	0.0001	
D(UR)	-0.197042	-0.826421	0.4247	
D(UR(-1))	0.326771	1.742643	0.1069	
D(UR(-2))	-0.595320	-3.248634	0.0070	
CointEq(-1)*	-0.516134	-4.490898	0.0007	
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	2.372726	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

The short run relationship shows that the relation is stable as the cointegration components equal to -0.516 then it is negative less than one and significant. The changes in GDP in significantly affected by changes in employment in agriculture sector, labor productivity and the second lag of unemployment rate. Moreover, F-Bound Test indicates that there is a level relationship at I(0) with significant level 10%. Table (9) indicates that if over the short run, if Unemployment decrease by 1% GDP will significantly increase with 0.595%. However, there is no significant effect for time related unemployment on GDP.

6.2.2 Second: the Impacts of underutilization of human capital on labor productivity

Table 10: ARDL model estimates for Labor productivity

Variable	Coefficient	t-Statistic	Prob.*
LP(-1)	0.158003	0.630628	0.5412
LP(-2)	1.022879	3.000812	0.0121
LP(-3)	-0.294420	-1.325583	0.2118
GDP	0.016320	0.558278	0.5878
GDP(-1)	0.117437	2.916714	0.0140
GDP(-2)	-0.002117	-0.059309	0.9538
GDP(-3)	0.050245	2.232124	0.0473
EAG	-0.036966	-3.796562	0.0030
EAG(-1)	0.012768	1.151896	0.2738
TU	-0.326034	-1.747973	0.1083
TU(-1)	0.030165	0.624520	0.5450
TU(-2)	-0.077871	-1.437482	0.1784
TU(-3)	0.130687	3.455189	0.0054
UR	0.472541	2.330039	0.0399
C	-0.811832	-1.617349	0.1341
R-squared	0.997950		
Adjusted R-squared	0.995341		
S.E. of regression	0.090222		
Sum squared resid	0.089540		
Log likelihood	36.83281		
F-statistic	382.4572		
Prob(F-statistic)	0.000000		

ARDL estimates show that labor productivity is significantly affected by, GDP, unemployment, and Time related unemployment. In long run , if unemployment decrease by 1% labor productivity will increase by 0.47%. also, if time related unemployment decrease by 1% labor productivity will increase by 0.078%

Table11: ECM Regression for Labor productivity

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	t-Statistic	Prob.
D(LP(-1))	-0.728459	-4.173310	0.0016
D(LP(-2))	0.294420	2.104478	0.0591
D(GDP)	0.016320	0.966532	0.3545
D(GDP(-1))	-0.048129	-1.703738	0.1165
D(GDP(-2))	-0.050245	-3.246332	0.0078
D(EAG)	-0.036966	-4.966141	0.0004
D(TU)	-0.326034	-5.308559	0.0002
D(TU(-1))	-0.052816	-2.174709	0.0523
D(TU(-2))	-0.130687	-5.092222	0.0003
CointEq(-1)*	-0.113538	-7.389199	0.0000

* p-value incompatible with t-Bounds distribution.

F-Bounds Test Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.256280	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

The short run relationship shows that the relation is stable as the cointegration components equal to -0.11 then it is negative less than one and significant. The changes in labor productivity in significantly affected by changes in its lag, changes in GDP, changes in agriculture sector, time related unemployment.

7. Conclusion

This paper examines the effects of human capital underutilization on economic growth and productivity. The study relies on annual data from 1991 to 2019. According to the findings, there is a negative relationship between human capital underutilization and economic growth. In the short run, if unemployment falls by 1%, GDP rises by 0.595 percent, but in the long run, other forms of underutilization (such as time-related unemployment) will have an impact on economic growth.

As a result, the long-run effects of underutilization of human capital on economic growth exceed the short-run effects. People and their abilities are viewed as an important means and instrument for achieving economic, social, and political goals. As a result, better utilisation of human capital is regarded as one of the most important goals of any country's economic policy. The main challenge facing utilization of human capital in Egypt is the weak link between education outputs and labor markets needs. As a result, adequate and convenient education and training are required. In addition to some labour market flexibility in order to increase employment, which increases productivity and economic growth.

References

Fauzeia Mohamed &etal (2015), short and long term relationship between Economic growth and unemployment in Egypt: An Empirical analysis, Mediterranean Journal of social science, vol 6 no. 453, pp 454-462

Hany ElShamy (2013), The relationship between unemployment and output in Egypt, social and Behavioral sciences 81 (2013) pp. 22- 26

Hendarmin & Metasari Kartika 2019), the relationship between human capital and the regional economy productivity, Journal of Economics and policy, volume 12 (1) pp.138-152

Ibrahim khrais & Mahmoud Alwadi (2016), Economic growth and unemployment relationships: An Empirical study for MENA countries, International Journal of Managerial studies and research, volume 4, Issue 12, pp.19-24

IMF (2012), Okun's law: fit at 50? 13th Jacques polka Annual Research conference, Nov.8-9, 2012

IMF (2017), Growth and Jobs in developing Economies: Trends and cycles, IMF working paper no 17/257

ILO (2019), literature Review of empirical studies on okun's law in Latin America and the Caribbean, employment working paper no.252.

ILO (2020), ILO modelled estimates, metrological overview.

Khaliq s.&etal (2014), The relationship between unemployment and economic growth rate in Arab country, Journal of Economics and sustainable development , vol 5, No.9.

Mona Elsholkamy (2016), Human capital development in Egypt: foreign aid efforts towards sustainable development, International Journal of management and applied science, volume 2, Issue 9, pp.170-175

Moosa , Imad (2008), Economic growth and unemployment in Arab countries: Is okun's law valid ? , Journal of development and economic policies 10(2):7-24

Rasha Qutb (2017), The Impact of human capital attainments on productivity growth an Empirical Investigation, American based Research Journal , volume 6, issue 10, pp.9-23

Steven Pennings (2020), The utilization adjusted human capital Index (UHCI), Background paper, the human capital index 2020 update, world bank, Policy research working paper no. 9375

World bank (2014), Arab Republic of Egypt, More Jobs, better Jobs: a priority for Egypt, Report no. 88447- EG, June 2014

World Bank (2020), The Human capital index 2020 update: human capital in the time of covid 19
Zidong An & etal (2017), okun's law: unfit, for low and lower middle income countries, IMF workshop on global labor market.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 245-252
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.360

Emerging Innovation Risk Management in Financial Institutions of United States

Sharif M. Abu Karsh[1]

[1] Arab American University, Faculty of Administrative and Financial Sciences Email: sharif.abukarsh@aaup.edu

Abstract
Financial institution within the USA is faced with great challenge of risk management, hence the pursuit of every financial institution to come up with better innovative ways of managing risks. However, the emerging innovation in risk management in financial institution has an underlying negative implication which is yet to be studied. The aim of this research was to explore emerging innovation in risk management in financial institutions. The research utilized qualitative research design, through an intensive literature review that involved deep research and reviewing of academic scholarly academic articles. This type of approach ensures that the research includes wide variety of sources that support this research and making it viable for future reference. Results showed that the emerging innovation in risk management in financial institutions is digital financing. Owing to the associated implication of excessive technology use, the research suggests that financial institutions should be very cautious, particularly with the associated risk of cybercrime.

Keywords: Innovation, Risk management, Technology

1. Introduction

Innovation has been the trend in every sector of society due to the dynamic nature of the world, and as such financial institutions are not left behind in terms of innovation. Financial institutions have got a long history in relation to risk (Johnson, 2015,131) management. Since time immemorial, financial institutions have continued to explore better and innovative ways of managing risk. Financial institutions are faced with great challenges of risk management; hence the pursuit of every financial institution is to come up with better innovative ways of managing risks (Johnson, 2015,131). However, the emerging innovation in risk management in financial institutions has an underlying negative implication that is yet to be studied. Research evidence has shown that while financial institutions struggle with many challenges related to risk management, non to date stand to effectively eliminate the challenges (Johnson, 2015,131). This has left financial institutions in a continuous search process to explore more innovations. To note, just but one of the risks, no innovative approach has been effective in the management of cyber risk in the financial institution. The sophisticated use of information technology characterizes the complexity of the risk.

This paper's primary focus is to explore emerging innovations in risk management in financial institutions in the midst of this global controversy of economic crime. There is no doubt that a lot of research is needed through the scientific literature to determine the most effective innovative means of risk management in financial institutions. This paper is divided into five main sections. Part one already has described the background of the research problem and exposed the research interest. The next section contains the research methodology depicting how the research was accomplished. Section three, which is the main section of the research, is comprised of the literature review. Section four of the research contains results and discussion based on the evidence gathered from the literature analysis. The last section of the research is the conclusion and recommendation section based on previous sections.

1.1 Research problem

The intellectual desire that motivates this research is the emerging innovation in risk management in financial institutions. There is an implication that it t has some underlying negative consequences to the performance of financial institutions, subjecting them to great risk. Research evidence has shown that while financial institutions struggle with many challenges related to risk management, non to date stand to effectively eliminate the challenges (Johnson, 2015,131). A lot is currently done to counter this proliferating trend. The use of innovation adds to the risks that financial institutions face when it comes to financial technology and innovations. As financial goods and services in the USA become more dynamic, knowledge asymmetry between suppliers and customers grows, resulting in the transformation of existing types of risks into new ones. This is the problem this research seeks to answer.

2. Methodology

This paper's primary focus is to explore emerging innovations in risk management in financial institutions by reviewing current practices for incorporating and implementing technologies in the context of the economy's deepening technological advancement. The study, therefore, exploited qualitative techniques of data collection, which was accomplished through a desktop review process. The desktop review was accomplished by performing an automated and systematic search of appropriate scholarly academic papers using a variety of search engines, such as Google Scholar, and libraries such as Willy's online library. The study considered papers of diverse nature. However, those with the highest rating were chosen for review. For the sake of inclusivity, both published and unpublished papers restricted to the English language were reviewed. The catchy words that informed the review include innovation, financial institutions, risk and risk management. The keywords were used to find the most relevant papers that formed the final review process references.

3. Literature Review

According to (Johnson, 2015,131), financial institutions face different classes of risks, such as systemic, interest rate, credit, market, strategic, financial, reputational, compliance, operational, and liquidity risks, among other risks. However, these risks' diversity has streamlined efforts by these financial institutions to come up with effective optimal risk management strategies. (Johnson, 2015,131) stated that for financial institutions to manage risks effectively, they need to rely on remote tools like enterprise risk management strategies and minimum capital ratios.

(Schwarcz, 2008, 193). explained the extent to which single consternation or series of consternations may prompt the breakdown of one or more systemically relevant innovative financial institutions. According to (Schwarcz, 2008, 193), mitigating systemic risks poses evident challenges. For instance, the sources of systemic risks should be properly identified to mitigate the risks. Also, regulations relating to financial risk management must be properly tailored to mitigate the peril posed by systemic risks effectively. (Schwarcz, 2008, 193)concludes that institutions need to design and develop effective risk management regulations to ensure competent oversight and regulation.

(Fadun,2013, p. 225). Described Effective Risk Management in innovative financial institutions as the process of managing risks related to firms' operation. Based on this description, institutions maximize opportunities while at the same time minimize perils. According to (Fadun,2013, p. 225), effective risk management is a set of processes that a financial institution or business enterprise undertakes to minimize all types of risks in an integrated manner. Nevertheless, these risks usually have a serious impact on the business organization's profitability, financial performance, and effectiveness.

(Barton, and Walker,2002). Studied the interrelationship among risks and how they are evaluated across all market activities. According to (Barton, and Walker,2002), the reason for risk management in any financial institution is to increase shareholder's value as well as striking a balance between risk management and corporate performance. Additionally, this optimal balance would facilitate a business enterprise to seek its corporate strategy and objectives in the light of financial complexity. Based on (Barton, and Walker,2002)discussions, effective risk management in the innovative finance industry aims at aggregating and integrating all forms of risks by using risk-based mechanisms to mitigate and minimize those risks and report the risk information for better decision making.

(Onafalujo and Eke,2012, pp. 95-101).explain that firms and business enterprises' financial performance are driven by the nature of resources designated to tangible and intangible assets to enhance the firms' sustainability. Also, (Onafalujo and Eke,2012, pp.95-101).asserted that the main reason for measuring institutional financial performance is to assess the firm's progress in achieving financial and non-financial corporate strategies. In this case, the performance of any innovative financial institution is driven by its past events and it has a greater impact on its current and future sustainability. In their discussion, [5] explain the relevance of Enterprise Risk Management (ERM) to business organizations by stating that it helps these organizations to oversee brisk exposure and formulate risk management strategies to mitigate these risks. Therefore, the Enterprise Risk Management framework is intended to achieve the organization's overall performance objective as well as its strategic vision.

(Onafalujo and Eke,2012, pp.95-101). discussed that an effective risk management system helps to minimize the risk associated with innovative financial institutions' activities. According to Planesa (2001), unlike other financial institutions, innovative financial institutions benefit from obtaining external financing, balance sheet liabilities, non-profit lending conditions, and lower loan interest rates. Therefore, when applying innovations and technologies, there is a need to study the issues related to institutional financial services risk management (Demirguc-Kunt, Klapper and Singer,2017).The study further explained that in the context of digital development, the provision of innovative financial services enhances the target of financial inclusion.

(Demirguc-Kunt, Klapper and Singer,2017).asserts that mobile finance and other digital technologies such as Point of Sale services, smart cards, ATMs, and biometric-based identification cards can be integrated. In this case, innovative institutions can use biometric data to verify customer identity during account opening and payment authorization to minimize risks related to account ownership. Therefore, mobile payments can be enriched by these mobile innovations, which to a large extent facilitates social cash transfer as well as providing micro-insurance. According to, the liquidity of firms is therefore improved due to simplified money transfer and the reduction of transaction cost resulting from mobile money innovations. Furthermore, a satisfactory increase in cash flows initiated by mobile money could lead to increased investment. Also, increased investment can result from increases in trade credit as well as other external financing sources aided by mobile money.

Based on (Harelimana, 2017). study on "the effects of integrating computerized systems and digital financial services in Rwanda," reduction in transition costs and enhanced cash flows can also improve liquidity. According to this study, digital financial services enhance profitability and customer satisfaction. Further, this study shows that digital financial services can help individuals and institutions to manage financial risks and stem income shocks resulting from unexpected emergencies. (J. C. C. Jr,2013, p. 1259). affirmed that credit and capital markets are important infrastructure resources around the world. A network of payment systems, exchanges, and clearinghouses enables financial market players to transfer commodities, cash securities, and other assets across countries in seconds. Therefore, technological innovations enable financial institutions to carry out transactions with less cognizance of territorial boundaries.

Further recent research by (Mishchenko, Naumenkova, Mishchenko and Dorofeiev,2021), indicates that financial technologies used in diverse financial institution creates new risk they require constant attention and innovative risk management involve strategy. The study recommends digital strategy as the promising one. The paper concluded that additional collective compensation methods for the risks of innovation and the strengthening of cyber threats are needed to ensure financial institutions' proper operational stability (Mishchenko, Naumenkova, Mishchenko and Dorofeiev,2021), This is a significant finding that informs more about the pitfall of financial technology in enhancing cybercrimes.

3.1 Classification of innovation risk types in financial institutions by individual characteristic

The rise in the provision of digital services, the use of blockchain and artificial intelligence technologies, the widespread use of electronic and mobile money, personalization of financial services, an increase in cyber-attacks, and increased accountability of government regulators in the use of divisive technologies are all characteristics of the current stage of financial services market development (Abu Karsh and Abbadi, 2013). As a result, risk management necessitates a clear classification of risks based on individual characteristics, nature, and level of impact on financial institutions and innovative service consumers' activities. The classification of different types of innovation risks in the financial sector will help with this. (Arévalo, 2021,pp. 145-159). The following are the key classification features: scope, existence, and modes of manifestation, technological complexity, and degree of complexity of cyber-threat security for information systems. See table 1 below.

Table 1: Classification of innovation risk types in financial institution

Classification feature of types of risk	**Characteristics of the type of risk and the level of its impact on the activities of financial institutions and innovative service (product) consumers**
Scope	Impact on the financial sector or the financial system as a whole Impact on the financial institution Impact on specific operations or activities Impact on consumers and customers
Forms of manifestation	Risks associated with the use of certain financial instruments and transactions Risks of remote financial service provision Risks of using agency services Risks of digital presentation of financial products and provision of financial services
Performance	Reducing the number of clients Reducing the volume of services provided Decrease in profits Decreased competitiveness of a financial institution
Technical complexity of innovations	Technical complexity of the perception of innovation by consumers and customers Customers' poor awareness of new technological equipment and software Complexity of the perception of the user interface
Protection level of technical systems and software	Failure of technological equipment Imperfect software Risk of unauthorized access Information risks, fraud, and cyber threats

Source: Developed by the author

3.2 Characteristics of the impact of innovation risks on financial institutions and consumers

The usage of classification noted in 3.2, table 1 allows for the identification of different types of risks as well as the description of their characteristics and level of effect on the operations of financial institutions and users of innovative services and products. Unique areas of risk effect on the activities of financial institutions and financial service customers were defined and listed based on the proposed classification as demonstrated in table 2 below. This information can then be used to measure risks quantitatively and qualitatively, as well as validate management strategies. The use of distributed registers and blockchain technologies is one of the most critical aspects of transforming financial institutions and lowering the risk of innovation. Their benefits include management decentralization, increased transaction reliability and accountability, and instant availability for all participants. Smart contracts, which are a form of computerized protocol (algorithm) for concluding commercial contracts using a cloud service, are made possible by blockchain technology.

Table 2: Characteristics of the impact of innovation risks on financial institutions and consumers

Type of risk	**Characteristics of the impact of risks on**	
	Financial Institutions	**Consumers**
Strategic risk	Wrongly chosen direction of activity, wrong management decisions, inadequate response to changes in the business environment	-
Transformational risk	Changing the governance structure or business model of a financial institution	The need to master new technologies and software
Operational risk	Errors when using new programs, equipment, deliberate actions of employees, equipment failures	Consumer errors when using new programs, devices, or equipment
Information risk	Internal or external events related to information systems, lack of control, inadequate internal processes in information technology	Incomprehensible programs, interfaces, information resources, attempts to mislead a consumer
Reputational risk	Loss of trust in the institution, reduction in the number of customers and market share due to unfavorable perception of the institution's image	Deteriorated service conditions, denial of preferences, unfavorable perception of the financial institution's activities
Cyber threats	A complex type of risk associated with the unauthorized intrusion of third parties into computer and information systems in order to obtain information, deactivate programs and equipment	
Fraud	Illegal actions of attackers to seize funds or information of a financial institution or its customers	
Compliance risks	Failure to comply with legal and regulatory requirements, standards, corporate ethics rules, conflict of interest	-
Risks of access to IT platforms	Inconsistency of actions or terms of an agreement with an IT company, interface complexity, non-compliance of technical conditions	Technical complexity, low access level, user interface complexity
Financial service access risks	Agents' failure to fulfill (improper fulfillment) their contractual obligations to provide remote financial services	Lack of access to financial services, failure by agents to fulfill their obligations
Risk of loss of funds	Unauthorized access to databases and accounts due to technical failures, fraud, and cyber threats	Bankruptcy of an institution, unauthorized access to the account, cyber threats
Technological and technical risks	Failures in the operation of equipment, programs, technical devices, intentional damage and decommissioning of equipment, etc.	

4. Results and Discussion

4.1 Digital platforms

The drivers to transformation within the market environment through innovations are making a great impact in managing risk in financial organizations, and they are becoming more uncertain every day in the USA. In these uncertain and volatile periods, several financial organizations are striving to assess and to understand the impact of new technology in countering various financial management risks linked to cyber-crimes.

For instance, this research has found that several financial institutions in the United States are using digital platforms to revolutionize already relative new technologies in their financial institutions. The hybrid cloud (server/cloud) is used in giving clients both proper accessibility and privacy. Hybrid experience platforms allow the integration of data through real-time intelligence like real-time personalization, advanced analytics, and digitalization.

One of the key transformations that have been achieved by most financial organizations of the USA is the addition of API platform. The API platform gives customers an opportunity to integrate their banking information into other applications. Several financial organizations have tried to fight the integration of API, but the regulations by the EU have forced many organizations in the USA to adopt the change. Open banking has offered several benefits to the users, like sharing their data with the third-party budgeting organizations or apps, managing their finances using money management tools.

4.2 Artificial intelligence and Chatbots intelligence

The use of AI (artificial intelligence) and chatbots solutions is increasingly incorporated in digital transformation within the financial sectors of the United States. These technologies are popular among the banks, with everyone from tiny credit unions and large-scale banks are using them. The AI and Chatbots have greatly impacted the risk management, product delivery, and security. Banking machines have been integrated with simple algorithms to help in completing everything from entering data to risk management evaluation.

Artificial intelligence and chatbots are playing a significant in risk mitigation, and cybersecurity in the bank of United States. This is because cybersecurity is becoming a big threat in the state among other risks that can be eliminated through using AI in real-time monitoring, analytics and sending an instant alert when something has been flagged as a threat. That way the concerned individuals are able to respond thus reducing the possible breaches.

4.3 Block Chain

Block chain is the next emerging innovation that has tremendously transformed the financial world but it has not been adopted by many organizations in the USA. In the USA, block chain is being used by the financial institutions like JP Morgan Chase, which is known as one of the major banks. One of the studies indicates that Accenture approximates that investment financial organizations could be saving like 10 billion dollars by settling and clearing processes to block chain.

Block chain seem to be the most secure technology that has not been adopted by many financial organizations. Some financial institutions are still developing a vast solution, although several banks have adopted it in money processing, trade finance and checking various activities within their systems. The adoption of the block chain technology has greatly contributed to developing smart contracts, safe payments and fraud reduction.

5. Conclusion and Recommendations

5.1 Conclusion

The paper was intended to explore emerging innovations in risk management in financial institutions in USA. An s informed from the literature, risk management is key in financial institutions for sustainable organizational performance. As identified from the literature and from the above discussion, digital financing is a remarkable risk management strategy in the finance industry and needs to be well embraced by all financial institutions.

However, it should be noted that using sophisticated technology in risk management among financial institutions creates a new risk that requires constant attention and innovative risk management involve strategy. For instance, people rely heavily on technology to conduct transactions, move cash and other properties, and facilitate payments in the increasingly interconnected universe of businesses that make up financial markets. Cyber threats can cause systemic risks and negative externalities that affect governments, industries, and societies all over the world. Therefore, financial institutions need to be aware of the above risk and find ways to mitigate it. The best way to start laying out a robust domestic and international innovative way risk management in financial institutions to create proper operational stability and uninterrupted execution of critical operations is to explore the questions concerning these issues.

5.2 Recommendations

The process of risk management of innovation in financial institutions is essential to ensure proper operational stability and uninterrupted execution of critical operations. Following the literature findings and discussion, the paper recommends that financial institutions embrace digital finance exploitation as the best innovative risk management method despite the associated negative implication of technology advancement.

Based on the study of various literature related to emerging innovations in risk management in financial institutions, it is evident that risk management should follow a clear process of classification based on the individual risk characteristics, level of impact on innovative service consumer and on the activities of financial institutions as well as the nature of risk. According to the reviewed literature, significant areas of reconstructing financial institutions and minimizing the innovation risk is the adoption of Enterprise Risk Management strategies. This is a set of processes or programs that innovative financial institutions or business enterprises undertake to minimize all types of risks in an integrated manner. Besides, the interrelationship between risks and market activities of innovative financial institutions needs to be assessed. This helps to create a balance between financial risk management and corporate performance by the financial institutions.

As observed from the literature review, it is therefore essential for financial institutions to measure their financial performance to assess the progress made by these institutions in achieving financial and non-financial corporate goals and objectives. It is also noted that the context of digital development and the provision of innovative financial services enhance financial inclusion. In line with this, mobile finance and other digital technologies such as Point of Sale (POS) services, smart cards, Automatic Teller Machines (ATMs), and biometric-based identification cards can be integrated to achieve higher financial outcomes. Therefore, there are high chances of innovative financial institutions experiencing increased investment resulting from mobile payments.

Digital financial services can help innovative financial institutions sustainably manage their financial risks. From the reviewed literature, therefore digital financial services can enhance the business profitability and promote customer satisfaction. As an emerging innovation in the finance industry, digital financial services have helped individuals stem income shocks resulting from unexpected emergencies. Nonetheless, the implication of the emerging innovation in risk management in financial institutions should the overlooked regardless of the urgency

References

Arévalo, T.J. (2015). Financial and Economic Risk: Empirical Evidence from the Spanish Construction Sector from 2003 to 2013, *Universal Journal of Accounting and Finance,* vol. 9, no. 2, pp. 145-159, 2021.

Johnson, K. N. (2015). Cyber risks: Emerging risk management concerns for financial institutions. *Ga. L. Rev.*, *50*, 131.

Schwarcz, S. L. (2008). Systemic risk. Geo. Lj, 97, 193.
Fadun, O. S. (2013). Risk management and risk management failure: Lessons for business enterprises. International Journal of Academic Research in Business and Social Sciences, 3(2), 225.
Barton, T. L., Shenkir, W. G., & Walker, P. L. (2002). Making enterprise risk management pay off. FT Press.
Coffee Jr, J. C. (2013). Extraterritorial financial regulation: Why ET can't come home. Cornell L. Rev., 99, 1259.
Barton, T. L., Shenkir, W. G., & Walker, P. L. (2002). Making enterprise risk management pay off. FT Press.
Onafalujo, A., & Eke, P. (2012). Influence of enterprise risk management on competitive advantage in the Nigerian manufacturing sector. International Journal of Management Science, 3(3), 95-101.
Demirguc-Kunt, A., Klapper, L., & Singer, D. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence.
Harelimana, J. B. (2017). Impact of mobile banking on financial performance of Unguka Microfinance Bank Ltd, Rwanda. Global Journal of Management and Business Research.
Coffee Jr, J. C. (2013). Extraterritorial financial regulation: Why ET can't come home. Cornell L. Rev., 99, 1259.
Mishchenko, S., Naumenkova, S., Mishchenko, V., & Dorofeiev, D. (2021). Innovation Risk Management in Financial Institutions.
Naumenkova, S., Mishchenko, S., & Dorofeiev, D. (2019). Digital financial inclusion: Evidence from Ukraine. Investment Management and Financial Innovations, 16(3), 194-205. https://doi.org/10.21511/imfi.16 (3).2019.18
Planesa, B., Bardosa, M., Sevestreb, P., & Avouyi-Dovib, S. (2001). Innovation: Financing and Financing Constraints. Retrieved from https://www.bis.org/publ/cgfs19bdf3.pdf
Abu Karsh, Sharif, M.& Abbadi, Suleiman M. (2013). Methods of Evaluating Credit Risk used by Commercial Banks in Palestine, International Research Journal of Finance and Economics, Issue 111.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 253-264
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.361

The Effect of Work Motivation and Compensation on the Non-State Employees' Work Performance with Work Satisfaction as Intervening Variables at the National Land Agency, the Regency of Bekasi

Sri Marti Pramudena[1], Ahmad Badawi Saluy[2], Abdul Muhith[3]

[1] Magister Management, Universitas Mercu Buana, Jakarta, Indonesia. Email: dena_pramu@mercubuana.ac.id
[2] Magister Management, Universitas Mercu Buana, Jakarta, Indonesia. Email: ahmad.badawi@mercubuana.ac.id
[3] Magister Management, Universitas Mercu Buana, Jakarta, Indonesia. Email: abdulmuhith1996@gmail.com

Abstract
This study aimed to examine and analyze the effect of work motivation and compensation on the employees' work performance with job satisfaction as an intervening variable conducted at the National Land Agency, the Regency of Bekasi. The research used a quantitative descriptive method with a sample of 103 respondents out of a population consisting of 140 employees. Meanwhile, the data analysis was conducted using the coefficient of determination and simultaneous coefficient. Based on the study results, it reveals that (i) job motivation partially has a positive and significant effect on job satisfaction, (ii) compensation partially has a positive and significant effect on job satisfaction, (iii) job motivation partially has a positive and significant effect on job satisfaction, performance, (iv) compensation partially have a positive and significant effect on work performance, (v) job satisfaction partially has a positive and significant effect on work performance, (vi) work motivation and compensation simultaneously have a positive and significant effect on job satisfaction, (vii) work motivation and compensation simultaneously have a positive and significant effect on work performance. The two independent variables, i.e., work motivation and compensation, have a partial effect and can also work together (simultaneously) and have a positive and significant effect which can be proven by all the results of the proven hypotheses.

Keywords: Work Motivation, Compensation, Job Satisfaction, Work Performance

I. INTRODUCTION

In search of capacity enhancement, an organization takes several actions, such as learning, upgrading or training, providing appropriate rewards, and sharing motivation. In this way, it is expected that employees will further optimize their responsibility for their profession because they have been provided with learning and training relevant to their profession. On the other hand, provisioning rewards and motivational activities are basically the

employees' rights. It is the institutional responsibility to support the participation of its employees in achieving goals formalized by the institution.

In Indonesian people's perspective, land is a vital in the nation and state's life. The bond between the people and the land office has long existed in a close relationship. All areas of the Unitary State of the Republic of Indonesia (NKRI) are the homeland of the totality of the Indonesian Nation. Homeland is therefore ties of the Republic of Indonesia. Thus, in this national context, it is necessary for land regulation to protect the sustainability of the life system of the nation and state.

Fundamental values in the land aspect are also enacted in TAP MPR Number IX or 2001 regarding Agrarian Reform and Management of Natural Energy Resource and Law Number 5 year 1960 concerning Fundamental Agrarian Regulations, Presidential Decree No. 10 year 2006 regarding the Land Affairs Agency of the Republic of Indonesia is a form of strengthening the national land institution to establish a constitutional mandate in the land affairs.

Currently, the National Land Agency is demanded to have competent employees for institutional development. The organization must be able to create and improve their capabilities in their environment. Several aspects influence its success; one of the most determining factors is its human resources since the resource performs the totality from the level of programming to the assessment. Human resources can utilize other sources within an organization or institution. In an organization, the human resource plays a very significant role that can carry out organizational activities.

Poor performance of human resources results from a lack of employees' motivation at the National Land Agency, such as at the workplace. For instance, there are some employees who leave their work during working hours, causing unresolved works. Thus, there is an urgent need to elevate their work motivation to do their task appropriately.

To examine more deeply about motivation in the office, the authors conducted a pre-survey at the office location. It was found that work motivation was the selected factor chosen by the respondents as the most influential factor in their performance. During the presurvey activity, the total sample accounted for 103 respondents from a total population of 140 employees. The results of following pre-survey are presented in the following table.

Table 1: Pre-survey results on employees' work motivation

No.	Questions	Yes		No	
		(%)	Amount	(%)	Amount
1	Weekly allowance is sufficient for transportation cost to office.	37.86%	39	62.14%	64
2	Office provides enough facilities.	73.79%	76	26.21%	27
3	My superior always gives instruction during work	45.63%	47	54.37%	56
4	I feel comfortable a workplace environment	80.58%	83	19.42%	20
	Average	**59.47%**	**61**	**40.53%**	**42**

Source: processed presurvey results, 2020

Motivation plays a meaningful matter for employees since motivated employees desire to feel happier, fresher and are willing to arrive at office for work. The lack of motivation may lead to severe consequences on the level of employees' attendance and participation. Therefore, an organization is required to pay close attention to the employees' motivation so that they do not carry out their duties at will while there is no professional debt.

Meanwhile, rewards are a method an organization can provide as a form of reply to its employees. Since rewards can increase or decrease employee's competence, providing rewards to employees needs more attention from an institution. Rewards must be on a solid, correct, and balanced basis. When the rewards are experienced unbalanced, they will experience feelings of disappointment. As a result, good employees want to leave the organization.

For instance, there is an employee who has worked for more than 10 years with a new employee. Their salary is comparable for both old employees and the new ones since the new employee is assigned with heavier tasks than the old ones. Therefore, these employees are not satisfied with their work and their performance is not in line with the organization's expectations. Thus, in this aspect, the agency must take a reward for these employees taken into consideration. To delve more deeply into compensation in the office, the authors conducted a pre-survey on compensation. Based on the results, the 103 respondents out of the total population of 140 employees regarded the compensation as the most influential factor in their performance. The pre-survey results are presented in the following table.

Table 2: Presurvey results on the role of compensation

No.	Questions	Yes		No	
		(%)	Amount	(%)	Amount
1	My income can fulfill my needs.	42.72%	44	57.28%	59
2	I am glad to have extra income from my employer due to my good work performance	63.11%	65	36.89%	38
3	I am satisfied with compensation the office provides	38.83%	40	61.17%	63
4	I feel secured since I get health insurance during my work period	88.35%	91	11.65%	12
	Average	**58.25%**	**60**	**41.75%**	**43**

Source: presurvey results, 2020

By this procedure, individual actions and behavior with feelings of pleasure and enjoyment can be revealed. Generally, the method can make them carry out good deeds by repeatedly intending to make a person continue to be active in an effort to justify or improve the results he has achieved. A research conducted by Purnami (2014) reported that rewards could positively affect an employee to increase his ability. It means that the rewards will continue to increase the employees' motivation in achieving great competence as well. Likewise, another research also reported that there were consequences of rewards for employee abilities.

A research conducted by Dhermawan (2012) reported that rewards are proven to result in positive and important consequences for employees to improve their abilities. It means that the rewards improvement an organization is going to provide will result in an enhanced ability of its employees. On the contrary, if there is a lack of rewards an institution provides to employees, the employees' ability tends to reduce. There is a distinct lack of employee's ability at the Office since many employees postpone their tasks or do their duty at will. If the Office aspires to achieve good employees' performance, there is a need to conduct an assessment and gather information regarding the situation to estimate in policies and decisions making. To examine more deeply about the employees' performance, a pre-survey was conducted with 103 respondents on which factors most influenced the work performance at the BPN office in the Regency of Bekasi. The results are presented in the following table.

Table 3: The most influential factors to work performance

No	Factor	%	No. respondents
1	Compensation	26,21%	27
2	Job satisfaction	23,31%	24
3	Motivation	21.36%	22
4	Work discipline	14.56%	15
5	Workload	9.71%	10
6	Workplace environment	4.85%	5
	Total	100%	103

Source: presurvey results processed, 2020

Based on the presurvey results on the aspects affecting work performance in Table 1.3, it can be observed that motivation (21.36%), compensation (26.21%), and job satisfaction (23.31%) are among the most influential for the National Land Agency office, the Regency of Bekasi.

The employees' competence is required to improve productivity and protect the organizational development. Without compensation, each institution does not intend to provide its employees. It is one of the significant problems in delivering motivation for the employees because to improve their capabilities; proper compensation is required to support them. When there is a decrease in employees' competence, it will have negative consequences for the organization.

Job satisfaction greatly requires an employer to motivate through a need, which is one meaningful aspect for motivating employees. It is because as people, the employees have various basic necessities and needs. They will be motivated when their needs are fulfilled. Thus, by fulfilling their desires, their satisfaction is eventually increased during their activities. This situation will have a positive impact on the employees' competence.

Employees who work exceeding their working hours or also known as overtime lack attention from an agency. Therefore, they are not satisfied at work. In fact, the agency should pay attention to the employees' work performance to complete their overtime job by providing appropriate compensation. Thus, they will feel satisfied and have enthusiasm at work.

To examine more deeply about what aspects determining their job satisfaction in the office, we conducted a pre-survey at the office. There were total 103 samples selected as the respondents out of 140 total population. The results are presented in the following table.

By providing adequate compensation to employees that their needs will be fulfilled, it is expected they are satisfied at work. Dissatisfaction caused by their unfulfilled needs at work will decrease their job satisfaction, resulting in employees' poor work performance. Job satisfaction refers to contentedness to income, promotion, leadership abilities, areas of activity and supervision with employees having a great influence in improving their performance. Job satisfaction leads the employees to be more enthusiastic at workplace so that they are more active in achieving targets (Pramudena, 2019). In addition, job satisfaction can also instill a strong commitment to the employees.

Table 4: Pre-survey results on job satisfaction

No	Statement	Yes		No	
		(%)	Amount	(%)	Amount
1	There is gradual socialization on work policies at workplace	54.37%	56	45.63%	47
2	Honor earned equivalent with tasks when done overtime.	40.78%	42	59.22%	61
3	Work comfortably with co-workers	64.08%	66	35.92%	37

4	Holiday allowance is given based on employees' period of employment	44.66%	46	55.34%	57
	Average	**50.97%**	**53**	**49.03%**	**50**

Source: presurvey result processed, 2020

II. LITERATURE REVIEW

A. Work motivation

According to Hasibuan (2012), work motivation is the provision of driving energy that results in the excitement to an individual in performing activities so that he is willing to work passionately, efficiently, and put all his energies and efforts to achieve happiness.

B. Compensation

Compensation is all benefits that are earned by workers/employees which correspond to services they provide to a company. Compensation may cover a greater purpose than reward or income. While rewards or income primarily refers to the financial benefit, compensation may cover both financial or non-financial aspects.

C. Job satisfaction

According to Pramudena (2019), job satisfaction can also instill a strong commitment to employees. On the other hand, if an employee is not satisfied, it will result in insufficient commitment. Job satisfaction is an emotional response to a profession that includes cognitive, affective, and social life responses or actions.

D. Work performance

The ability is indicated with job performance or actual performance (an actual result of an activity personally achieved). Ability is the result of activities based on quality parameter as well as an employee's achievement in carrying out his duties according to the responsibilities an organization has assigned (Mangkunegara, 2017:67).

E. Theoretical framework

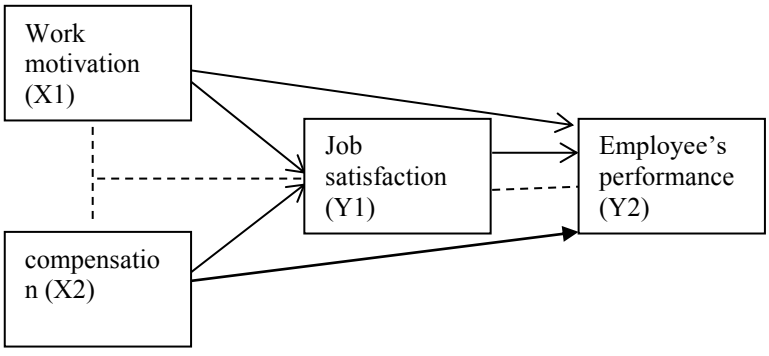


Figure 1: The theoretical framework of the research

III. RESEARCH METHODS

A. Research category

This research was conducted using a quantitative method. According to Sugiyono (2015), the quantitative procedure is also known as the conventional method because it has been used for quite a long time as a research method. This procedure is regarded as the objective method (scientific) because it has fulfilled the objective requirements, such as concrete or empirical, objective, measurable, logical, and analytical method. As a result, it can be achieved through the latest knowledge, insights, and technology. It is called quantitative method because the information resulting in a study is in the form of numbers as well as statistical analysis. Meanwhile, an analysis in this study was conducted using a survey method by random sampling to the employees from all divisions of the BPN, the Regency of Bekasi.

B. Population and sample

The population is a complete sub-group, generally comprising people, objects, or events of interest in studying or becoming research objects. The population in this research is the employees of BPN of the Regency of Bekasi, accounting for 140 employees. Meanwhile, the illustration is a part or division of the population that is observed.

C. Method of data analysis

The procedure of data processing used in this research is performed using the software of SPSS version 24. There are several stages of data processing in this research consisting of research validity test, reliability test, classical assumptions test (i.e., normality, multicollinearity and heteroscedasticity), path analysis, coefficient of confidence, and the assumption test using the simultaneous F test as well as the partial t test.

IV. RESULTS AND DISCUSSIONS

A. Validity and reliability

1. Validity test

Validity test is performed to measure whether a questionnaire is valid/reliable. The questionnaire s said to be reliable provided that it is able to deliver something that will be measured. Furthermore, according to Kasmadi and Sunariah (2014:79), in the Product Moment Relationship method, an indicator to measure validity is that the value of r count > r table, provided that:
N = 103 or df = 103 - 2 = 101, the r table value obtained = 0.193. Furthermore, the values are compared between that of r count and r table.
R count > (0.193) = valid
R count < (0.193) = invalid

2. Reliability test

In the reliability test, the data were processed using the software of SPSS version 24. 0. If value of Cronbach's alpha accounts for 0.6, it is regarded to be reliable. The reliability test results of all elastic to be reliable. Therefore, the next step is to measure the information reliability. In carrying out the reliability test, the population accounts for 103 respondents. The basis of decision making is:

a. If r alpha (Cronbach's alpha) is positive, and r alpha > 0.6, the item is considered to be reliable.
b. If r alpha (Cronbach's alpha) is negative and r alpha < 0.6, the item is regarded to be unreliable

Table 5: Reliability test results

No.	Variable	Cronbach's alpha	Minimum Cronbach's alpha	Note
1.	Work motivation	0.691	0.6	Reliable
2.	Compensation	0.692	0.6	Reliable
3.	Job satisfaction	0.670	0.6	Reliable
4.	Performance	0.668	0.6	Reliable

Source: research data processed, 2020

B. Classical Assumption test

1. Normality test

The Kolmogorov – Smirnov test shows that the significance level of the unstandardized residual is 0.200, which is greater than 0.05. Therefore, it can be concluded that the data are normally distributed. Thus, the variable estimator obtained in this study is considered unbiased or nearly approaches the number of actual population and the data are normally distributed.

2. Heteroscedasticity test

The determination of whether there is heteroscedasticity is by observing the dots pattern in the regression scatterplots obtained from SPSS. If there is a unique pattern, the regression has indicated heteroscedasticity. On the other hand, if there is no real pattern and the points are scattered above and below the zero value and on the Y-axis, it can be concluded that there is no heteroscedasticity.

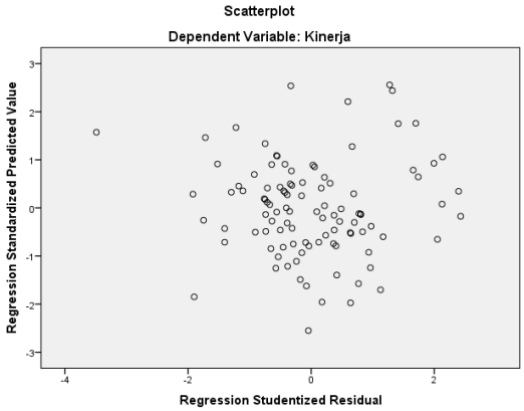


Figure 2: Heteroscedasticity test result

Source: Research data processed, 2020

The results of the heteroscedasticity test indicate that scattering dots are showing an unreal pattern above and below the value of 0 on the Y axis. Thus, it can be concluded that there is no heteroscedasticity issue in the regression form.

3. Multicollinearity test

According to Priyatno (2016: 130), the multicollinearity test is a condition where between two or more free elasticity, there is a perfect or nearly perfect linear relationship is formed in the regression. A good regression form is indicated with the absence of a multicollinearity issue. The determination of whether there is multicollinearity is usually performed by observing the tolerance and VIF value in the linear regression results. If the value of tolerance is more than 0.1 and VIF is less than 10, there is no multicollinearity.

Table 6: Multicollinearity test result

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Work motivation	.655	1.527
	Compensation	.607	1.646
	Job satisfaction	.460	2.174
a. Dependent variable: work performance			

Source: Research data processed, 2020

By observing Table 6, it can be seen that the tolerance value of the two independent variables and the intervening variable is more than 0.1. Furthermore, the value of VIF is less than 10, so it can be concluded that there is no multicollinearity problem in the regression model.

C. Path analysis

Analysis of the causal relationship between the variables of work motivation and compensation on job satisfaction and performance is performed through a method called path analysis. Based on the analysis results of data from questionnaires processed with the software SPSS, the study obtained as follows:

Table 7: Determination coefficient of substructure 1

Model summary[b]				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. error of the estimate**
1	.735[a]	.540	.531	3.656
a. Predictors: (constant), compensation, work motivation				
b. Dependent variable: job satisfaction				

Source: research data processed, 2020

Based on Table 7, it can be observed that there is a simultaneous effect of motivation and compensation on job satisfaction with a level of confidence of 0.540 and the residual coefficient of 1 - R2 = 0.460. The elasticity of work motivation and compensation accounts for 54% to the job satisfaction. On the other hand, the other effect of 46% is influenced by other factors not determined in this study.

Table 8: Determination coefficient of substructure 2

Model summary[b]				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.557[a]	.310	.297	4.760
a. Predictors: (constant), compensation, work motivation				
b. Dependent variable: performance				

Source: research data processed, 2020

Based on Table 8, it can be observed that the variables of work motivation and compensation have a simultaneous effect on ability at the level of confidence of 0.310, while the magnitude of the residual coefficient is 1- R2 = 0.690. Work motivation and compensation share a 31% effect on the employees' competence. Meanwhile, another 69% factor is influenced by other variables not determined in this study.

D. Hypotheses testing

1. Partial t-test

Table 9: The t partial test results of the variable of work motivation on work performance

Coefficients[a]				
Model		Standardized Coefficients	t	Sig.
		Beta		
	Motivasi Kerja	.587	7.293	.000

Source: Research data processed, 2020

The route coefficient as a direct effect of work motivation to job satisfaction is 0. 587, proving that employees' increase in work motivation will result in job satisfaction. In addition, it obtained a t-count of 7. 293 at the level of significance of 5% and the value of the t-table of 1.983. Consequently, given t-count = 7. 293, which is greater than 1. 983, therefore, H0 is rejected, which proves that the hypothesis (H1) stating work motivation has a significant effect on the job satisfaction for the BPN employees in the Regency of Bekasi.

Table 10: Partial t-test result of the variable of compensation on job satisfaction

Coefficients[a]				
Model		Standardized coefficients	t	Sig.
		Beta		
	Compensation	.626	8.078	.000

Source: Research data processed, 2020

The route coefficient as a direct effect of compensation on job satisfaction accounts for 0.626. It proves that a continuous increase in compensation given to the employees will result in an increase in job satisfaction with a continuous increase in a p-value of 0.000. The t-count is 8.078 at a significance level of 5%, and the value of the t-table is 1. 983. Consequently, since the value of t-count is 8.078 greater than 1.983, H0 is rejected, indicating that the hypothesis (H2) stating that compensation has a significant effect on the BPN employees' job satisfaction in the Regency of Bekasi.

Table 11: Partial t-test result of the variable of work motivation on work performance

Coefficients[a]				
Model		Standardized coefficients	t	Sig.
		Beta		
	Work motivation	.482	5.524	.000

Source: Research data processed, 2020

The route coefficient as a direct effect of work motivation on the employees' competence is 0. 482, proving that when work motivation continuously increases, the employees' competence will also incline with the p-value of 0.000. In addition, it obtained t-count accounting for 5. 524 at the significance level of 5%, the value of t-table of 1.983. Consequently, since the value of t-count = 5.524, greater than 1.983, H0 is rejected, inferring that the hypothesis (H3) states that work motivation has a significant effect on the BPN employees' competence in the Regency of Bekasi, is accepted.

Table 12: Partial t-test result of the variable of compensation on the work performance

Coefficients[a]				
Model		Standardized coefficients	t	Sig.
		Beta		
	Compensation	.437	4.885	.000

Source: Research data processed, 2020

The route coefficient as a direct effect of compensation on the employees' competence is 0.437, which indicates that if the compensation given to the employees continuously increases, there will be a continuous increase in their competence with a p-value of 0.000, t-count of 4.885 at the significance level of 5% and the value of t-table of 1. 983. Consequently, since t-count = 4.885 is greater than 1.983, H0 is rejected which proves that the hypothesis (H4) is accepted that the compensation shares an important implication for the BPN employees' competence in the Regency of Bekasi.

Satisfaction on the employees' competence is 0.554. It indicates that an increase in the job satisfaction continuously will improve the employees' competence. In addition, it obtained t-count of 6.682 at a significance level of 5%, the value of the t-table is 1.983. Consequently, since the value of t-count = 6.682 is greater than 1.983, H0 is rejected, proving that the hypothesis (H5) is accepted stating that job satisfaction shares important implications for the BPN employees' competence in the Regency of Bekasi.

2. Simultaneous partial F-test

Table 14: Simultaneous partial F-test result of Sub 1

ANOVA[a]						
Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	1568.835	2	784.417	58.698	.000[b]
	Residual	1336.369	100	13.364		
	Total	2905.204	102			
a. Dependent variable: job satisfaction						
b. Predictors: (constant), compensation, work motivation						

Source: Research data processed, 2020

Based on the table above, it is obtained that the F-count value is 58.69, a p-value of 0.000 with alpha = 0.05, and the degrees of freedom v1 = 2 and v2 = 100, the F-table of 3.09. Because the value of F-count is greater than F-table, i.e., 56.69 > 3.09, H0 is rejected and H1 is accepted. Thus, there is a simultaneously significant influence of work motivation and compensation on the BPN employees' job satisfaction, the Regency of Bekasi.

Table 15: Simultaneous partial F-test result of Sub 2

ANOVA[a]						
Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	1019.274	2	509.637	22.495	.000[b]
	Residual	2265.541	100	22.655		
	Total	3284.816	102			
a. Dependent variable: work performance						
b. Predictors: (constant), compensation, work motivation						

Source: Research data processed, 2020

Based on the results in the table above, it is obtained that the F-count value is 22.49, a p-value of 0.000 with alpha = 0.05 and the degrees of freedom v1 = 2 and v2 = 100. Meanwhile, the F-table is 3.09. Because the value of F-count is greater than that of F-table, i.e., 24.49 > 3.09, H0 is rejected while H1 is accepted. Thus, there is a simultaneously significant influence of work motivation and compensation on the BPN employees' work performance in the Regency of Bekasi.

V. CONCLUSIONS

Based on the research results, considering theoretical elaboration to data collection, data presentation as well as analysis and discussion, we can conclude several points as follows:

1. Work motivation has a positive and significant effect on the BPN employees' job satisfaction in the Regency of Bekasi.
2. Compensation has a positive and significant effect on the BPN employees' job satisfaction in the Regency of Bekasi.
3. Work motivation has a positive and significant effect on the BPN employees' work performance in the Regency of Bekasi.
4. Compensation has a positive and significant effect on the BPN employees' work performance in the Regency of Bekasi.
5. Job satisfaction has a positive and significant effect on the BPN employees' work performance in the Regency of Bekasi.
6. Work motivation and compensation simultaneously have a significant effect on the BPN employees' job satisfaction in the Regency of Bekasi.
7. Work motivation and compensation simultaneously have a significant effect on the BPN employees' work performance in the Regency of Bekasi.

References

Arifin, Muhammad. 2017. *Pengaruh Kompensasi dan Kepuasan Kerja terhadap Kinerja (Studi terhadap Fakultas Keguruan dan Ilmu Pendidikan Universitas Muhammadiyah Sumatera Utara)*, Jurnal EduTech, Vol.3 No.2, September.

Ayundasari, Dini, Yunita, dkk. 2017. *Meningkatkan Kinerja Karyawan melalui Motivasi Kerja dan Efisiensi diri diperoleh oleh Kepuasan Kerja*, Jurnal Manajemen Terapan (JAM), Vol.15 No.4, Desember.

Dewi, Puspa, dkk. 2019. *The Effect of Work Motivation on Employee Performance is Mediated by Job Satisfaction at Pt. Bank Rakyat Indonesia TBK Branch Office Rengat*, International Journal of Scientific Research and Management, Vol.7 No.9, September.

Farizki, Muchamad, Ressa. 2017. *Pengaruh Motivasi Kerja dan Lingkungan Kerja terhadap Kinerja Karyawan Medis*, Jurnal Ilmu dan Riset Manajemen Vol.6 No.5, Mei.

Hendro, Timoti. 2018. *Pengaruh Kompensasi dan Kepuasan Kerja terhadap Kinerja Karyawan tetap CV. Karya Gemilang*, Jurnal AGORA. Vol.6 No.1.

Iis, M, Yusuf, Mukhlis, Yunus. 2016. *Job Satisfaction as an Intervening Variable of Self-Efficacy and Employee Performance*, International Journal of Academic Research in Business and Social Sciences, Vol.6 No.7

Kadir, MA Habibi, Lia Amalia. 2017. *The Effect Of Job Motivation, Compensation, Organizational Culture Towards Job Satisfaction And Employee Performance Of The Ministry Of Man Power*, Jurnal International Journal of Business and Management Invention, Vol.6 No.5, May, hal 73-80.

Mabaso, CM, Bongani, ID. 2017. *Impact of Compensation and Benefits on Job Satisfaction*, Research Journal of Business Management, www.academicjournals.com, Vol.11 No.2, hal 80-90.

Martiati, Hanif, Mauludin. 2018. *The Influence of Organizational Culture and Work Motivation on Employee Performance, Job Satisfaction as Intervening variable (Study on secretariat staff of Pasuruan Regency)*, IOSR Journal of Business and Management (IOSR-JBM), Vol.20 No.1, Agustus, hal 30-39

Martinus, Erik. 2016. *Pengaruh Kompensasi Dan Motivasi Kerja Terhadap Kinerja Karyawan Pada Pt. Devina Surabaya*, Jurnal Ilmu dan Riset Manajemen, Vol.5 No.1, Januari.

Masydzulhak, dkk. 2016. *The Influence of Work Motivation and Job Satisfaction on Employee Performance and Organizational Commitment Satisfaction as Intervening Variables at PT. Isuzu Asia*, Jurnal Penelitian dalam Bisnis dan Manajemen, Vol.4 No.10, hal 01-10.

Mundakir, Zainuri. 2018. *Pengaruh Kompensasi dan Motivasi terhadap Kinerja Pegawai Negeri Sipil dengan Kepuasan Kerja sebagai Variabel Intervening*, Business Management Analysis Journal (BMAJ), Vol.1 No.1, Oktober.

Njoroge, Sheila Wambui, Josephat Kwarisa. 2015. *Influence of Compensation and Reward on Performance of Employees at Nakuru County Government*, Jurnal IOSR Journal of Business and Management (IOSR-JBM), Vol.17 No.11, November, hal 87-93.

Pramudena, Sri Marti, Asmy FH. 2019. *The effect of quality of worklife and job satisfaction on organizational commitment*, Management Journal of Binaniaga, Vol. 04, No. 01, Juni, hal 23-36.

Saluy, A.B, dkk. 2019. *Pengaruh Pelatihan, Motivasi Kerja dan Kompetensi terhadap Kinerja Personel di Makosek Hanudnas I*, Journal of Management and Business Review, 16(1), 87-109.

Setiadi, Ratna Ursula, dkk. 2016. *The Effect Of Compensation And Work Motivation On Employee Performance At Semen Indonesia Limited Company*, International Journal of Academic Research and Reflection, Vol.4 No.3, www.idpublications.org, hal 64-85.

Sudarno. 2016. *Effect of Compensation, Motivation and Organizational Climate on Employee Satisfaction: Study on PT. Sumber Alfaria Trijaya Tbk. in Gedangan-Sidoarjo*, International Journal of Business and Management, Vol.11 No.2, hal 212-220.

Tufail, Sajid, Muhammad Sajid. 2015. *An Empirical Study of Relationship between Compensation, Working Environment and Motivation of Employees in Banking Sector of Pakistan*, Journal of Marketing and Consumer Research, Vol.6, hal 86-91.

Wijaya, Tanto, Fransisca, Andreani. 2015. *Pengaruh Motivasi Dan Kompensasi Terhadap Kinerja Karyawan Pada Pt Sinar Jaya Abadi Bersama*. Jurnal AGORA. Vol.3 No.2, hal 37-45.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 265-270
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.362

Renewable Energy Consumption and Economic Growth in Asia Pacific

Pisi Bethania Titalessy[1]

[1] Department of Management, Duta Wacana Christian University, Yogyakarta, Indonesia

Correspondence: Pisi Bethania Titalessy, Department of Management, Duta Wacana Christian University, Yogyakarta. E-mail: bethaniapisi@staff.ukdw.ac.id

Abstract
The problem of climate change is increasingly global and results in environmental damage due to the use of fossil energy in human activities. An increasing population will make energy consumption increase and can make things worse. Therefore, it is necessary to replace old energy with alternative energy that is more environmentally friendly and makes productivity effective and efficient. Renewable energy is pointed out as an alternative energy source that is environmentally friendly and the process is sustainable because it is always available in nature. Renewable energy is expected to increase the country's national income. This study aims to analyze the impact of renewable energy on economic growth in the Asia Pacific region as a whole. By using data from 2000-2015, panel data analysis in this study shows that Renewable Energy Consumption (REC) has a negative and significant relationship to economic growth, while renewable energy and combustible waste (CRW) has a significant and positive effect on economic growth.

Keywords: Renewable Energy, Sustainable, Economic Growth, Consumption

1. Introduction

Global warming which is increasingly becoming an international issue and a world problem today. This is due to the use of fossil energy which has been relied on by most human activities. Excessive and continuous use of fossil fuels can cause environmental problems, as well as the potential to create dangerous greenhouse effects and cause natural imbalances due to drastic weather changes.

IPCC (2007) states that human activities in practice consume energy with various factors that influence and have caused climate change in the last few decades. Energy consumption is also increasing where a country has a large population, such as countries in the Asia Pacific region. When Asia Pacific experiences an increasing middle-class population that continues to grow, and rapid urbanization, the demand for energy is also certain to continue to increase. To deal with this problem, efforts are needed to find alternative energy supplies that can replace energy sources that do not have a negative impact on the environment.

Finding other alternatives to energy use is very important to do, because in addition to avoiding bad effects on the environment, energy use is a basic necessity in carrying out economic activities. Renewable energy is pointed out as an alternative energy source that is environmentally friendly and the process is sustainable because it is always available in nature. Renewable energy is produced from energy resources that naturally will not run out and can reduce environmental pollution compared to non-renewable energy. (Shahbaz et al. 2020) stated that renewable energy technology is not only sustainable but also has an impact on the economy because it can be efficiently used by industry (production purposes) and households (daily use). Thus, energy technology not only affects the consumption side but also affects the production side which in turn has an impact on domestic production.

Although renewable energy has many advantages over traditional energy (fossil fuels), the fact is that this transition is still difficult and does not take time. Energy transition, namely the transition from a fossil energy system to a low-carbon energy system, has become the development agenda and strategy of many countries. The International Renewable Energy Agency in 2019, has made a roadmap towards the transition to low-carbon energy use by 2050. The Asia Pacific region has a major role in sustainable efforts for renewable energy on the global stage and there are considerable progress and strong potential for future developments. front. Countries with the highest share of renewable energy in total final energy consumption are Myanmar (68%), Sri Lanka (51.3%), the Philippines (47.5%) and Indonesia (47%), driven by hydropower and bioenergy (REN21 2019).

Although countries in Asia and the Pacific have made significant progress in connecting their populations to access to electricity. An estimated 350 million people still lack access across Asia. The remaining work towards electrification is a challenge and exacerbated by the fact that many households without access are located in very remote areas including mountains, islands or hamlets and isolated villages.

Socialization and energy transfer policies are still very much needed in order to maximize the benefits of renewable energy on the economy. Renewable energy is expected to increase the country's national income. Therefore, this study was conducted to confirm the impact of renewable energy on economic growth in Asia Pacific countries as a whole.

2. Literature Review

Several studies have been conducted to determine the relationship between energy consumption and the economy. In traditional economic literature, Dinda (2004) states that the relationship between economic growth and environmental degradation is understood in terms of the Environmental Kuznets Curve (EKC). EKC postulates, "Environmental degradation increases with increasing income to a threshold level, beyond that, environmental quality increases with higher per capita income." Research presented by several studies (Apergis and Payne 2009, Apergis and Payne 2010, Apergis and Payne 2014) found a two-way relationship between renewable energy consumption and economic growth, especially in China where real GDP growth was 0.12% with an increase in energy consumption. renewable by 1%. In the context of the panel, many have analyzed the consumption of renewable energy in OECD countries (Sadorsky, 2009; Apergis and Payne, 2010; Tiwari, 2011; Tugcu et al., 2012; Kula, 2014; Bhattacharya et al., 2016; Jebli et al., 2016; Rafindadi and Ozturk, 2017; Benavides et al., 2017; Taher, 2017; Hassine and Harrathi, 2017).

Renewable energy is considered to be in synergy with many aspects of sustainable development (Stiglitz, 2002). That is why sustainable development through renewable energy is at the center of policies around the world. Other research that has been done also shows the importance of renewable energy globally in relation to its relationship to the economic conditions of the country. Sadorsky (2009) also concluded that there is a positive relationship between real per capita income and per capita renewable energy consumption.

On the other hand, the causality between energy consumption and economic growth has also been shown to be neutral in several studies. Yildirim et al. (2014) examined the causality between renewable energy and economic growth in the US. They found no causality between economic growth and total renewable energy consumption. Ocal & Aslan (2013) found that renewable energy consumption has a negative impact on economic growth in the case of Turkey. Chang et al. (2009) attempted to investigate the development of the renewable energy sector under

different economic growth rate regimes by applying a panel threshold regression model (PTR) in OECD member countries. The results showed that countries with high economic growth were able to increase the use of renewable energy, while countries with low economic growth were unable to grow their consumption of renewable energy. Another study by Al-Mulali et al. (2014) shows that the consumption of renewable electricity is more significant than the consumption of non-renewable electricity in driving economic growth in 18 Latin American countries in the long and short term. Then, Al-Mulali et al. (2013) studied the case of high-income, upper middle, lower middle and low-income countries using the fully modified ordinary least square (FMOLS) method. This study determines the two-way causality running between renewable energy and GDP growth for the majority (79%) of the country. However, the results show a unidirectional long-term relationship of GDP growth with renewable energy consumption for 2% of countries and fail to establish a long-term relationship between these variables for 19% of countries. The conclusions suggest that the level of significance of the long-term bidirectional relationship between variables gradually becomes more important when moving from low-income to high-income countries.

3. Method

In this study the data used are secondary data in the form of economic growth, Renewable Energy Consumption, and Combustible renewables and waste in the Asia Pacific countries in the period 2000-2015 obtained from website www.worldbank.org.

The approach used in this research is quantitative, using panel data analysis by analyzing the influence of the variable consumption of renewable energy and combustible renewables and waste consisting of solid biomass, liquid biomass, biogas, industrial waste and municipal waste on GDP growth. This study uses GDP growth as a dependent variable and consumption of renewable energy and combustible renewables and waste as independent variables.

1. GDP (Y). Annual percentage growth rate of GDP at constant market prices based on local currency. Aggregates are based on constant 2010 US dollars. GDP is the sum of gross value added by all resident producers in the economy plus product taxes and less subsidies that are not included in the value of the product. This is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.
2. Consumption of renewable energy (X1). The purpose of renewable energy consumption is energy consumption that uses renewable resources such as the use of water, wind or solar energy in the period 2000 - 2015 in the Asia Pacific region.
3. Combustible renewables and waste (X2). It consists of solid biomass, liquid biomass, biogas, industrial waste and municipal waste, measured as a percentage of total energy use in the 2000 - 2015 period in Asia Pacific countries.

In this study, a classical assumption test was also carried out, testing through classical assumptions aims to determine whether there is interference between time series disturbances and individuals (cross-sectional disturbances), or both. The assumption tests carried out are autocorrelation, heteroscedasticity, and multicollinearity tests.

The equation model in this study:
$GDPi,t = \alpha i,t + \beta 1RECi,t + \beta 2CRWi,t + \varepsilon i,t$

Where:

GDPi, t : The economic growth of country i in year t
RECi, t : Renewable Energy Consumption country i in year t
CRWi, t : Combustible renewables and waste country i in year t
$\varepsilon i,t$ :: Error term

4. Results and Discussion

4.1 Classic Assumption Test

In the first step, it is necessary to test the classical assumptions of the data to be processed. In this study, the multicollinearity test was enforced. To test for multicollinearity, namely by looking at the VIF value of each independent variable, if the VIF value is <10, it can be concluded that the data is free from multicollinearity symptoms. The results of the multicollinearity test in this study showed that there was no correlation between the independent variables because the VIF value was <10, here is the table of results:

Table 1:Multicollinearity Test

Variable	**VIF**
REC	6.07
CRW	6.07
Mean VIF	6.07

Source: author's calculation

Before carrying out the significance test, the best model selection test, which is generally used on panel data is hausman test. The hausman test is a form of chi-square test that is carried out based on the quadratic form and the difference between the consistent estimator and the efficient estimator. In the panel data analysis model using the Fixed Effect Method (FEM) approach, a consistent estimator is obtained, while in the analysis model with the Random Effect Method (REM) an efficient estimator is obtained. From the results of the Hausman test, the value of prob is 0.9441 or more than the significance used, which is 5% or 0.05. then the random effect model is chosen instead of the fixed effect model.

4.2 Significance Test

By selecting the random effect model, it is not relevant for other Classical Assumption tests to be carried out. This is because the random effect model uses the Generalized Least Square (GLS) estimation method. GLS technique is believed to overcome the existence of time series autocorrelation (time series) and correlation between observations (cross section). The GLS method produces an estimator to meet the properties of Best Linear Unavailable Estimation (BLUE), which is a treatment method to overcome heteroscedasticity and autocorrelation assumption violations (Gujarati, 2004). Table 2 below shows the results of the regression analysis using the random effect model approach.

Table 2: Results of Random Effects Model (REM) Estimation

Independent Variable	**Dependent Variable**	
	GDP	
	Coefficient	***Probability***
Constant	3.977342	0.000
Renewable Energy Consumption	-.0559157	0.037
Combustible renewables and waste	.1534541	0.000
R-sq	0.0941	

Note : Significance at α = 5%

Source: author's calculation (STATA, 2020)

From the estimation results that have been obtained, the consumption of renewable energy has a negative contribution to economic growth in Asia Pacific countries, this can be seen from table 2 where the P-value of renewable energy consumption (REC) is less than (0.037 <0.05), Meanwhile the coefficient is negative (-

.0559157), meaning that when an increase in renewable energy consumption occurs, economic growth will decline. This is because there are still countries that still use non-renewable energy sources for industry and other economic activities that increase CO2 emissions in the community, thus requiring a shift in investment from fossil fuels to renewable energy. It is necessary to invest in cost-effective energy use and infrastructure in renewable energy. However, an energy system that relies heavily on renewable energy will be different from the previous system and will require significant investment in the power grid, complementary infrastructure and energy flexibility. Investment decisions require data, documentation and analysis that need to be supported to encourage better investment absorption and increase project confidence. The lack of reliable, comparable data sets against resource availability, capital and operating expenditures, and energy prices at the local level, hinders access to renewable energy finance and energy efficiency. For emerging markets, the risk of sovereignty and the absence of local currency financing can create problems as well (REN21 2019).

It seems that although the benefits of clean and renewable energy are obvious, the shift in the use of fossil fuels by renewable energy sources is occurring at a very low rate even though the economic impact of economic development on renewable energy will ultimately feed back into economic development because many studies have stated that that renewable energy will increase economic growth in the long run.

This study is not in accordance with the findings of several studies that support the positive impact of renewable energy on economic growth. The results of this study corroborate the findings of Silva et al. (2012) which also has evidence from a study of four countries, namely the United States, Denmark, Spain and Portugal to support the economic growth hypothesis. It can be implied that increasing investment in the production and use of renewable energy entails an economic cost in terms of GDP per capita.

On the other hand, according to Venkatraja (2020), in the results of his research in BRIC countries (Brazil, Russia, India and China), it was found that renewable energy has a negative relationship with economic growth. Contrary to the widely accepted theory, which states that investment in the production and consumption of renewable energy will accelerate growth, it has not been supported by the findings of this study. It has been found that countries transitioning from traditional to renewable energy must bear the increased economic costs and reduced economic growth.

5. Conclusion

The Asia Pacific covers a large area and accounts for most of the world's population and population growth. The region's economic transformation, and the speed with which it transitions to cleaner energy sources, are critical to the success of global efforts to reduce greenhouse gas emissions. Asia Pacific countries must quickly shift from consuming non-renewable energy to renewable energy consumption and need to pay certain economic costs to increase the consumption of renewable energy, which will ensure a quality environment and pave the way to sustainable development.

This study discusses the relationship between two types of renewable energy consumption, including the consumption of hydropower, solar, wind and nuclear as well as Combustible renewables and waste on economic growth in the Asia Pacific region during the period 2000-2015 using Panel Data. The results show that it turns out that the consumption of renewable energy has not yet increased economic growth because there is still a shift to switch from traditional energy to renewable energy, so it needs infrastructure and financing for that. The inversely proportional to the consumption of renewable energy, renewable energy and combustible waste shows a positive effect on economic growth and this is in line with existing previous research.

The central government's budget allocation for developing the renewable energy sector is on the rise. Harnessing solar energy, wind energy and bio energy has become a priority in the national government's energy policy. However, the transition was not smooth and created inequality in the economy. Higher electricity production costs, higher costs for different and country-specific energy consumption have a negative impact on industrial investment and employment. The contradiction between the widely claimed benefits of renewable energy and the

sustainability of economic growth and the findings of this study can be attributed to the ineffectiveness of the government's renewable energy policy design.

The policy of replacing non-renewable energy with renewable energy is needed not only to avoid catastrophes in the atmosphere but also to stimulate long-term economic growth. The implementation of renewable energy policies is based on several factors within and across countries, it is important to develop long-term plans to address capacity, costs, regulatory constraints, infrastructure and the country's institutional structures.

Future research could focus on environmental factors to reflect the sustainable growth caused by renewable energy. Investigations can be carried out to identify the factors that influence economic growth by increasing the share of renewable energy in total energy. Research can also be part of the socialization for the use of renewable energy for the community.

References

Al-Mulali, U., Fereidouni, H.G. & Lee, J.Y.M. (2013). Examining the bi-directional long run relationship between renewable energy consumption and GDP growth. Renewable and Sustainable Energy Reviews, 22, pp.209–222.

Al-Mulali, U., Fereidouni, H.G. & Lee, J.Y.M. (2014). Electricity consumption from renewable and nonrenewable sources and economic growth: Evidence from Latin American countries. Renewable and Sustainable Energy Reviews, 30, pp.290–298.

Apergis, N., Payne, J.E. (2009). Energy consumption and economic growth in Central America: Evidence from a panel cointegration and error correction model. Energy Economics, 31, 211-216.

Apergis, N., Payne, J.E. (2010). Renewable energy consumption and growth in Eurasia. Energy Economics, 32, 1392-1397.

Apergis, N., Payne, J.E. (2014). The electricity consumption-growth nexus: Renewable versus non-renewable electricity in central America. Energy Sources, Part B, 7, 423-431.

Baltagi, Badi. (2004). Econometric Analysis of Panel Data, John Wiley & Sons, Ltd.

Benavides, M., Ovalle, K., Torres, C., Vinces, T. (2017). Economic growth, renewable energy and methane emissions: Is there an enviromental Kuznets curve in Austria? International Journal of Energy Economics and Policy, 7(1), 259-267.

Ben Jebli, Mehdi & Ben Youssef, Slim. (2014). "Economic growth, combustible renewables and waste consumption and emissions in North Africa," MPRA Paper 55300, University Library of Munich, Germany.

Bhattacharya, M., Paramati, S.R., Ozturk, I., Bhattacharya, S. (2016). The effect of renewable energy consumption on economic growth: Evidence from top 38 countries. Applied Energy, 162, 733-741.

Chang, T.H., Huang, C.M. & Lee, M.C. (2009). Threshold effect of the economic growth rate on the renewable energy development from a change in energy price: Evidence from OECD countries. Energy Policy, 37(12), pp.5796–5802. Available at: http://dx.doi.org/10.1016/j.enpol.2009.08.049.

Dinda, S. (2004). Environmental Kuznets Curve Hypothesis: A survey. Ecol. Econ. 2004, 49, 431–455

Hassine, M.B., Harrathi, N. (2017). The causal links between economic growth, renewable energy, financial development and foreign trade in gulf cooperation council countries. International Journal of Energy Economics and Policy, 7(2), 76-85

International Renewable Energy Agency. 2019. IRENA (2019), Global Energy Transformation: A Roadmap to 2050. Global Energy Transformation. A Roadmap to 2050. https://www.irena.org/publications/2019/Apr/Global-energy-transformation-A-roadmap-to-2050-2019Edition.

REN21. 2019. Asia Status Report Partner.

Shahbaz, Muhammad, Chandrashekar Raghutla, Krishna Reddy Chittedi, Zhilun Jiao, and Xuan Vinh Vo. 2020. “The Effect of Renewable Energy Consumption on Economic Growth: Evidence from the Renewable Energy Country Attractive Index.” Energy 207: 118162. https://doi.org/10.1016/j.energy.2020.118162.

Silva S, Soares I, Pinho C. 2012. The impact of renewable energy sources on economic growth and CO2 emissions - a SVAR approach. European Research Studies.15:133–144.

Venkatraja, B. 2020. “Does Renewable Energy Affect Economic Growth? Evidence from Panel Data Estimation of BRIC Countries.” International Journal of Sustainable Development and World Ecology 27 (2): 107–13. https://doi.org/10.1080/13504509.2019.1679274.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Economics and Business Quarterly Reviews
Vol.4, No.2, 2021: 271-276
ISSN 2775-9237

DOI: 10.31014/aior.1992.04.02.363

An Application for the Impact of the Agricultural Labor Force and Employment Structure on the Economic Growth in Turkey

Işıl Tellalbaşı Mengüç[1]

[1] PhD. Istanbul/TURKEY. https://orcid.org/0000-0002-4357-9935
Email:isiltel@gmail.com

Abstract
In this research, agricultural employment and labor structure in Turkey between the years 1991-2019 aimed to investigate the impact on economic growth. In this framework, the relationship between agricultural employment (TI), agricultural male employment (TEI) and agricultural value added (TKD) and growth was analyzed using the World Bank Country Report. According to the results obtained in the study, the relationship of all three parameters with GDP is statistically highly significant ($p < 0.05$). However, when the analysis is repeated as year-controlled, the effect of agricultural added value on GDP becomes statistically insignificant ($p > 0.05$). The regression analysis results showed that only the TI variable, that is, the agricultural employment variable, had a significant effect on growth ($p < 0.05$). Apart from this, there is no statistically significant effect of male employment and agricultural value added parameters on growth in agriculture ($p > 0.05$). Increased employment in agricultural production in Turkey, has a negative effect on growth. It can be stated that the main reasons for this are that there are not enough agricultural innovations, modernization and technological developments.

Keywords: Growth, Labor, Employment, Agricultural Employment, Agricultural Added Value

1. Introduction

Conceptually, the growth implies an expansion and it is also development in line with the enhanced success. The growth in economy is possible with the financial development according to the economy theory. Because of this reason, it is necessary to clarify how the financial development could be possible at first in order to comprehend the growth. For centuries, particularly following the industrialization, the economic growth and development have been discussed and the importance of the subject even increased further together with the globalization on account of the relationships of the country economies (Durmuş, 2019; Auer et al., 2017; Dao, 2011; Blanchard et al., 2010; Barro, 2003; Barro, 1996; Romer, 1990).

The increase in income is necessary in order to reach the social and even political developments. The countries which grow strongly and on a continual basis could decrease their own poverty levels to a crucial extent, they

could reinforce their democratic and political stabilities, could improve the quality of their natural environments and even they could reduce the crime and violence cases. However, the economic growth does not bring solution for every problem. On the other hand, though its direct useful effects are limited, it considerably facilitates the implementation of the public programs which complete its effects and eliminate its deficiencies (Kraay, 2006; Khan et al., 2005; Wilson and Briscoe, 2004; Loayza and Soto, 2002; Ahmed, 1994; Caballe and Santos, 1993).

The human community is compelled to the process of continuous renewal of the production of various material commodities and services, in order to meet the increasing needs of the population. As we define these four stages, that is to say distribution, exchange and consumption, as the social reproduction, such continuous renewal of the production process is a general legality and obligation in each production style. We note that there is simple, scaled and extended social reproduction and the production volume could remain same or it may decrease or increase from year to year. The growth is necessary by means of taking into consideration the fact that the coverage of the social needs grows on a continual basis and then the general legality pushes the extended social reproduction process (Ivic, 2015). Although the studies relating to growth and agriculture have been performed relatively, no sufficient study has been encountered between the agricultural employment and the growth. Because of this reason, in this study, it is aimed to research the effect of the agricultural employment and manpower structure between the years 1991-2019 in Turkey on the economic growth.

2. Conceptual Framework

The economic growth is a new phenomenon in the human civilization. The per capita income in the Western Europe which had been at approximately the same or even lower level than the Chine and India until the 15th century then increased more than 30 times until the year 2000. Following the industrial revolutions which started in the ends of the 16th century in the West, it became possible with the usage of the scientific technology in production and the usage of much more sophisticated transportation means and communication tools in commerce (Bruno, 1995).

The positive growth of the economy indicates the existence of the higher living standards, quality and serial production, increase in the per capita income, higher educational levels and decrease in unemployment. The positive growth gives rise to an increase in the production of the goods and services. In a growing economy, there are lots of jobs and investment opportunities and the health, education and other fundamental living standards of the population improve as well. At this point, it is possible to say that the growth could be positive, zero or negative. In general, the positive growth implies development. The zero growth implies a balanced economy. In this case, no development is possible but it could still be considered as a risk factor in this epoch in which there are relationships between all of the world economies with the high increase of the technology and development. As it could also be understood by its name, the negative growth causes a financial crisis, high inflation and risks (Durmuş, 2019).

The growth performance in the world showed some huge differences between the regions and countries recently; in some economies, some great changes have been undergone within the course of time. For the entire world as a whole, the growth speed of the production per capita followed a reducing path beginning from the 1960s. To a certain extent, it reflects the inclination in the industrialized countries and the influence over the developing countries. However, there are some important differences between the geographical territories as well.

The economic growth rates in the Eastern Asia and Pacific region have been not only the highest but also most stable ones among all of the developing economies and it has shown a stable increase in the 1970s and 1980's and then it showed only a slight decrease in the 1990s. The East Asia had also relatively successful growth experience in the recent twenty years and the output growth rates per capita increased more than 3 percent in a year with an outstanding stability (Loayza and Soto, 2002).

Today, not only the do economists not agree on the trends and theories but also they describe the sources of the economic growth. They attach a special importance to the calculation of the growth, thus the components which cause the growth trends could be calculated properly. Japan and, in the previous period of 1930-1960, the Soviet

Union experienced a magnificent economic growth for years. The economy specialists discovered that GDP of Japan grew by 10% in a year because of the growth of the inputs with the rapid technological change, with the help of the calculation of the economic growth. While analyzing the growth of the Soviet Union in the above-mentioned period, it resulted from the increase in the compulsory capital and effort inputs (Ivic, 2015).

According to the economic history of the world, the long term growth rates and actually the average living standards fluctuated considerably within the course of time. The growth fluctuated around 0 percent until the year 1000. The per capita income differences between the richest and poorest regions of the world did not exceed 10 percent. Between 1000 – 1820, the global income increase per capita reached 0.05 percent at average in a year, from 0 percent in the poor regions of Africa to 0.14 percent in the richest areas of the Western Europe. Just before the Industrial Revolution, the income per capita in the richest regions of the world was roughly three times of the income in the poorest regions of the world (Balcerowicz and Rzonca, 2015).

The technological changes include the changes in the production processes or presenting new products in order to increase the output from the same amount of inputs or to increase the outputs. The most important technological developments in the modern world have been realized and experienced in the areas such as electronics, computers, telecommunication and aviation industry, etc. The technological change is a continuous process of smaller and bigger improvements, as it is shown by means of reaching millions of patents by most of the developed countries. Afterwards, the changes which were made in the military industrial complexes which were implemented in the civil production sector should be considered among the most important changes. The civil technological developments are much less dramatic, however it does not increase the contribution of the market economies to the living standards in a less affecting manner. Whenever we look at this subject from the neoclassical technological change model, it means that more outputs could be produced with the same capital and effort inputs and this will imply that such technological change forces the limitations of the arbitrary characteristics (Ivic, 2015).

3. Method

The data which are stated in the Table-1 which are compiled from the Country reports of the World Bank are used in the study.

Table 1: World Bank codes and explanations concerning the research variables

Code	Description	World Bank Codes
GDP	Growth	GDP per person employed (constant 2017 PPP $)
Tİ	Agricultural Employment	Employment in agriculture (% of total employment) (modeled ILO estimate)
TEİ	Agricultural Man Employment	Employment in agriculture, male (% of male employment) (modeled ILO estimate)
TKD	Agricultural Added Value	Agriculture, forestry, and fishing, value added (% of GDP)

The World Bank data are compiled from the values between the years 1991-2019 and it is refined from the seasonal effects and the deflator effects have been calculated as well.

In the analysis of the data, the SPSS 17.0 for Windows and Eviews 7.0 for Windows package programs were used. The measurement data are defined with the average and standard deviation values and, in addition to this, the maximum and minimum values are also given. The Kolmogorov Smirnov Test is used for the normality test of the data. The Augmented Dickey-Fuller unit root test (ADF) is used for the unit root test of the data. Because all of the data are distributed normally and they do not contain any unit root, the Pearson's Moments correlation, year controlled partial correlation and linear regression analyses are carried out. All of the analyses are realized at 95% confidence interval and 0.05 significance level.

4. Findings

The average, standard deviation, minimum and maximum values of the variables which are used in the study are given in the Table-2.

Table 2: The average, standard deviation, minimum and maximum values of the variables which are used in the study (1991-2019)

	Minimum	Maximum	Average	Standard Deviation
GDP (PPP $)	37404,76	82049,78	58887,22	14346,37
Tİ	18,11	29,76	24,93	3,61
TEİ	14,85	21,83	18,27	2,10
TKD	5,78	16,85	9,95	3,50

In the whole time interval, the GDP value is between 37404.76 and 2049.78 with the fixed price of 2017 and it has average value as 58887.22±14346.37. The agricultural employment is between 18.11% and 29.76%, the agricultural man employment is between 14.85% and 21.83% and the agricultural added value varies between 5.78% and 16.85%. The results of the Pearson's Moments correlation and the controlled correlation analysis for the correlation of the variables with GDP are provided in the Table-3.

Table 3: The results of the Pearson's Moments correlation and the controlled correlation analysis for the correlation of the variables with GDP

	Pearson's Correlation		Year controlled partial correlation	
	r	p	r	P
Tİ	-0.981**	0.000	-0.520**	0.005
TEİ	-0.970**	0.000	-0.410**	0.030
TKD	-0.900**	0.000	0.062	0.753

According to the correlation analysis results, the correlation of each of three parameters with GDP is highly significant statistically ($p<0.05$). However, whenever it is analyzed again with year control, the effect of the agricultural added value over GDP becomes statistically insignificant ($p>0.05$).

The results of the Augmented Dickey Fuller (ADF) unit root test for the variables of the study are given in the Table-4.

Table 4: The results of the Augmented Dickey Fuller (ADF) unit root test for the variables of the study

	T value	%1 KD	%5 KD	%10 KD	p
GDP (PPP $)	-0.262531	-3.689194	-2.971853	-2.625121	0.9186
Tİ	0.9075557	-3.724070	-2.986225	-2.632604	0.9939
TEİ	-0.040531	-3.689194	-2.971853	-2.625121	0.9467
TKD	-1.170026	-3.689194	-2.971853	-2.625121	0.6728

The ADV unit root test results indicate that there is no unit root in all of the research parameters and, because of this reason, the variables could be used in the model directly ($p>0.05$). The p values which are calculated for the variables are quite high. Because of this reason, no advanced analysis is performed with the Philip Peron or similar other unit root test.

In the study, the following model has been established for the effect of the agricultural employment and the manpower structure on the economic growth:

$$\mathbf{GDP = \beta_0 + \beta_1 x (Tİ) + \beta_2 x (TEİ) + \beta_1 x (TKD)}$$

The results of the regression analysis which is carried out for the test of the model are given in the Table-5.

Table 5: The results of the regression analysis concerning the research model

Variable	Beta	Std. Error	t-Statistic	p
Tİ	-3801.588	928.9404	-4.092392	0.0004
TEİ	711.6561	1870.911	0.380379	0.7069
TKD	-575.6117	416.0624	-1.383474	0.1787
C	146400.1	11617.91	12.60124	0.0000

R-squared	0.964568	Mean dependent ex.	58887.22
Adjusted R-squared	0.960317	S.D. dependent ex.	14346.37
S.E. of regression	2857.898	Akaike info criterion	18.88100
Sum squared resid	2.04E+08	Schwarz criterion	19.06959
Log likelihood	-269.7745	Hannan-Quinn criter.	18.94007
F-statistic	226.8614	Durbin-Watson stat	0.970974
Prob(F-statistic)	0.000000		

The regression analysis results indicated that only the TI variable, namely the agricultural employment variable, has significant effect on the growth ($p<0.05$). Apart from that, the man employment in agriculture and the agricultural added value parameters do not have any significant effect on growth statistically ($p>0.05$).

5. Discussion

In this study carried out, it is aimed to research the effect of the agricultural employment and the manpower structure on the economic growth between the years 1991-2019 in Turkey. In this framework, an electrometric and statistical analysis study is carried out over the World Bank data.

In literature, particularly in the economies with higher agricultural potentials and agricultural societies, it is reported that the agriculture is an important source of growth and employment. However, this situation has been changing recently and the effect of the agriculture in the effort or service-intensive markets and in the capital-intensive markets could be below the expected level in comparison with the other sectors. Consequently, while the direct effect of the agriculture on the economic growth was a more definite information and approach in the past, in today's modern economies, the situation is slightly different now (Durmuş, 2019; Kremer et al., 2009; Sepehri and Moshiri, 2004; Bruno and Easterly, 1998; Sarel, 1996; Bruno, 1995; Fischer, 1993). On the other hand, thanks to the advanced usage of the agricultural knowledge and technology at advanced levels in some countries, the agriculture has become a much more important economic value at the same time.

According to the results of the study obtained, whenever the employment in agriculture is examined with regard to the man employment rate in agriculture (it also represents the woman rate at the same time) and the agricultural added values, it is seen that it has negative effects on the economic growth. As a matter of fact, it is an expected situation because the yield and added value of the agricultural production reduce every day in our country and the costs of the production items other than the raw materials in the agricultural production increase gradually as well. In the year controlled correlation analysis, while only the agricultural added value is not in a significant correlation, the agricultural employment and the man employment in agriculture affect the growth negatively.

According to the regression analysis results, only the agricultural employment has significant effect on the growth and this effect is in negative direction. In other words, as the employment in agriculture increases, it has negative effect on the economic growth. While there could be lots of reasons for obtaining such results, the deficiencies in the agricultural policies, the country's economy and the capital structure could be listed as the potential reasons.

6. Conclusion

The study results indicate that, the increase of the employment in the agricultural production in Turkey makes a negative impact on the growth. It could be stated that the agriculturally sufficient renovation, modernization and technological developments do not take place among its main reasons. In particular, whenever lots of reasons get together such as the products which are made according to the market price in full every year and then could not be sold at the end of the year and decayed, the usage of the agricultural incentives for some different purposes, it would also be seen that the increase of the agricultural production and employment has a negative effect on growth. In the frame of the results which are obtained in the study, it is necessary to rehabilitate and modernize the agricultural employment urgently, to eliminate the deficiencies and failures resulting from the production planning and to establish a more effective production and marketing system in agricultural meaning. Besides that, by means of making crosswise comparisons with the different countries which became successful in agriculture for the advanced researches, it could be possible to explain the problematic of the study in a further detailed manner.

References

Ahmed, S. (1994). Explaining Pakistan's High Growth Performance over the Past Two Decades. South Asia Country Department III, World Bank, Washington, DC.

Auer, R. A., C. Borio, and A. Filardo. (2017). "The Globalization of Inflation: The Growing Importance of Global Value Chains." BIS Working Paper 602, Bank for International Settlements, Basel.

Balcerowicz L. and Rzonca, A. (2015). Puzzles of Economic Growth. International Bank for Reconstruction and Development / The World Bank.

Barro, R. J. (2003). 'Determinants of economic growth in a panel of countries', Annals of Economics and Finance, 4, 2 (November), 231-274.

Barro, R. J. (1996). 'Determinants of economic growth: A cross-country empirical study', NBER Working Paper 5698.

Blanchard, O. J., G. Dell'Ariccia, and P. Mauro. (2010). "Rethinking Macroeconomic Policy." Journal of Money, Credit, and Banking 42 (s1): 199-215.

Bruno, M. (1995). 'Does inflation really lower growth?' Finance and Development, September: 35-38.

Bruno, M. and Easterly, W. (1998). 'Inflation crises and long-run growth'. Journal of Monetary Economics, 41: 3–26.

Caballé, J., and Santos, M. (1993). 'On endogenous growth with physical and human capital', Journal of Political Economy, 101, 6 (December), 1042-1067.

Dao, M.Q. (2011). 'Debt and growth in developing countries', Economia Internazionale/International Economics, LXIV, 2 (May), 173-193.

Durmuş, A. (2019). High Inflation Risk And Growth Rate. International Journal of Social Science Research, 8 (1), 20-28.

Fischer, S. (1993). 'The role of macroeconomic factors in growth.' Journal of Monetary Economics, 32(3): 485-512.

Ivıc, MM. (2015). Economic Growth and Development. (JPMNT) Journal of Process Management – New Technologies, International, 3(1), 55-62.

Khan, A., A. Qayyum, and S. Sheikh. (2005). "Financial Development and Economic Growth: The Case of Pakistan." The Pakistan Development Review 44 (4): 819–37.

Kraay, A. (2006). 'When is Growth Pro-Poor? Evidence from a Panel of Countries'. Volume 80, Issue 1, pages 198-227. Journal of Development Economics.

Kremer, S., Bick, A. and Nautz, D. (2009). 'Inflation and Growth: New Evidence from a Dynamic Panel Threshold Analysis.' Economic Risk, SFB 649, Discussion Paper 036.

Loayza, N. and Soto, R. (2002). The Sources of Economic Growth: An Overview. Economic Growth: Sources, Trends and Cycles. Series on Central Banking, Analysis, and Economic Policies. 6.

Romer, P.M. (1990). 'Endogenous technological change', Journal of Political Economy, 98, 5 (October): pt. II, S71-S102.

Sarel, M. (1996). Nonlinear effects of inflation on economic growth. IMF Staff Papers, 43: 199- 215.

Sepehri, A. and Moshiri, A. (2004). 'Inflation-Growth Profiles across Countries: Evidence from Developing and Developed Countries.' International Review of Applied Economics, 18: 191–207.

Wilson, R. A. and Briscoe, G. (2004). The impact of human capital on economic growth: a review, Third report on vocational training research in Europe: background report. Luxembourg: Office for Official Publications of the European Communities.