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Towards Sustainable Consumption: Driving Forces behind Bangladeshi Consumers' Behavior

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Abstract

If stakeholders, service providers, and social systems adopt sustainable consumption behavior and regulate the production and consumption cycle, they may be facilitated to accomplish sustainable development with environmental and socioeconomic advantages. However, the purpose of this study was to look at the driving forces that influence consumer behavior in Bangladesh in terms of sustainable consumption. A quantitative survey was conducted among 384 participants aged ≥ 18 years and having minimum higher secondary educational qualifications. The data were collected from Khulna City Corporation of Bangladesh through a structured interview schedule using the convenience sampling technique. The results reported that environmental concern of the participants was found to be the top-ranked driving force and perceived environmental knowledge of the participants was the lowliest ranked driving force behind the consumers' behavior towards sustainable consumption. Alongside, attitude towards eco-friendly products, perceived consumer effectiveness and sustainable consumption intention were found to be the second, third and fourth ranked driving forces, respectively. The authors hope and anticipate that the findings of this paper will give critical information to relevant authorities and policymakers in order to develop market research and management policies and strategies.

Keywords: Sustainable Consumption, Driving Forces, Bangladeshi Consumers' Behavior

1. Introduction

The major obstacles to achieve sustainable development are unsustainable consumption patterns. The final goal of a society and the world cannot be accomplished towards the three fundamental directions of sustainable development without modifying our daily consumption patterns (Jaiswal & Singh, 2018; Joshi & Rahman, 2015; Peattie, 2010). Sustainable consumption possesses a modern approach to managing the economic demand side and not just focus on financial advantages, but also social and environmental welfare focus. These might thus make a significant contribution towards the ultimate objective of environmental sustainability. Consequently, the optimization of financial gain and generating commercial value for products that support the environment have

become the main sustainable marketing policy (Bonini & Oppenheim, 2008; Haron et al., 2005; Jaiswal & Singh, 2018).

It has already been estimated that consumers and interested parties have become more aware of environmental issues in this 21st century such as pollution, generation of waste and climate change. Therefore, they are now moving towards sustainable consumption practices for the well-being of future generations (Laroche et al., 2001; Ottman, 2011; Weber et al., 2015; Wei et al., 2017). The concept of sustainable or green consumption has therefore been initiated in the existing green consumerism context as a priority for academic researchers, practitioners and policymakers. Recognizing the driving forces that influence consumer behavior towards sustainable or green consumption helps government and authorities to create effective standards and regulations in an attempt to transform the production process of a firm or company. Evidence indicates that the user supports environmentally safe products like eco-labeling, environmental donations or recyclable packaging (Bartels & Hoogendam, 2011; Bougherara & Combris, 2009; Haron et al., 2005; Weber et al., 2015; Wei et al., 2017). Nevertheless, availability for environmentally friendly commodities did not correspond with the consumer environmental understanding and market support in the Asian countries (Chan, 2001; Jain & Kaur, 2006; Jaiswal & Singh, 2018; Lai & Cheng, 2016; Mostafa, 2007b; Wang et al., 2014).

Most of middle and higher-class communities' personnel are engaged in unnecessary consumption in Bangladesh. It has been documented that garbage of about 13,332 tons including 70% or more of organic waste, are produced per day in the capital city. Accordingly, residential sections consume about 53% of total electric energy, compared to 28% for industrial sections in this city. Moreover, the residential sections are consumed about 48% of the total electric energy that is generated in the country. The most efficacious choice for meeting global demand may be environmentally conscious use and energy conversion. Responsible, secure and efficient energy consumption may save about BDT 51 billion on aggregate per year. Furthermore, 30 gallons of water per head are wasted daily during homework, including washing dishes, brushing, showering, car washing, toilets etc. Unless we behave responsibly towards our pattern of consumption, we will surely experience catastrophic damage to the environment (Hossain, 2018; Programme, 2018).

This situation in Bangladesh emphasizes the requisite for studies on sustainable consumption. Moreover, according to our best knowledge, only a study has been conducted to determine influencing factors towards sustainable consumption (Hossain, 2018) and no studies have been conducted in Khulna city. Thus, the goal of this research was to investigate the driving forces that drive the consumers' behavior towards sustainable consumption in Bangladesh. This study will enable governments, policymakers and authorities to establish effective standards and regulations in the current world of globalization and sustainable development to evolve target markets.

2. Conceptual framework

A wide range of environmental difficulties confronted by the consumers could be the principal reason for changing from conventional and non-green consumption behaviors to greener or sustainable consumption patterns. The sustainable/environmental responsible consumption behavior is described as consuming sustainable/environmental responsible goods that are "protective/adaptable," "reusable/preserve able" and "compassionate/effective" (Mostafa, 2007a). Environmental and sustainable consumption behavior is not only a concern to buy green goods; but also consumers buy green goods because they will be benefited immediately from consumption (Vermillion & Peart, 2010). Consumers are aiming to change the environment through green or sustainable consumption, as reported by (Dagher & Itani, 2012). Consumers are adding a paradigm shift, namely the extent of corporate social responsibility towards environment and sustainability, while consuming products commercially available, added by (Kotler, 2011).

Therefore, the core philosophy of sustainable consumption incorporates a variety of principles that are consistent with the different processes of the determination of the motivating forces behind consumer behavior (Carrete et al., 2012; Chen & Chai, 2010; Ertz et al., 2016; Jaiswal & Singh, 2018; Kim, 2011; Kim & Choi, 2005; Lee, 2008; Mostafa, 2006; Newton & Meyer, 2013; Paul et al., 2016). Research has been shown that the environmental concerns of the consumer affect their positive attitude and behavior towards environmentally-friendly, green and

sustainable consumption behavior (Mostafa, 2007a; Paul et al., 2016; Yadav & Pathak, 2016). Several researchers in the field of sustainable consumption behavior have considerably emphasized on perceived consumer effectiveness following environmental concerns. They specifically expressed that the perceived consumer effectiveness is one of the largest measures of consumers' behavior towards sustainable consumption (Dagher & Itani, 2014; Jaiswal & Singh, 2018; Kim & Choi, 2005; Tan, 2011). Accordingly, various researchers have been suggested that the environmental knowledge of the consumers affects their positive attitude substantially and affects further their green or sustainable purchasing and consumption behavior directly and/or indirectly (Lai & Cheng, 2016; Mostafa, 2007a; Paul et al., 2016). With regard to attitude towards eco-friendly products interrelationship with sustainable consumption behavior, many scholars have reported that this attitude is a significant determinant of motivation in the environmental and sustainable behavior study and that the optimistic attitude towards eco-friendly products of the consumers will contribute to increased degree of green and sustainable consumption behavior (Chan, 2001; Lai & Cheng, 2016; Lee, 2008; Yadav & Pathak, 2016). Researchers have consistently reported that the green or sustainable consumption intention is a significant determinant of sustainable consumption behavior in the several literature of green or sustainable consumer psychology (Akehurst et al., 2012; Kanchanapibul et al., 2014; Kumar et al., 2017; Lai & Cheng, 2016; Mostafa, 2007b; Wei et al., 2017; Yadav & Pathak, 2016).

The assessment for the sustainable consumption behaviors may be summarized through five driving forces: (a) environmental concern (consumers' engagement and eagerness to deal with issues related to the environment reflects their good environmental conservation approach); (b) perceived consumer effectiveness (a person expectation or interpretation about one's activities may lead effectively to preserve the ecosystem); (c) perceived environmental knowledge (a person with a deep overview of environmental issues including pollution, recycling, the use and utilization of resources, renewable energies and other green technologies); (d) attitude towards eco-friendly products (consumer's convictions or thoughts about goods and services that are beneficial to the environment and their ecological consequences in consideration with favorable and unfavorable movements); (e) sustainable consumption intention (Eagerness and purchasing choices for products that are environmentally sound).

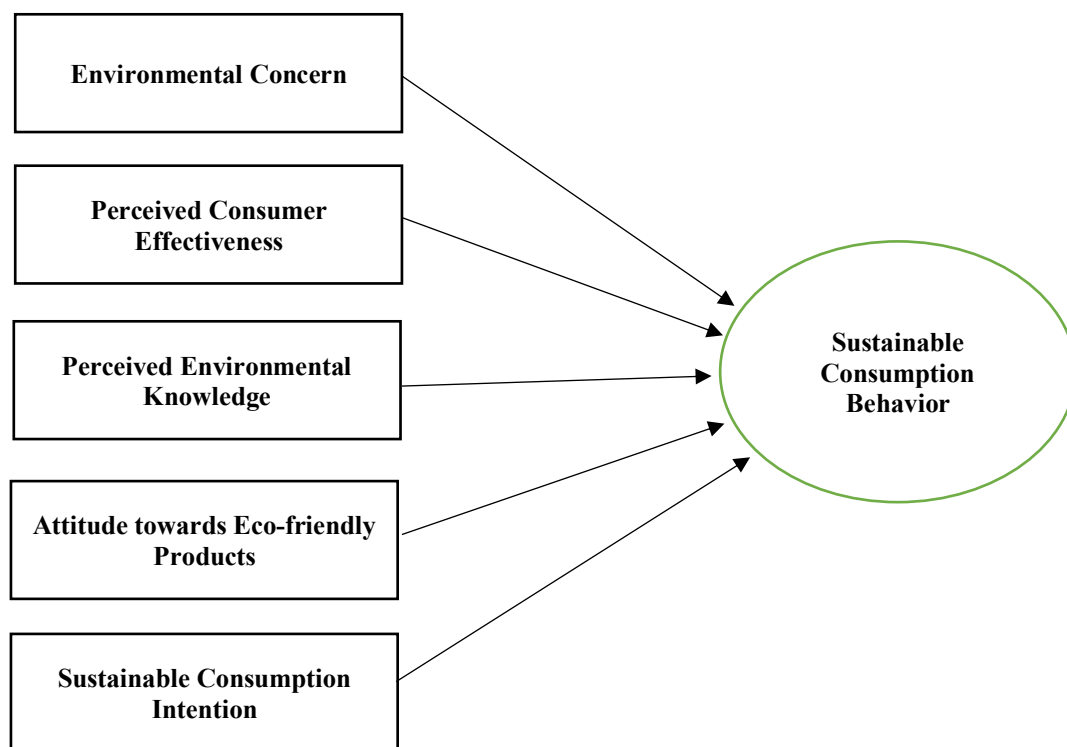


Figure 1: A conceptual framework

3. Material studied, area descriptions, methods and techniques

3.1. Study sites

A quantitative survey was taken to ascertain how environmental concern, perceived consumer effectiveness, perceived environmental knowledge, attitude towards eco-friendly products and sustainable consumption intention influence consumers' behavior towards sustainable consumption in Bangladesh. We placed the spatial emphasis on Khulna City Corporation (KCC) under Khulna district (South-western region) of Bangladesh based on the author's flexibility and availability to conduct the study.

Locating in the south-western region of the country, KCC is the third-largest city and second port entry of the country and covers an area of around 45.65 km² including around 1.5 million population. In 1884, KCC had been established as a Pouroshava (local government municipalities), which was later promoted as a Municipal Corporation in 1984 and declared as City Corporation in 1990. This City Corporation is comprised of 5 thanas (a kind of sub-district) and 31 wards (Banglapedia, 2014; Corporation, 2019). However, this study was carried out in Khulna Sadar thana and Sonadanga thana, which includes two largest residential areas of the city. Study area was selected by using purposive sampling.

3.2. Sample size determination and collection of data

In this analysis, we used only primary data to accomplish the study objective. In order to collect primary data on the driving forces behind consumers' behavior, a quantitative survey using an interview schedule with face-to-face conversations was carried out in the research sites. Respondents aged ≥ 18 years and having minimum higher secondary educational qualifications, were selected for this study by using purposive convenient sampling. Respondents who were willing to participate, were interviewed until the determined sample size has achieved. We had used the corresponding widely used formula for determining the sample size (Naing et al., 2006):

$$n = \frac{Z^2 P (1 - P)}{d^2}$$

Where n = Sample size; n' = Sample size with finite population correction; Z = The standard normal deviate, corresponding to a significance criterion of 0.05 (95%) = 1.96; d = Margin of error, we will tolerate which is ± 0.05 ; P = Incidence rate or proportion predicted, corresponding to a significance criterion of 0.5 (50%), we had included total 422,730 population including 250,651 population from Khulna Sadar thana and 172,079 population from Sonadanga thana (Banglapedia, 2014).

$$n = \frac{(1.96)^2 \times 0.5 (1 - 0.5)}{(0.05)^2} = 384.2$$

Therefore, we had enrolled 384 participants from the two study sites. To reduce the variance, we had used stratified sampling for data collection including 228 participants from Khulna Sadar thana and 156 participants from Sonadanga thana. The survey was conducted between the time span September, 2019 to January, 2020.

3.3. Research instruments

This research included standardized validated scales with few adjustments in order to evaluate environmental concern, perceived consumer effectiveness, perceived environmental knowledge, attitude towards eco-friendly products, sustainable consumption intention and sustainable consumption behavior in Bangladeshi context (Carrete et al., 2012; Chen & Chai, 2010; Ertz et al., 2016; Jaiswal & Singh, 2018; Kim, 2011; Kim & Choi, 2005; Lee, 2008; Mostafa, 2006; Newton & Meyer, 2013; Paul et al., 2016) that is reported in Table 1. All scale items have been based on a 3-point Likert scale ranging from 1 (disagree) to 3 (agree) with the exception of a 3-point Likert scale of the sustainable consumption behavior ranged between 1 (never) and 3 (always).

Table 1: Descriptive statistics analysis on driving forces of sustainable consumption behavior

Drivers		Mean	Std. Dev.
Environmental Concern			
EC1	I am worried about the worsening quality of the environment in Bangladesh	2.55	0.717
EC2	Bangladesh's environment is my major concern	2.65	0.604
EC3	I am emotionally involved in environmental protection issues in Bangladesh	2.33	0.783
EC4	I often think about how the environmental quality in Bangladesh can be improved	2.53	0.715
Perceived Consumer Effectiveness			
PCE1	Each person's behavior can have a positive effect on society by signing an appeal in support of promoting the environment	2.25	0.704
PCE2	I feel capable of helping solve the environmental problems	1.94	0.790
PCE3	I can protect the environment by buying products that are friendly to the environment	2.42	0.753
PCE4	I feel I can help to solve natural resource problems by conserving water and energy	2.32	0.751
Perceived Environmental Knowledge			
PEK1	I am very knowledgeable about environmental issues	2.05	0.841
PEK3	I know more about recycling than the average person	1.74	0.817
PEK3	I know how to select products and packages that reduce the amount of landfill waste	1.47	0.577
PEK4	I understand the environmental phrases and symbols on product package	1.81	0.804
PEK5	I know that I buy products and packages that are environmentally safe	1.74	0.822
Attitude towards Eco-friendly Products			
AEP1	I like to purchase eco-friendly products	2.43	0.618
AEP2	I have a favorable attitude towards purchasing a green version of a product	2.22	0.742
Sustainable Consumption Intention			
SCI1	I intend to reduce household's energy and water consumption	2.37	0.757
SCI2	I intend to spend on environmental friendly products	2.12	0.801
SCI3	I intent to avoid excessive packaging and polythene bag	2.27	0.739
Sustainable Consumption Behavior			
SCB	I choose to buy products that are reusable and/or recyclable and/or repairable and/or environment friendly	2.51	0.723

3.4. Statistical analysis

Depending on the descriptive and inferential statistics, the data were processed, analyzed and interpreted. Descriptive statistics present frequency, percentage, mean and standard deviation. Inferential statistics include Spearman's correlation to evaluate the association between sustainable consumption behavior and related drivers and principal component analysis (PCA) to investigate the driving forces of consumers' behavior towards sustainable consumption. By considering p-value <0.05 as statistical significance, the analysis was conducted in SPSS 20.0 Windows version.

4. Results and discussion

4.1. General characteristics of the participants

The general characteristics of the study participants are presented in Table 2. A total of 251 (65.4%) participants were male. The age group estimates of the participants appeared nearly identical, with about 52.6% (n= 202) of the participants aged ≥ 26 years including an average age of 29.25 (± 8.71) years. Educational status revealed that the majority of the participants were higher educated, with about 81.5% (n= 313) participants at least having a graduation degree. The majority of the participants (n= 302, 78.6%) were from a nuclear family. Approximately,

71.1% (n= 273) of the participants reported that their family income was ≤ 40000 BDT (≈ 471.87 USD) with an average of 38804.69 (± 9350.77) BDT (≈ 457.77 USD) per month.

Table 2: General characteristics of the participants

Characteristics	Frequency	Percentage
Age (years)		
18-25	182	47.4
≥ 26	202	52.6
	Mean = 29.25	Std. Dev. = 8.71
Gender		
Male	251	65.4
Female	133	34.6
Education		
Higher Secondary	71	18.5
Graduation	167	43.5
Post-graduation or more	146	38.0
Family type		
Extended	82	21.4
Nuclear	302	78.6
Family income per month (BDT)		
≤ 40000	273	71.1
> 40000	111	28.9
	Mean = 38804.69	Std. Dev. = 9350.77

4.2. Correlation between the related drivers and sustainable consumption behavior

The findings of the Spearman's correlation analysis are demonstrated in (Table 3). All the drivers under environmental concern are positively and significantly associated with the participants' sustainable consumption behavior. Among the drivers, EC1 is strongly correlated with SCB. EC2 and EC2 are moderately correlated and EC4 is weakly correlated with SCB of the participants, respectively. Accordingly, all the drivers under perceived consumer effectiveness are significantly associated with the participants' sustainable consumption behavior. Among the drivers, PCE3 is weakly and negatively correlated and PCE1, PCE2 and PCE3 are weakly and positively correlated with SCB of the participants, respectively. Two drivers under perceived environmental knowledge including PEK1 and PEK3 are weakly, negatively and significantly associated with the participants' sustainable consumption behavior. In addition, all the drivers under attitude towards eco-friendly products are moderately, positively and significantly associated with the participants' sustainable consumption behavior. Accordingly, all the drivers under perceived consumer effectiveness are significantly associated with the participants' sustainable consumption behavior. Among the drivers, SCI3 is weakly and negatively correlated and SCI1 and SCI2 are moderately and positively correlated with SCB of the participants, respectively.

Table 3: Correlation analysis between the related drivers and sustainable consumption behavior

Related Drivers	Sustainable Consumption Behavior (SCB)	
	R	p-value
EC1	0.718	<0.001**
EC2	0.334	<0.001**
EC3	0.472	<0.001**
EC4	0.298	<0.001**
PCE1	0.245	<0.001**
PCE2	0.120	0.019*
PCE3	-0.175	0.001**
PCE4	0.204	<0.001**
PEK1	-0.110	0.032*
PEK2	-0.079	0.120
PEK3	-0.114	0.025*
PEK4	0.009	0.858
PEK5	0.074	0.147
AEP1	0.549	<0.001**

AEP2	0.523	<0.001**
SCI1	0.412	<0.001**
SCI2	0.442	<0.001**
SCI3	-0.179	<0.001**

*p-value <0.05 (2-tailed); **p-value <0.01 (2-tailed).

4.3. Principal Component Analysis

In total, 18 variables (environmental concern= 4, perceived consumer effectiveness= 4, perceived environmental knowledge= 5, attitude towards eco-friendly products= 2, sustainable consumption intention= 3) were used in this research to investigate the factors relating to sustainable consumption behavior of the participants. Twelve (12) factors are identified as possible interpretations of the correlated variables, which are comparable from the predicted (18) variables, based on the PCA analytical model (Table 4). Based on significant level (0.5), six variables have been loaded significantly by the first factor, two variables have been loaded significantly by second factor, two variables have been loaded significantly by third factor, and only one variables have been loaded significantly by the fourth, fifth and sixth factor, successively.

Table 4: Rotated component factor loading, total variance, Kaiser–Meyer–Olkin measure of sampling adequacy and Bartlett's test of sphericity

Factor No.	Drivers	Driving Forces	Factor Loading	Communalities
1	SCI2	Sustainable Consumption Intention*	0.856	0.753
	SCI1	Sustainable Consumption Intention*	0.823	0.742
	AEP2	Attitude towards Eco-friendly Products*	0.666	0.713
	AEP1	Attitude towards Eco-friendly Products*	0.608	0.731
	PCE4	Perceived Consumer Effectiveness*	0.598	0.653
	EC1	Environmental Concern*	0.578	0.730
2	SCI3	Sustainable Consumption Intention	-0.777	0.702
	EC4	Environmental Concern*	0.773	0.723
	EC3	Environmental Concern*	0.669	0.794
3	EC2	Environmental Concern*	0.760	0.627
	PEK5	Perceived Environmental Knowledge*	0.738	0.692
4	PEK2	Perceived Environmental Knowledge	-0.674	0.464
	PCE1	Perceived Consumer Effectiveness*	0.646	0.589
	PEK3	Perceived Environmental Knowledge	-0.590	0.753
5	PCE2	Perceived Consumer Effectiveness	-0.830	0.707
-	PEK4	Perceived Environmental Knowledge	-	0.462
6	PEK1	Perceived Environmental Knowledge	-0.829	0.707
	PCE3	Perceived Consumer Effectiveness*	0.569	0.702

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.621

Bartlett's test of sphericity χ^2 (df): 2504.36 (153)

p-value <0.001

% of variance: 68.02

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

*Value of factor loading and communalities >0.5.

By considering the factor loading and communalities value >0.5, this study has found twelve variables under the listed five driving forces to examine rank order of driving forces behind the consumers' behavior towards sustainable consumption (Table 5). Environmental concern was found to be the top ranked driving force behind consumers' behavior towards sustainable consumption. On the contrary, perceived environmental knowledge was found to be the lowliest ranked driving force. Alongside, attitude towards eco-friendly products, perceived consumer effectiveness and sustainable consumption intention were found to be the second, third and fourth ranked driving forces, respectively.

Table 5: Driving forces ranked model

Driving Forces	No. of Variables	No. of Variables Control with Factor Loading, N (%)	Rank
Environmental Concern	4	4 (100%)	I
Perceived Consumer Effectiveness	4	3 (75%)	III
Perceived Environmental Knowledge	5	1 (20%)	V
Attitude towards Eco-friendly Products	2	2 (100%)	II
Sustainable Consumption Intention	3	2 (66.7%)	IV

4.4. Discussion

This research is focused on prior researches and demonstrates empirical evidence for such studies and adds the green or sustainable consumption behavior literature through the findings. There was a substantial relationship that has been found between green procurement and diverse drivers under five driving forces: environmental concern, perceived consumer effectiveness, perceived environmental knowledge, attitude towards eco-friendly products, sustainable consumption intention. These five driving forces might be used to optimize the green or sustainable consumption behavior of the consumers.

With regard to the environmental concern aspect, the much more a consumer is concerned regarding his environment, the greener goods this customer would consume. The concern is the psychological interest of the consumer in the environmental issue. This study found that environmental concern is the highly significant and top ranked driving force behind the consumers' behavior towards sustainable consumption. The positive association between environmental concerns and the sustainable or green consumption behavior was confirmed as previous findings by (Datta, 2011). With more concern people had for their environment, the much more sustainable or green consumption behavior had been developed, as indicated in the previous study by (Dagher & Itani, 2012). The findings of this research reveal that the attitude towards eco-friendly products calculation has been demonstrated to be the effectively significant and second ranked driving force for the sustainable consumption behavior of the consumer. The much more satisfactory attitude towards eco-friendly products contributes to a higher consumer behavior for green and environmentally friendly products which is consistent with previous study findings by (Chan, 2001; Jaiswal & Singh, 2018; Kumar et al., 2017; Wei et al., 2017). The perceived consumer effectiveness calculation has a positive and significant relationship to attitude towards green or eco-friendly products and thus contributes to consumer behavior in the direction of sustainable consumption, as reported by (Jaiswal & Singh, 2018; Kang et al., 2013; Tan, 2011). Accordingly, our study found that all the drivers under perceived consumer effectiveness expect one are significantly correlated with the sustainable consumption behavior and third ranked driving forces behind the consumers' behavior. Furthermore, sustainable consumption intention of the participants was found to be the fourth ranked driving force towards sustainable consumption behavior in this study. Whereas, previous research has reported sustainable or green consumption intention to be the strongest determinant of sustainable or green consumption behavior (Chan, 2001; Jaiswal & Singh, 2018; Kumar et al., 2017; Wei et al., 2017). This is inconsistency to our study. Nevertheless, perceived environmental knowledge was identified as the lowliest driving force towards sustainable consumption behavior of the participants in this study. There was no important relationship between perceived environmental knowledge and sustainable consumption behavior here in this research, which is that these results are closely similar line with the analysis by (Chan, 2001; Jaiswal & Singh, 2018) in the context of Asia. These results have implications on the design of policies, strategies and programs that support people and businesses in Bangladesh to maintain and strengthen sustainable consumer behavior.

5. Limitations and further research

While the results of this study identified and improved the conceptual framework of sustainable consumption behavior in accordance with the basic and literature context, there was little consideration of limitations on the particular subject under this study. Small sample size is the first limitation of this study. Future research should attempt to collect data from a larger sample. Data from a larger sample should be obtained in further researches. Secondly, a convenience sampling was used to collect data from a city corporation of Bangladesh which is also regarded as a major limitation of this study. Thus, the results do not represent the whole population Bangladesh.

Future research is recommended to conduct in other parts of the country. Thirdly, the research is focused completely on consumer responses. Future research should collect the data from other actors in order to analyze the significant implication of these five driving forces. Eventually, future researcher and scholars should analyze the theoretical foundation using a variety of other variables including eco-labeling, green advertising, green trust, and so on in the developing markets in Bangladesh. Last but not least, in the sense of emerging market economies in the current era of sustainable development, the authors hope and expect the findings of this article to provide crucial information for respective authorities and policy-makers to design market research and management policies and strategies.

Data availability

The data that support the findings of this study are not publicly available as the authors did not have ethical permissions to publish the data in a public repository. However, the data set may be available from the corresponding authors upon request.

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Conflict of interest

The authors declare no conflict of interest

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