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Original Article

The Role of Environmental Responsibility and Environmental Knowledge on Green Purchase Intention of Household Appliances in Bangladesh: Mediating Role of Environmental Concern

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Abstract: *Notable advancements have been made in the field of study concerning the determinants of environmentally conscious consumption in the last few years. However, no studies have explored how consumers feel about their obligation to the environment and how awareness affects their likelihood to engage in eco-friendly shopping. This current study explores the significance of responsibility and knowledge on consumer behavior, particularly when purchasing. It also investigates how environmental concern plays a role as a mediator. An online survey was distributed to 180 customers from Bangladesh to gather data for this study. The results show that knowledge is directly related to ecological responsibilities and influences the intention to make green purchases. Additionally, it was found that knowing the environment positively affects individuals' level of concern for it. However enough, it was observed that environmental responsibility does not have a positive influence on environmental concerns. Furthermore, the presence of knowledge encourages consumers' engagement in green purchasing behavior by influencing their degree of environmental consciousness. Nevertheless, it is crucial to acknowledge that there is no indirect relationship between environmental responsibility and ambition to make green purchases via environmental concern. The presence of environmental concern has a favorable impact on individuals' inclination to engage in green purchasing.*

Keywords: *Eco-friendly, Electronic Home Appliances, Environmental Knowledge, Environmental Responsibility, Green Purchase Intention.*

I. INTRODUCTION

The concept of sustainability has gained global significance due to the increasing awareness among individuals regarding their consumption patterns and the environment's ensuing effects (Sharma, Aswal, & Paul, 2022). Aiming to promote a sustainable future, it is imperative to get a comprehensive understanding of the intricate interplay between individuals and their surrounding environment. The degradation of the environment has been precipitated by the sustained mistreatment and overexploitation of substances of nature by humankind. It is imperative for individuals to proactively engage in efforts aimed at preserving the environment and its resources, particularly in light of the various ecological challenges and their impact on human existence. The environment can be impacted by consumption through various mechanisms. For example, increased rates of consumption (and hence increased production levels) lead to elevated inputs of materials and energies, along with heightened quantities of undesired byproducts. According to a study conducted by Teoh, Khor, and Wider (2022), household energy usage emerges as a prominent factor affecting overall energy consumption and exhibits a strong association with consumer behavior, specifically the inclination to acquire environmentally friendly home appliances. The residential sector, encompassing the direct energy use within households, accounts for 21% of global energy utilization (Lei, Cai, Liu, W. & Wang, 2022). Given the significant issue of global climate change, it is imperative to implement initiatives aimed at preserving the environment. The manner in which consumers engage in the procurement of energy-efficient products exerts a substantial influence on the preservation of the environment (Parveen & Chaudhary, 2022).

The practice of promoting environmentally friendly products and services is commonly referred to as "green marketing." The increasing number of individuals expressing apprehensions regarding climate-related consequences and their inclination towards adopting environmentally conscious financial practices has led to a surge in its popularity. One approach to addressing environmental concerns involves the consistent purchase of environmentally friendly products (Ramayah, Lee, & Mohamad, 2010; Nguyen, Yang, Nguyen, Johnson, & Cao, 2019; Sheng, Yue, & Xie, 2019). According to Grunert and Juhl's

(1995) estimation, around 40% of environmental damage can be attributed to consumer home purchases. Consumers have the ability to mitigate or lower the adverse effects on the natural environment by opting for environmentally friendly products. Prior research has indicated that consumers exhibit a favorable disposition towards environmental conservation (Vermeir & Verbeke, 2006; Webb Mohr, 2006; Liu, Wang, Shishime, & Fujitsuka, 2012). The phenomenon known as the "green attitude-activity gap" or "green purchasing inconsistency" has to do with the disproportion between consumers' positive views of environmentally friendly goods and their actual purchases of those things. This finding illustrates that while a majority of customers hold positive opinions towards environmentally-friendly products, their actual purchasing behavior does not consistently align with these attitudes. It is crucial to comprehend the underlying reasons behind the limited influence of consumer views towards the environment on their decision to engage in green purchasing. Several factors contribute to this disparity between consumer beliefs and behavior, including the availability and price of products, as well as social pressures (Joshi & Rahman, 2015).

There is a paucity of studies examining how customer responsibility for the environment affects green consumption (Yue, Sheng, She, & Xu, 2020). Engaging in responsible environmental behavior fosters an increased understanding and consciousness of the environment, resulting in several positive outcomes in terms of individuals' inclination to engage in pro-environmental activities. Consumers' tendency for environmentally conscious spending is influenced in a favorable manner by their level of environmental knowledge, thus influencing their environmentally conscious behaviors. The degree of environmental awareness exhibited by consumers has a notable influence on their inclination to participate in sustainable buying practices. An increased degree of knowledge typically facilitates the ability of businesses and government entities to effectively persuade individuals to participate in the use of ecologically sustainable products. Higher levels of education in Sweden are associated with a deeper understanding of the value of eco-friendly goods and a heightened comprehension of environmentally sustainable products. Consequently, those with better literacy tend to exhibit a larger inclination to provide the acquisition of a larger dollar amount of such materials (Awan & Raza, 2012). An elevated degree of risk perception results from heightened environmental consciousness. In order to comprehend behavioural intention and environmental concern, one must first comprehend risk perception and environmental awareness (Saari, Damberg, Frombling, & Ringle., 2021). Consumer intentions and behaviors regarding green purchasing could be aided by environmental knowledge. The impact of environmental awareness on green purchasing intention and behavior warrants further research in this area (Joshi & Rahman, 2015). Consequently, it is essential to consider the manner in which it affects environmentally conscious purchasing intentions and concerns. For governments and marketers to foster a positive attitude, they must produce credible advertisements, while manufacturers must produce environmentally friendly goods. Promoting a favorable perception of green products will not only increase their popularity but also contribute to the sustainability of the nation as they are more ecologically conscious (Sreen, Purbey, & Sadarangani, 2018).

II. THEORETICAL BACKGROUND OF THE STUDY

The norm activation model (NAM), initially introduced by Schwartz in 1977, is widely employed in the field of forecasting pro-environmental behavior. The paradigm of norm activation posits that an individual's feeling of responsibility is activated when they internalize societal rules as personal norms, hence fostering idealistic conduct. Environmental responsibility is often considered to be the foremost and fundamental psychological factor that influences individuals' pro-environmental behavior. (Hines, Hungerford, & Tomera, 1987; Wu & Yang, 2018; Rodrigues & Domingos, 2008). The Norm Activation Model places a significant focus on individual standards or a sense of moral obligation, which are separate and distinguishable from intentions. The recognition of actively participating in or abstaining from a certain behavior with associated outcomes sets individual norms and the responsibility for engaging in this behavior (Schwartz, 1997). Yue et al. (2020) are supported by a recent study that contributes to a novel area of investigation focused on exploring the association between personal environmental responsibility and green consumption within the context of China. In the Pakistani context, the study conducted by Jamil et al. (2022) examined customers' purchasing intentions towards energy-efficient equipment. The independent variables employed in the study were consumer social responsibility for energy efficiency and knowledge of eco-labels. Our research aims to investigate a specific product category, namely energy-efficient appliances (Chowdhury & Alamgir, 2021) and green electrical appliances (Sreen et al., 2018). The purpose of this research is to explore the association between environmental knowledge and understanding and the intention to purchase environmentally friendly electronic household appliances. Additionally, the investigators investigate the function of a mediator of environmental concern.

III. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

A) Green Consumption

The act of consumption encompasses various dimensions, including social, economic, and physical aspects. It is subject to the effect of an individual's personality, environment, and psychology, as well as the legal framework, regulations, political atmosphere, and social structures prevalent within their own community (Sarigollu, 2009). When people talk about "green consumption," they're referring to their efforts to reduce their negative influence on the environment through their product

purchases, their product usage, and their product disposal (Carlson and Kangun, 1993). The term "green consumption" was coined by Gilg, Barr, and Ford (2005) to describe the practice of purchasing things with a smaller environmental footprint. The term "green consumption" is often used to describe a collection of actions that are theoretically and practically complicated, as well as highly reliant on specific contexts. Whereas traditional consumption frequently entails the destruction of environmental resources, green consumption makes an effort to preserve them (Jackson, T., 2005). However, eco-conscious consumers spend their money on goods and services that they believe will affect the environment, either positively or negatively (Roberts, 1996). Between the early 1970s and 1995, the primary goal of green consumer research was to profile green customers and develop appropriate market segmentations based on a wide range of characteristics (Kilbourne and Beckmann, 1998). In the 1980s, the United States saw the birth of the first "green" brands, which saw rapid growth in the following decades. Although the market for environmentally friendly goods grew during the '90s, it was still quite small. At the turn of 2000, there was a resurgence in the American market for environmentally friendly goods. Sustainable growth may be possible if production, usage, and disposal of goods strike a green consumption balance that takes into account both consumer wants and environmental concerns. This is why it's important to study what drives green consumption so that we can spread these energy-saving and environmentally friendly habits (Zheng, Akter, Siddik, & Masukujjaman, 2020). The behavioral model developed by Van Raaij and Verhallen (1983) aims to analyze the energy consumption patterns of households, with a particular focus on the impact of social-demographic, economic, and behavioral aspects. Hence, the act of consumers contemplating the environmental impacts, both positive and negative, when purchasing electronic household goods can be classified as a manifestation of green consumption intention.

B) Green Electronic Home Appliances

In broad terms, a "green home appliance" refers to an energy-efficient gadget intended to improve electrical appliances' energy efficiency and lower the cost of energy use. A range of domestic appliances, including air conditioners, heating systems, lighting fixtures, laundry machines, refrigerators, microwaves, and televisions, exhibit environmentally conscious characteristics. The energy consumption of the appliance will be reduced if it possesses a higher level of energy efficiency. For example, the utilization of inverter and remote sensor technology in operating the air conditioner has the potential to reduce electricity consumption by around 25% to 30% (King & Perry, 2017; Teoh et al.,2022). Energy-efficient equipment and appliances utilize various technologies with the aim of minimizing the energy consumption per unit of product. The implementation of energy-efficient equipment and appliances can contribute to a reduction in electricity consumption among residential consumers, hence alleviating the burden on the power system. The utilization of energy-efficient equipment will effectively help in the preservation and decrease in carbon emissions of environmental sustainability (Khan & Parvaiz, 2013; Waris & Ahmed, 2020). The utilization of energy-efficient household appliances is regarded as a significant approach to mitigating the release of carbon emissions into the atmosphere (Mills & Schleich, 2013). The projected energy conservation resulting from four primary household appliances, namely the Refrigerator, Air Conditioner, Fan, and Television, is expected to range between 52 and 145 billion kilowatt-hours (kWh) by the year 2030. This amount represents a substantial proportion, potentially reaching up to 27%, of the total energy consumption. It is projected that by the year 2030, the utilization of energy-efficient appliances will lead to a decrease in carbon emissions by around 30% (Parikh & Parikh, 2016). According to empirical research, enhancing consumer engagement in the adoption of energy-conserving appliances has a crucial role in mitigating residential energy consumption and thus reducing the associated greenhouse gas emissions (Li, Li, Jin, & Wang, 2019).

C) Environmental Knowledge

To develop an ecological worldview, one must have environmental knowledge, which is "the person's factual understanding of the environment." (Kaiser et al., 1999). According to the available literature, there is consistently a strong positive relationship between knowledge and a person's attitude towards participating in sustainable or environmental activities (Chan, 1996; Harry, Gale, & Hendee,1969; Wiidegren, 1998; Devall, 1970; Arbuthnot, 1977; Mostafa, 2006). Knowledge of the environment provides a favorable and statistically significant justification for actions that support the environment. Modifications in pro-environmental conduct can be attributed to acquired environmental knowledge (intrinsic factors) (Amoah & Addoah 2021). Those individuals who possess greater personal environmental awareness are more likely to take positive environmental action. Families that care about the environment are more likely to buy fuel-efficient automobiles (Flamm, 2009). Knowledge about the environment has a major impact on consumers' norms and their propensity to buy environmentally friendly products (Qureshi, Kashkheli, & Raza, 2022). The inclination to engage in environmentally conscious consumption was adversely affected by a lack of available information (Connell, 2010; Padel & Foster, 2005). The acquisition of environmental knowledge has promise to mitigate the psychological barriers faced by young consumers in engaging in pro-environmental behaviour while also fostering the adoption of more sustainable energy consumption practices (Dursun, Tümer, & Tuğer, 2019). The correlation between knowledge and attitude implies that greater environmental awareness may serve as a significant catalyst for promoting green consumer behavior.

H1. Environmental knowledge has a significant relationship with green purchase intention.
H2. Environmental knowledge has a positive relation between environmental concern.

***D) Environmental Responsibility*:**

The norm activation model, a theoretical framework widely employed in the fields of consumer behavior, environmental sociology, and environmental education, offers a valuable approach to evaluating levels of environmental responsibility (Slavoljub, Zivkovic, Sladjana, Dragica, & Zorica, 2015). Environmental responsibility can be understood as a condition in which an individual demonstrates a willingness to engage in activities aimed at addressing environmental issues rather than solely prioritizing their own economic interests as a consumer. This perspective is rooted in a collective understanding of the interdependence between society and the environment, emphasizing the importance of promoting the well-being of both. (Stone, Barnes, & Montgomery, 1995). Environmental obligation can make people more aware of the environment and encourage them to buy green products. Being responsible for the environment has a lot of positive effects, including caring about the environment and wanting to do actions that will benefit the environment (Yue et al., 2020). Consumers' sense of environmental anxiety plays a major role in shaping their propensity to buy green products. Environmental accountability refers to the sense of obligation and responsibility that people possess when they are eager to attempt to resolve ecological and environmental issues, and it is a crucial component in the explanation of environmentally friendly actions. Environmental responsibilities will motivate Chinese consumers to prioritize environmental protection and engage in more sustainable consumption patterns, according to a study on household appliance energy efficiency and consumer involvement (Sheng et al., 2019).

H3. Environmental responsibility has positive effect on green purchase intention.
H4. Environmental responsibility has positive relationship with environmental concern.

E) Environmental Concern and Green Purchase Intention:

Ecological concerns have a major impact on consumers' decision-making processes. Because of this, consumers are more likely to buy eco-friendly products (Aman, Harun, Hussein, & Author, 2012). People often use the terms "environmental attitude" and "environmental concern" interchangeably; both refer to a person's thoughts, feelings, and intentions in relation to environmental activities or behaviors (Chan, Hon, Chan, & Okumus, 2014). Consumers who have developed a deep concern for natural goods are becoming more and more preferred by the environment over conventional ones. Consumers are not as likely to pick green items over non-green alternatives due to their lack of environmental consciousness and lack of knowledge about the advantages of green products. They may also believe that the government and big businesses should be in charge of environmental protection (Majeed, Ahmed, & Rasheed, 2021). Through the practice of energy conservation, individuals have the ability to decrease their overall energy use, thus mitigating their carbon footprint and averting detrimental environmental consequences, including global warming. One notable environmental benefit associated with this particular method is its capacity to conserve energy (Banfi, Farsi, Filippini, & Jakob, 2008). Sustainable consumer behavior is primarily influenced by environmental concern, as manifested through behavioral intention (Saari et al., 2021). The objective of increasing green product purchases can be achieved by appealing to consumers' environmental concerns (Kamalanon, Chen, & Y Le, 2022). Therefore , we propose the following hypothesis.

H5. Environmental concern has positive relation with green purchase intention.

F) Mediating Role of Environmental Concern

People who care about the environment are more inclined to focus on environmental concerns and buy green products, as shown by research by Sadachar, Feng, Karpova, and Manchiraju (2016). Environmentally conscious individuals are more inclined to purchase items powered by renewable resources, made from recycled materials, or grown using organic methods. According to an earlier survey, consumers who cared the most about the environment were also the most aware of green technologies and products. Moral, ethical, and behavioral shifts brought to light by environmental challenges have substantial effects on the development of ecologically friendly technological products (Kalafatis, Pollard, & Tsogas, 1999). Customers who believed it was their responsibility to improve the environment were found to be more inclined to purchase goods with less environmental impact and more conscious of environmental issues by the research team of Young, Hwang, McDonald, and Oates (2010). Accordingly, environmental worries will filter through environmental repercussions before reaching pro-environmental goals (Yue et al., 2020). Consequently, we suggest the following hypotheses.

H6. Environmental concern has a significant mediating influence between Environmental responsibility and green purchase intention.
H7. Environmental concern has positive mediating role between environmental knowledge and green purchase intention.

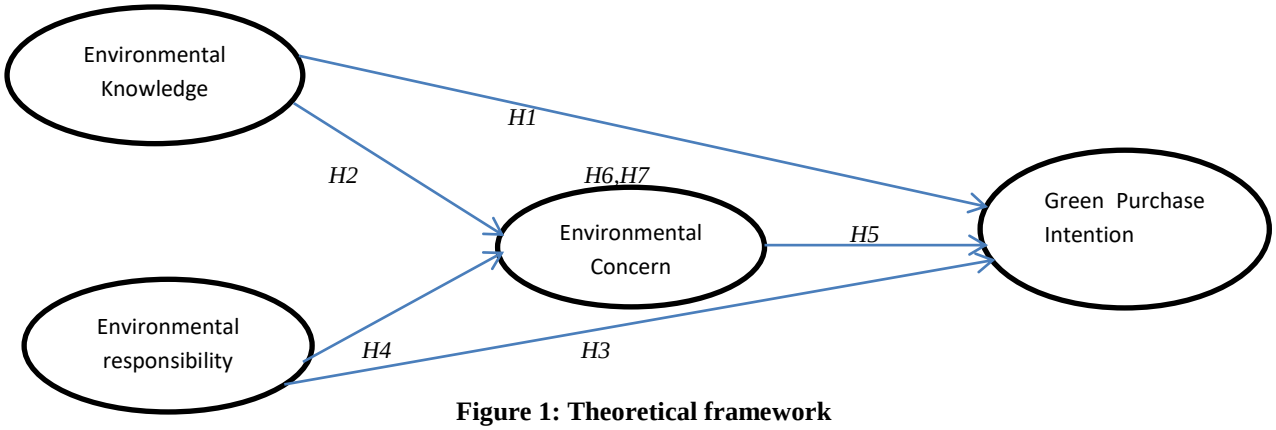

Figure 1: Theoretical framework

IV. METHODOLOGY

A) Research Target

The authors chose users of electronic household equipment as research subjects for their study. Data was collected by communicating the objective and outcomes of preliminary research to the appropriate respondents via email, WhatsApp, and Facebook Messenger. The authors used the convenience sampling method to collect a total of 180 questionnaires for sample selection. The authors removed 18 surveys from the collection because they were deemed untrustworthy or had ruined (blank) responses, leaving 162 for the real research. According to the data presented in Table 1, a majority of the participants, specifically 124 individuals (76.5%), were identified as male, whereas a smaller proportion of the participants, specifically 38 individuals (38%), were identified as female. Out of the total sample size, 57 individuals, accounting for 35.2% of the participants, fell into the age range of 25 to 30 years. Among the respondents, 49.4% (80 participants) held a Master's degree or PhD, while 46.9% (76 participants) held a Bachelor's degree. A total of 44 participants, accounting for 27.2% of the sample, stated possessing knowledge about green products ranging up to 20%. Additionally, 41 individuals, representing 25.3% of the sample, indicated having knowledge between 41% and 60%.

Table 1: General information of the respondents

	Frequency (*N*)	**(%)**
Gender		
Male	124	76.5
Female	38	23.5
Age		
Under 25 years	44	27.2
25-30 years	57	35.2
31-35	17	10.5
36-40	41	25.3
41 and above	3	1.9
Education		
Secondary School	1	.6
Higher Secondary School	5	3.1
Bachelor Degree	76	46.9
Master's degree or PhD	80	49.4
Level of green product knowledge		
Upto 20%	44	27.2
From 21% to 40 %	29	17.9
From 41% to 60%	41	25.3
From 61% to 80%	35	21.6
From 81% to 100%	12	7.4

B) Research Tools

The researchers employed a questionnaire as the primary instrument for attaining the aims of this investigation. The authors made adaptations to existing methods previously employed to evaluate the authenticity and dependability of the questions in other research activities. The authors adapted the items of Environmental Knowledge from Mostafa (2007), Environmental Responsibility from Sinnappan & Rahman (2011), Environmental Concern from Chan et al. (2014), and Green

purchase Intention from Zhang et al. (2018). The participants were asked a series of five questions to gather general information about their characteristics. These questions included inquiries about their gender, age, education level, monthly family income, monthly family expenditure, knowledge about green home appliances, and frequency of purchase. The questionnaire assessed Environmental Knowledge, Environmental Responsibility, Environmental Concern and Green Purchase intention by the application of a five-point Likert-type scale, with 1 denoting strong disagreement and 5 strongly agreement. After determining which surveys had invalid or unreliable responses, the authors coded the remaining questionnaires according to the following approach in SPSS Win ver. 18.0.

V. RESULTS AND DISCUSSION

A) Validity and Reliability of the Questionnaire

In this study, factor evaluation was used to establish the construct reliability of the instrument. Only questions with factor loadings greater than 0.50 were included in the study, and the factors were calculated using a criterion of a minimum eigenvalue of 1.0. Bartlett's Test of Sphericity results were significant, $x^2(n = 91) = 493.25$, ($p < 0.001$), which indicates its suitability for factor analysis. The KMO measure of sampling adequacy (MSA) result is 0.794, which is significant as it is more than 0.70. Additionally, each factor's dependability was evaluated using Cronbach's alpha coefficient, a statistical measure employed to assess the internal consistency of the questionnaire items. The results reveal that the Environmental Knowledge scale with four items (α= .762), Environmental Responsibility scale with three items (α=.706), Environmental Concern scale with three items (α= .643) and Green Purchase Intention scale with four items (α=.741).

Table 2

Constructs	Items	Factor Loadings	Eigenvalue	% of Variance	Cronbach's Alpha if the item is deleted	Cronbach's Alpha (α) value
Environmental Knowledge	EK1	**.574**	3.70	28.46	.663	.762
	EK2	**.572**			.690	
	EK3	**.526**			.688	
	EK4	**.538**			.769	
Environmental Responsibility	ER2	**.789**	1.791	13.780	.614	.706
	ER3	**.808**			.528	
	ER4	**.578**			.706	
Environmental Concern	EC2	**.585**	1.182	9.095	.624	.643
	EC3	**.566**			.601	
	EC4	**.503**			.394	
Green Purchase Intention	GPI1	**.682**	1.029	7.916	.705	.741
	GPI2	**.727**			.657	
	GPI3	**.583**			.704	
	GPI4	**.656**			.658	

B) Correlation between Environmental Knowledge, Environmental Responsibility, Environmental Concern and Green Purchase Intention

Correlation analysis is performed to identify the relationship between Environmental Knowledge, Environmental Responsibility, Environmental Concern and Green Purchase Intention. Pearson product correlation of Environmental Knowledge and Green Purchase Intention is found to be positive and statistically significant (r =.520, p<.001). Correlation between Environmental Concern and Green Purchase Intention is also significant (r = .495, p<.01). Correlation between Environmental Knowledge and Environmental Concern is also significant (r = .271, p<.01). Correlation between Environmental Responsibility and Green Purchase Intention is also significant (r = .194, p<.01). On the other hand, the connection between Environmental Knowledge and Environmental Responsibility is not statistically significant (r = .105, p> .05).

Table 3

	Mean	SD	Environmental Knowledge	Environmental Responsibility	Environmental Concern	Green Purchase Intention
Environmental Knowledge	3.71	.57	1			
Environmental Responsibility	3.80	.64	.105	1		
Environmental Concern	3.78	.50	.271**	.117	1	

Green Purchase Intention	3.88	.59	.520**	.194*	.495**	1

C) Effect of Environmental Knowledge and Environmental Responsibility on Green Purchase Intention

Table 4 shows the results of the multiple regression analysis performed to identify the impact of Environmental Knowledge and Environmental Responsibility on Green Purchase Intention. Environmental knowledge has a strong effect on Green Purchase Intention (β = .505, t= 2.104, p= .000). Whereas Environmental Responsibility has a moderately positive significant effect on Green Purchase Intention (β= 2.104, t= 2.104, p<.05. Hence, hypothesis 1 and hypothesis 3 is supported.

Table 4. Regression coefficients

Independent Variable	B	Std. Error	β	t	p
(Constant)	1.445	.332		4.350	.000
Environmental Responsibility	.130	.062	.141	2.104	.037
Environmental Knowledge	.522	.069	.505	7.519	.000

R^2 =.290, F=32.498, p<0.5

D) Effect of Environmental Knowledge and Environmental Responsibility on Environmental Concerns

Table 5 shows the outcomes of the impact study carried out using multiple regression of Environmental Knowledge and Environmental Responsibility on Green Purchase Intention. Environmental knowledge has a strong effect on Green Purchase Intention (β = .262, t= 3.426, p<.05). Whereas Environmental Responsibility doesn't have any significant effect on Green Purchase Intention (β= .090, t= 1.172, p>.05. Hence hypothesis 2 is supported. On the other hand, hypothesis 4 is rejected.

Table 5

Independent Variable	B	Std. Error	β	t	p
(Constant)	2.665	.319		8.342	.000
Environmental Responsibility	.069	.059	.090	1.172	.243
Environmental Knowledge	.229	.067	.262	3.426	.001

R^2 =.081, F=7.051, p<0.5

E) Effect of Environmental Concern on Green Purchase Intention

Table 5 displays the findings from the regression analysis that was done to determine the influence of Environmental Concern on Green Purchase Intention. Environmental concern has a significant effect on Green Purchase Intention (β = .495, t= 7.215, p= .000). Hence, hypothesis 5 is supported.

Table 6

Independent Variable	B	Std. Error	β	t	p
(Constant)	1.663	.310		5.370	.000
Environmental Concern	.586	.081	.495	7.215	.000

R^2 =.245, F=52.06, p=00

F) Mediation effect analysis

By using the Sobel test calculator, the findings show that environmental awareness significantly modifies the connection. between environmental knowledge and green purchase intention(β=0.134,t= 3.09,p<0.05). Therefore, Hypothesis 6 is supported. On the other hand, environmental concern doesn't have a significant positive mediating effect on the effect between environmental responsibility and green purchase intention (β = .04, t=1.024, p>.05). Thus, hypothesis 7 is rejected.

Table 7

Mediation	β	t value	Standard error	P value
Environmental Knowledge → Environmental Concern → Green Purchase Intention	0.134	3.09	0.043	.001
Environmental Responsibility → Environmental Concern → Green Purchase Intention	0.04	1.024	0.039	0.305

G) Discussion

This research aimed to ascertain the correlation between Environmental Knowledge, Environmental Responsibility, Environmental Concern, and Green Purchase Intention. The subsequent discourse centers on the primary discoveries that resulted from the correlation analysis and multiple regression analysis. The researchers conducted a study to examine the influence of consumers' environmental knowledge and environmental responsibility on their intention to purchase green electronic home appliances. The results show that environmental responsibility and knowledge are related and have a

statistically significant direct effect on consumers' intention to purchase green electronic home appliances. Besides these, Environmental Concern provides a moderating influence on the relationship between environmental Knowledge and Green purchase intention. This indicates that environmental knowledge triggers the consumer's environmental concern, increasing the consumer's green purchase intention of electronic home appliances. In contrast, environmental concern doesn't have a mediating role between environmental accountability and consumers' green purchase Intention. The findings also disclosed that environmental knowledge can increase the consumer's environmental concern.

On the contrary, environmental responsibility can't increase the consumer's environmental concern. Moreover, environmentally concerned consumers are more likely to purchase eco-friendly electronic household appliances. As a result, marketers should create a range of marketing initiatives that raise consumers' knowledge about the environment to promote environmental consciousness and persuade them to buy such products as environmentally sustainable household appliances.

VI. CONCLUSION

This study focuses on ecologically friendly electrical household gadgets. The research area investigates customer decisions on environmental knowledge, responsibility regarding the environment, concern for the environment, and green purchase intentions. The consumer who is knowledgeable about environmentally sustainable items exhibits a desire to purchase eco-friendly household appliances. It has been demonstrated that customers' intentions to engage in green purchasing can be impacted by their understanding of environmental issues. Customers' environmental knowledge and sense of responsibility can help to improve their comprehension. It may be deduced that environmental knowledge and responsibility significantly impact how buyers feel about goods such as eco-labels, which distinguish the qualities of environmentally friendly things.

A) Implications of the study

Green consumerism is a way of thinking that advocates for energy efficiency, which, in the end, reduces carbon emissions, decreases utility bills, and increases economic gains while enabling economies to meet rising energy demands. Bangladesh government is committed to attaining SDG goal number 12 –Responsible consumption and production. For attaining this, green consumption behavior can play a pivotal role. Without the concerted effort by the people of Bangladesh, the government can't do anything. The result of the study can be helpful at the Bangladeshi government's policy level. Bangladesh's market for electronic equipment has grown fast over the past ten years, almost tripling to $2.4 billion, thanks to economic growth that has strengthened the country's middle class. By 2030, the market for televisions, refrigerators, washing machines, and other household appliances will have increased by a factor of four to $10 billion yearly, predicts UCB Asset Management, a new-generation investment sector organization. So, it's important for the domestic and foreign companies who are conducting their businesses in Bangladesh. The result of the study can give them an idea about Bangladeshi consumers' green sensitivity. This study will allow knowing how the features of a green product influence green purchase behavior. Actually, Bangladeshi consumers are price and quality-sensitive. If a green product has better functionality, it can influence the customers buying behavior. This study will also add value to the Norm activation model through examining the independent variable environmental knowledge.

B) Limitations and future directions

This study is subject to two distinct constraints. Firstly, this research uses household appliances in Bangladesh to investigate the causal link between individuals' sense of environmental duty, their level of environmental awareness, their level of environmental care, and their intentions to increase their green consumption. However, more study is required to ascertain if the results are generalizable to other eco-friendly products and international boundaries. Future research into the process by which environmental consciousness contributes to green consumption can benefit from data collection on a wider variety of green products from multiple countries. Secondly, we wanted to see how environmental awareness and consciousness would affect people's intentions to buy green products. The potential moderating influence was not explored in this research since we were only interested in the mediating role of environmental concern. The price, quality, and accessibility of environmentally friendly products are all potential moderators that might be investigated in further research.

Conflict of Interests

The author(s) have disclosed that they have no conflicts of interest pertaining to the investigation, the authorship, and/or publishing of this work.

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