

CUSTOMER LOYALTY

PRO-ENVIRONMENTAL PRODUCTS

MEDIATING LOYALTY

DETERMINANTS MEDIATING

PRODUCTS

Determinants of Customer Loyalty Towards Pro-Environmental Products: the Mediating Role of Intentions

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Abstract

The research aims to determine the influencing factors of customer intentions and loyalty towards pro-environmental products. More specifically, the study seeks to extend the theory of planned behavior (TPB), including environmental concern, social responsibility, and self-responsibility, to investigate the effect on customer intentions and loyalty. Moreover, the study explores the mediating impact of intentions in the association between attitude, subjective norms, perceived behavioral control, environmental concern, social responsibility, self-responsibility, and customer loyalty. The study adopted a convenience sampling technique, where a minimum of 20 years older people with minimum HSC level of education were selected as respondents. 401 usable data was collected through five-point Likert and subsequently analyzed by Smart PLS 3.3.3 to measure the measurement and structural model. The study results revealed that Attitude, perceived behavioral control, environmental concern, and self-responsibility had significant direct effects on customer loyalty. Also, attitude, perceived behavioral control, and environmental concern significantly influenced customers' intentions. However, the study revealed that subjective norms and social responsibility had an insignificant impact on customer loyalty. Subjective norms, social responsibility, and self-responsibility had an insignificant influence on customer intentions.

Moreover, the study findings revealed that intentions partially mediate the relationship between Attitude, perceived behavioral control, environmental concern, and customer loyalty. However, intentions have no mediating effect on the link between subjective norms, social responsibility, self-responsibility, and customer loyalty. This study might provide academicians and managers insights into factors influencing customers' intentions and loyalty towards pro-environmental products.

Keywords: Theory of planned behavior (TPB), environmental concern, social responsibility, self-responsibility, pro-environmental products, customer loyalty.

1.0 Introduction

Global warming is a well-known and cogitative issue for our country and the world. Global warming means global climate change, which affects the planet and its inhabitants. It becomes a complex issue for the natural environment generating several problems for humans, plants, and other animals. To get rid of the several issues, various steps have been taken to ebb global warming. Among those steps, using pro-environmental products may be imperative to lessen global warming through energy saving. A pro-environmental product refers to a product with a minimum negative impact on the environment and is biodegradable, carbon-neutral, and recyclable (Pickett-Baker & Ozaki, 2008). The worldwide conference and global dialogue have been raised for a few decades on this issue. Subsequently, customers' self-responsibility, environmental concern, and social responsibility are emphasized.

Moreover, usages of pro-environmental products reduce household pollutions. That is to say, pro-environmental products are imperative to save our green earth. Several factors are kept in customers' minds whenever they use products saving the environment and world- consider eco-friendly principles and habits. Also, Environmental ethics are essential to reduce unnecessary consumption.

However, the number of pro-environmental product users in Bangladesh is not growing because customers are not aware of the consequences of using pro-environmental products. Thus, Trivedi et al. (2015) demonstrated that to be more knowledgeable about pro-environmental products and use more and more customers should keep in mind that pro-environmental products are eco-friendly and harmless for habitats, which strongly influence customer's intentions. Pro-environmental products are good things for saving individuals' health and environmental sustainability (Ansari et al., 2021). Zeng et al. (2019) also pointed out that environmental concern, personality, and social pressure are emphasized on reducing unnecessary consumption and inducing positive intentions towards pro-environmental products. Researchers Zeng et al. (2019) and Meier et al. (2015) consented that the biodiversity and nutrient content can be maintained through farming and manufacturing more environment-friendly products. Also, Meier et

al. (2015) claimed that environment-friendly products strengthen the sustainability of the environment.

However, very few studies (Yu et al., 2017; Coşkun et al., 2017) studied pro-environmental product purchase intentions and loyalty. Therefore, the study explores the influencing factors of customers' intentions and loyalty towards pro-environmental products. To the best knowledge, no previous analysis identified the effect of social responsibility, self-responsibility, and environmental concern along with attitude, subjective norms, and perceived behavioral control on customer's intentions and loyalty. Specifically, no previous study measured the intervening influence of intentions on the association between social responsibility, self-responsibility, environmental concern, and customer loyalty. Hence, the study develops a causal relationship to measure the effect of attitude, subjective norms, perceived behavioral control, environmental concern, social responsibility, and self-responsibility on customer intentions and loyalty and the mediating effect of intentions in the relationship between attitude, subjective norms, perceived behavioral control, environmental concern, social responsibility, self-responsibility, and customer loyalty.

The present study investigates the effect of a casual relationship between attitude, subjective norms, perceived behavioral control, environmental concern, social responsibility, and self-responsibility, and customer's intentions and loyalty. Moreover, the study explores the intervening effect of intentions in the association between attitude, subjective norms, perceived behavioral control, environmental concern, social responsibility, self-responsibility, and customer loyalty. The proposed research framework is presented in Figure-1.

2.0 Literature Review

Recent studies (Han, 2015; Moser, 2015) used the theory of planned behavior (TPB) to determine purchase intention, which is essential to predict customers' intentions and loyalty towards pro-environmental products. TPB is the extension of the theory of reasoned action (TRA). TRA, a psychological approach, was developed by Ajzen & Fishbein, 1969) to explain behavior predicted by attitude and subjective

norms. In a subsequent effort, Ajzen (1985) developed TPB, including perceived behavioral control as a third predictive variable with attitude and subjective norms. Numerous researchers (Choi & Johnson, 2019; Moser, 2015) studied behavioral intentions towards pro-environmental products using several constructs: behavioral intention, attitudes, subjective norms, perceived behavior controls, and environmental concern. Yu et al. (2017) also studied self-responsibility and social responsibility to explain behavioral intentions. Moreover, Pickett-Baker & Ozaki (2008) looked at customer loyalty towards pro-environmental products.

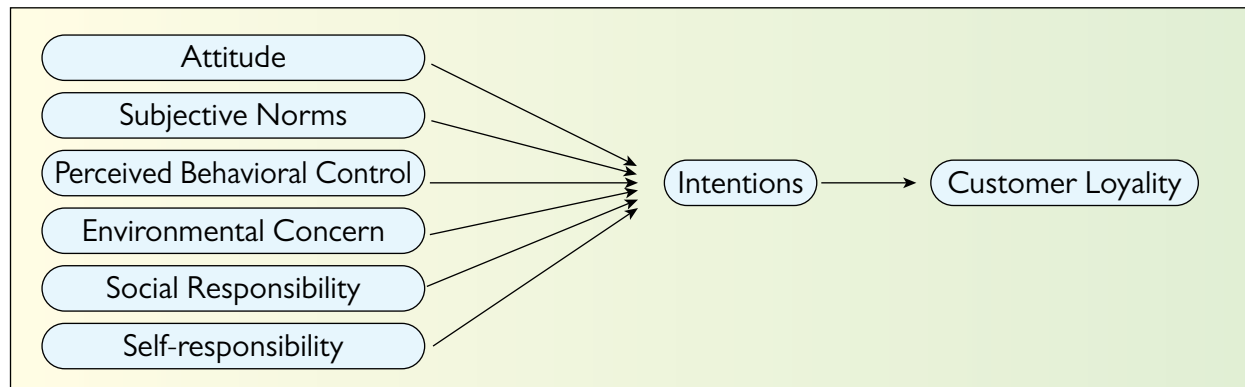


Figure-1. Conceptual framework

Source: Authors

2.1 Customer Loyalty

Customer loyalty has a multidimensional definition in marketing. But most researchers tried to convince as a deep commitment is held of product or service on rebuying the products/services frequently in the future despite any situational influence (Yu et al., 2017). Loyalty is the degree of commitment that assists in repurchasing a product or service for the next time with upcoming situations. Likewise, customer loyalty to pro-environmental products is a positive perception and firm belief that it does not harm them and the environment (Han, 2015). A loyal customer is essential for a company or a business because they always have an intention to re-buy the service or products for a long time without hesitation. Several reasons for those customers are loyal to a particular product/service. Liu et al. (2020) explained that attitude is a vital factor that influences customers to be loyal to using pro-environmental products. Jalilvand & Samiei (2012) argued that customers' loyalty is the consequence of customers' subjective norms, perceived behavioral control, and intentions. It is deemed that the price of pro-environmental products is higher than the conventional ones, which may change customers' intentions. Nevertheless, customers who are already loyal to pro-environmental products might not change their purchase intention and are willing to pay more for the environmental products.

2.2 Intentions

Intentions are narrated as the degree of determination and willingness related to attitude and subjective norms (Liu et al., 2020; Hasan & Sabbir, 2019; Hasan et al., 2021). Behavioral intention is regarded as the antecedent of customer loyalty. The high level of the intention performs more usage of pro-environmental products. Besides, the high level of intention makes a customer permanent to purchase or repurchase the pro-environmental products (Yuriev et al., 2020; Hasan, 2018; Wang & Mangmeechai, 2021). The intention is the most helpful predictor that is described several times in the theory of planned behavior (TPB) models and the extended model of TRA (theory of reasoned action) (Hasan et al., 2020). The TPB and TRA models are widely used as research models, primarily used by social psychologists to determine the customer's behavioral intention. More specifically, many researchers (Ajzen, 2011; Yuriev et al., 2020) posited that in the theory of planned behavior model, the intention is called the soul or heart of the Theory. It was taken as the most common and available predictor of human behavior. A few models were where the behavioral intention was discussed largely, like the TPB and TRA models (Ajzen, 2011). Then, WPP (Willingness to pay the premium)(Sarkar et al., 2021) and

NAM (norms activation model) are the models where the behavioral intention was taken as variable slightly (van der Werff & Steg, 2015). In the WPP model, Sarkar et al. (2021) explained that customers are too much price-sensitive, and they generally don't purchase pro-environmental products because pro-environmental products are more expensive than conventional products, and most customers do not want to pay more for the same service of products. Thus, customers intend to purchase/ use pro-environmental products, When they have a positive attitude, social pressure (subjective norms), and personal control (perceived behavioral control) over their decisions.

In line with these, Yu et al. (2017) found that the customers who have strong self-responsibility and social responsibility are intended to use pro-environmental products. Grimmer et al. (2016) explained that environmental concern positively influences buying pro-environmental products. That is to say, individual purchase intentions and loyalty decision depends on the customers' Attitude, social pressure, personal independence, self-responsibility, social responsibility, and environmental concern.

2.3 Attitude

Attitude may explain people's positive or negative evaluation of an object in a particular behavior (Yeon et al., 2019; Biswas et al., 2020). Luo et al. (2011) and (Hasan et al. (2021) argued that attitudes come from beliefs of behavior and performance evaluation of outcomes and stand for the consequences of the specific conduct that is favorable or unfavorable judgment about the possible consequences of the behaviors. Thus, Attitude is the crucial factor to assess the customer intention of the pro-environmental products.

A previous study found that attitude and behavioral intention establish a close relation to the pro-environmental products (Yang et al., 2020). For this reason, attitude acts as a factor that helps being motivated to purchase pro-environmental products. So, marketers try to grow an attitude to increase the usage of pro-environmental products that are not harmful to the environment. Hamzah & Tanwir (2021) presented a positive relationship between Attitude and behavioral intention towards pro-environmental products. Chwialkowska et al. (2020) narrated that

customer attitudes are the most topical predictors in pro-environmental purchase intention.

Recently, many previous research studies (Jensen & Hansen, 2006; Massari & Passiante, 2006). (Bergel et al. (2019) also have noted that attitude influences customers' loyalty. Foscht et al. (2009) indicated that attitudes make a customer loyal because a positive attitude helps a customer consume the products or service for a long time. In parallel, attitude is closely related to behavioral intention. Thus, examining the relationship between attitude, behavioral intentions, and customer loyalty towards pro-environmental products is pertinent. The study proposed the following hypothesis:

H1: Attitude significantly affects intentions towards pro-environmental products.

H2: Attitude significantly affects customer loyalty towards pro-environmental products.

2.4 Subjective Norms

Subjective norms deal with the customers' specific behavior that does not perform as social pressure (Mouakket & Al-hawari, 2012; Hasan, 2021). Also, Purani et al. (2019) define subjective norms are the personal perception or opinion essential to others. Aziz et al. (2021) and Kim et al. (2019) stated that subjective norm is related to social pressure, and this pressure comes from the family, friends, neighbors, and other individuals. Kashif et al. (2018) argued that social pressure could motivate an individual towards pro-environmental products. A study described that customers' family norms and social pressure influence purchase intention. Al-Swidi et al. (2014) argued that social pressure (subjective norms) affects the customers' purchasing of pro-environmental products. Also, Fu et al. (2010) conducted a study and found that social interactions are closely interrelated with the pro-environmental products consumption intentions. In addition, Bai et al. (2019) proved that subjective norm impacts on customers' behavioral intentions towards pro-environmental products.

In line with these studies, Mouakket & Al-hawari (2012) indicated that social pressure (subjective norms) is the significant predictor of customers' loyalty. Also, Kim et al. (2019) claimed that subjective norm is an important determinant of customers' loyalty in the service industry. Hence, it can be concluded that subjective norms can influence customers' loyalty towards pro-environmental products. Based on this, it is necessary

and pertinent to explain the influence of subjective norms on behavioral intentions and customer loyalty. Thus, this study proposes the following hypotheses:

H3: Subjective norms significantly affect intentions towards pro-environmental products.

H4: Subjective norms significantly affect customer loyalty towards pro-environmental products.

2.5 Perceived Behavioural Control

Perceived behavioral control stands for a person's perceived ease or difficulty in performing a specific behavior (Kim et al., 2013). Perceived behavior control is the beliefs and perceived power expressed as an outcome. Control beliefs may be stated as a belief of a person's presence of certain factors that may impede the evaluation of a particular behavior (Kang et al., 2006; Hasan & Hasan, 2019). This specific positive behavior performs a vital role in inciting a customer to purchase or repurchase pro-environmental products. Thus, customers' perceived behavioral control (PBC) determines pro-environmental product purchase intention (Hamzah & Tanwir, 2021).

In the previous study, Kim et al. (2013) demonstrated that perceived behavior control positively impacts the behavioral intention towards pro-environmental products. Also, Kang et al., (2006) identified that perceived behavioral control has a significant effect on behavioral intention towards pro-environmental products. In line with this, Williams et al. (2018) explained that perceived behavioral control (PBC) influences customer loyalty. Mainardes et al. (2021) also argued that perceived behavioral control dominantly impacts customer loyalty. Therefore, the effect of perceived behavioral control on behavioral intentions and customer loyalty is important to be examined. Regarding this, the study proposes the following hypotheses.

H5: Perceived behavioral control significantly affects intentions towards pro-environmental products.

H6: Perceived behavioral control significantly affects customer loyalty towards pro-environmental products.

2.6 Environmental concern

Environmental concern refers to people's awareness about the environmental issues associated with human beings, plants, animals, and living beings surrounding

us (Kim & Hall, 2020; De Canio et al., 2021). The environmental concern boosts the usage of pro-environmental products because the higher number of environmental concerns provokes the customers to purchase pro-environmental products regularly.

In their study, Jang et al. (2015) mentioned that environmental concern is a strong predictor of behavioral intentions towards pro-environmental products. Also, Taneja & Ali (2021) explained that the customers are more environmentally concerned, they have more positive intentions towards pro-environmental products. In addition, research Hartmann & Apaolaza-Ibáñez (2012) found that purchasing intention of pro-environmental products will be increased by the increasing customers' environmental concern simultaneously. Moreover, Han et al. (2019) confirmed that environmental concern positively correlates with the behavioral intention towards pro-environmental products. In line with this, environmental concern also affects customer loyalty because those concerned about the environment have a strong devotion to saving society and the earth (Kim & Hall, 2020).

For this reason, they use pro-environmental products recurrently. Based on this, it can be inferred that environmental concern is correlated with customer loyalty. Therefore, it is crucial to examine the relationship between environmental concern, behavioral intentions, and customer loyalty.

H7: Environmental concern significantly affects intentions towards pro-environmental products.

H8: Environmental concern significantly affects customer loyalty towards pro-environmental products.

2.7 Social Responsibility

The core concept of social responsibility comes from the ethical responsibility mainly to the natural environment. Most researchers and socialists define social responsibility in terms of ethical theory, where the civic duties have to be fulfilled for the personal (Lee et al., 2021; Pino et al., 2016). The socially responsible persons benefit the whole society. Thus, economic growth and social welfare are balanced with the accountability of fulfilling civic duties and actions. Alniacik et al. (2011) demonstrated that social responsibility means external and internal

responsibility of the environment, and it keeps our earth clean, dust-free, and after all, habitable for ourselves. It also maintains the ecosystem of the environment. All these responsibilities motivate the customer to buy pro-environmental products ahead of social responsibility by one step.

Environmental ethics have advanced in the last two decades, and researchers include environmental ethics, mainly individual social responsibility. Alniacik et al. (2011) claimed that customers purchase products from the market when they think about the family, society, and ecological responsibilities. Han et al. (2019) also identified that the customers who are highly concerned about the pro-environmental products think about the disposal of the products in a pro-environmental manner. Su et al. (2014) also explained that customers show positive intentions to be loyal towards pro-environmental products when they realize their benefits. Thus, it can be inferred that social responsibility can influence customers' intentions and loyalty. Therefore, this study proposes the following hypothesis:

H9: Social responsibility significantly affects intentions towards pro-environmental products.

H10: Social responsibility significantly affects customer loyalty towards pro-environmental products.

2.8 Self-responsibility

There is a proverb, "Many a little makes a mickle." We can easily infer that self-responsibility can save society by doing good deeds and avoiding harmful acts by the paradigm. Fundamentally, self-responsibility refers to the moral judgment and sense of responsibility related to personal and societal welfare behavior (Yu et al., 2017).

Mitter et al. (2019) their study identified that self-responsibility regulates what can be done or can't be done. Munichor & Friedlander (2019) also explained that self-responsibility refers to self-regulated behavior that shapes the customer's behavioral patterns and purchases intentions. Janmaimool & Chontanawat (2021), in their study, discussed that self-responsibility induces an individual to purchase pro-environmental product purchase intentions. Mitter et al. (2019) also indicated that eco-friendly behavior (pro-environmental product purchase intentions) is an indicator of self-controlled behavior (Self-responsibility). Yu et al. (2017) argued that Self-

responsibility is a significant indicator of customer loyalty. Based on these studies, it can be inferred that Self-responsibility can influence customers' intentions and loyalty towards pro-environmental products. Therefore, it is pertinent to examine the relationship between Self-responsibility and customers' intentions and loyalty. Subsequently, the study proposes the following hypothesis.

H11: Self-responsibility significantly affects intentions towards pro-environmental products.

H12: Self-responsibility significantly affects customer loyalty towards pro-environmental products.

2.9 The mediating role of intentions

Intention refers to a predisposed condition before an actual behavior (Jaiswal & Niraj, 2011). Azjen (1980) first introduced intention in the theory of reasoned action (TRA) to measure the actual behavior. In their study, Prayag et al. (2013) examined the mediating role of intentions in the service industry. Akter et al. (2011) also measured the mediating effect of intentions in eco-friendly behavior. Lien et al. (2015) explained that intentions predict actual behavior and mediate the relationship between its predictors and actual behavior. In addition, Carr & Sequeira (2007) identified that intentions play a significant mediating role. However, few previous studies (Bak, 2018; Kadel, 2021) examined the mediating effect of intentions in a pro-environmental products perspective. Thus, it is pertinent to investigate the mediating effect of intentions in the relationship between Attitude, subjective norms, perceived behavioral control, environmental concerns, social responsibility, self-responsibility, and loyalty. Hence, this study proposes the following hypotheses.

H13: Intentions partially mediate the relationship between attitude and customer loyalty.

H14: Intentions partially mediate the relationship between subjective norms and customer loyalty.

H15: Intentions partially mediate the relationship between perceived behavioral control and customer loyalty.

H16: Intentions partially mediate the relationship between environmental concern and customer loyalty.

H17: Intentions partially mediate the relationship between social responsibility and customer loyalty.

H18: Intentions partially mediate the relationship between self-responsibility and customer loyalty.

3.0 Methodology

3.1 Participants and sampling design

The study designs a data collection approach through structured questionnaires and collects data from respondents aged 20 years or above who had higher secondary level education. The sample respondents are representative of the customers who at least use pro-environmental products once in their life. For this reason, the quota sampling technique was used as a suitable sampling technique. Therefore, the questionnaires were accessible and understandable to the respondents to retrieve the answers. After setting the questionnaires, a pilot study was conducted among 40 actual pro-environmental product users to assess the validity and reliability of the questionnaires. Finally, revised questionnaires were set to collect data based on comments and suggestions. The sample size is an essential factor in a quantitative research method. The sample size is computed based on Hair Jr et al. (2014) recommended that each variable be around 20 observations per study. Our study has eight constructs (3 items for intentions, three items for subjective norms, three items for perceived behavioral control, three items for attitude, three items for environmental concern, three items for social responsibility, three items for self-responsibility, three items for loyalty) having 24 items. So, the sample size is (20*34) around 480 respondents. However, 750 respondents who use pro-environmental products were considered for data analysis. After that, Nunnally (1994) suggested that a sample size of 400 is enough for data analysis to test hypotheses and conclude.

To complete the questionnaire, around 2-3 days are given. No appreciation is given to the respondents, who use pro-environmental products in a different geographical area. Data was collected through Google drive form. The data was collected during the pandemic period, and the period was 20 June to 10 November in 2021. One thousand questionnaires were sent to respondents of pro-environmental product users. Among them, 448 respondents sent back the questionnaires. Out of 448 questionnaires, 47 were excluded due to extreme value and incomplete. Subsequently, 401 questionnaires were used for analysis.

3.2 Measures

The questionnaires were borrowed from previously validated scales. The measurement scales of attitude, subjective norms, perceived behavioral control,

and intentions were adopted from (Pickett-Baker & Ozaki, 2008) and adapted to the context. The measurement items of environmental concern, social responsibility, self-responsibility, and customer loyalty were borrowed from (Yu et al., 2017) and adapted to the context. All the constructs contain three items for each. The measurement scales were 5 points Likert scale, where 1 indicates 'strongly disagree' and 5 means 'strongly agree.'

3.3 Data Analysis

For analyzing the data, statistical packages for social sciences (SPSS 23.0) and Smart PLS 3.3.3 software was used in this study. To figure out the demographic characteristic of the sample and descriptive analysis, SPSS was used. The measurement model and structural model were analyzed through Smart PLS 3.3.3.

4.0 Results

4.1 Demographic Information

Table I shows the demographic profile of the respondents. Among 401 respondents, the female was 189, approximately 47.13%, and the male was 212, about 52.87%. Among three age groups, the age group between 20 to 35 is the largest, with 66.59% of the respondents. The data were collected from well-educated persons of our country, mainly the family's decision-makers. Among the respondents, 159 (39.65%) were office workers.

Table-I: Demographic profile of respondents (n = 401)

Variables	n	Percentage (%)
Gender		
Male	212	52.87
Female	189	47.13
Age (years)		
20 to 35	267	66.59
36 to 50	87	21.69
51 to 65	47	11.72
Occupation		
Students	135	33.66
Office workers	159	39.65
Others	107	26.69

4.2 Measurement Model

Despite the limitations, Cronbach's alpha and composite reliability are taken as the measurement method (Hair Jr et al., 2014). In our study, the

composite reliability value ranged from 0.893 to 0.928 is shown in Table II; here, the value is greater than the suggested value by Hair Jr et al. (2014). The value of Cronbach's alpha is presented in the same table to measure the internal consistency of the measurement items. Table II shows Cronbach's alpha value ranges from 0.820 to 0.984, which is greater than the recommended value by Nunnally (1994). Therefore, it can be concluded that the internal consistency indicating reliability is appropriate for further analysis of the constructs.

Table-II: Measurement model results

Constructs/Items	Factor loadings	Cronbach's alpha (α)	Composite reliability (CR)	The average variance extracted (AVE)
Attitude	0.901	0.875	0.922	0.799
I like the idea of purchasing pro-environmental products.				
Purchasing pro-environmental product is a good idea.	0.933			
I have a favorable attitude toward purchasing a pro-environmental version of a product.	0.844			
Subjective Norms				
Most people who are important to me think I should purchase pro-environmental products when purchasing.	0.880	0.841	0.904	0.758
Most people who are important to me would want me to purchase pro-environmental products when purchasing.	0.910			
People whose opinions I value would prefer that I purchase pro-environmental products.	0.819			
Perceived Behavioral Control				
I believe that I can purchase pro-environmental products.	0.857	0.842	0.905	0.762
If it were entirely up to me, I am confident that I would purchase pro-environmental products.	0.948			
I have the resources, time, and willingness to purchase pro-environmental products.	0.808			
Environmental Concern				
I am very concerned about the environment.	0.844	0.835	0.901	0.752
Significant social changes are necessary to protect the natural environment.	0.915			
Anti-pollution laws should be enforced more strongly.	0.840			
Social Responsibility				
I feel morally obliged to buy pro-environmental products.	0.866	0.820	0.893	0.737
I participate in activities that aim to protect and improve the quality of the environment.	0.903			
I support non-governmental organizations working to minimize the negative impacts on the environment.	0.804			
Self-responsibility				
I consider the environmental issue when making a purchase.	0.896	0.884	0.928	0.811
I think individuals have a responsibility to protect the environment.	0.935			
When I use pro-environmental products, I feel that I support environmental preservation.	0.870			
Intentions				
I will buy pro-environmental products within the next 12 months.	0.893	0.830	0.898	0.747
I intended to buy the pro-environmental products within the next 12 months.	0.878			
I want to buy pro-environmental products.	0.819			
Customer loyalty				
I will keep using pro-environmental products.	0.856	0.828	0.897	0.744
Pro-environmental products are always my first choice.	0.892			
If pro-environmental products are not available, I will not buy conventional products.	0.840			

To measure the model's validity, several techniques are used where convergent validity can be treated as a parameter that measures the degree of constructs that are related to each other. Convergent validity is evidence that is related to similar constructs. Researchers use both CR (composite reliability) and AVE (average variance extracted) to evaluate the convergent validity (Hair Jr et al., 2014). Nunnally(1994) suggested that the loading value of all items should be more than 0.5 shown in table II. In reliability, the internal consistency (Cronbach's alpha) of all the constructs ranges from 0.820 to 0.884 recommended by Hair Jr et al. (2014). The average variance extracted explains the degree to which a latent construct deals with the variance of its indicators to justify using a construct. Ali et al. (2018) suggested that the AVE should be greater than 0.5. However, our result explains the ranges from 0.737 to 0.811. The indicators deal with the constructs more than half of the variance (Sarstedt et al., 2014). Hence, the overall measurement models of the study administrated adequate convergent validity. Discriminant validity refers to the degree of measurement of a construct with a different construct that is not related (Nunnally,1994). Measurement modeling analysis deals with two main characters. First, one is how the latent variables can accurately measure the variables in the overall model. The second is how the model verifies the model's convergent and discriminant validity. Convergent validity works with the correlations between relevant variables, with high correlations indicating validation.

In contrast, discriminant validity also works with the two different variables having low correlations indicates validation. Based on Sarstedt et al. (2014) suggestions, the most commonly used indicators were taken to determine the reflective indicators in the measured model. Furthermore, construct validity was segmented by establishing convergent and discriminant validity (Ali et al., 2018). The discriminant validity is taken to check the correlations between the measures of potentially overlapping constructs. Table III shows that both the constructs of the discriminant validity and the square root value of average variance extracted (AVE) should be higher than the variance shared among the construct and the other constructs (Fornell & Larcker, 1981). Hence, it is asserted that in our study, the overall measurement model incorporated adequate discriminant validity, which exposes that each construct is distinctive from others.

Table-III: Results of discriminant validity and collinearity

	ATT	SN	PBC	ENC	SoR	SeIR	INT	CL
ATT	0.894							
SN	0.231	0.871						
PBC	0.236	0.445	0.873					
ENC	0.170	0.487	0.338	0.867				
SoR	0.164	0.764	0.693	0.309	0.858			
SeIR	0.156	0.386	0.324	0.397	0.414	0.901		
INT	0.376	0.440	0.389	0.390	0.272	0.364	0.864	
CL	0.390	0.479	0.434	0.424	0.337	0.438	0.546	0.863

Notes: ATT = attitude, SN = Subjective norms, PBC = perceived behavioral control, ENC = environmental concern, SoR= social responsibility, SeIR = self responsibility, INT = intentions, CL = customer loyalty

4.3 Hypothesis Testing

Data analysis was conducted using Smart PLS 3.3.3. This study analyzed path coefficients to make decisions. Table IV and Figure 2 show the casual relationship between latent variables and outcome variables including intervening variables. The constructs (attitude, perceived behavioural control, environmental concerns, and self-responsibility) have a direct significant impact on customer loyalty described in the paths of H1, H5, H7, and H11 are sequentially ($\beta = 0.188, t = 3.785, p = 0.000$), ($\beta = 0.173, t = 2.843, p = 0.005$), ($\beta = 0.142, t = 2.665, p = 0.008$), and ($\beta = 0.168, t = 2.436, p = 0.015$). Besides, attitude, perceived behavioural control, and environmental concern had a significant impact on intentions explained in H2, H6, and H8 are consequently ($\beta = 0.256, t = 4.985, p = 0.000$), ($\beta = 0.225, t = 3.358, p = 0.000$), and ($\beta = 0.185, t = 3.686, p = 0.000$). However, subjective norms and social responsibility had an insignificant influence on customer loyalty ($\beta = 0.047, t = 0.578, p = 0.563$) and ($\beta = -0.021, t = 0.325, p = 0.745$) are described in H3 and H9.

Table-IV: Path coefficients and hypothesis testing

Hypothesis	Relationships	Beta	T-Statistics	P-Values	Decisions
H1	Attitude -> Consumer Loyalty	0.188	3.785	0.000	Supported
H2	Attitude -> Intentions	0.256	4.985	0.000	Supported
H3	Subjective Norms -> Consumer Loyalty	0.047	0.578	0.563	Not Supported
H4	Subjective Norms -> Intentions	0.144	1.644	0.101	Not Supported
H5	Perceived Behavioral Control -> Consumer Loyalty	0.173	2.843	0.005	Supported
H6	Perceived Behavioral Control -> Intentions	0.225	3.358	0.000	Supported
H7	Environmental concern -> Consumer Loyalty	0.142	2.665	0.008	Supported
H8	Environmental concern -> Intentions	0.185	3.686	0.000	Supported
H9	Social Responsibility -> Consumer Loyalty	-0.021	0.325	0.745	Not Supported
H10	Social Responsibility -> Intentions	-0.081	1.156	0.248	Not Supported
H11	Self-responsibility -> Consumer Loyalty	0.168	2.436	0.015	Supported
H12	Self-responsibility -> Intentions	0.102	1.411	0.158	Not Supported
H13	Attitude -> Intentions -> Consumer Loyalty	0.071	3.413	0.001	Supported
H14	Subjective Norms -> Intentions -> Consumer Loyalty	0.040	1.485	0.138	
H15	Perceived Behavioural Control -> Intentions -> Consumer Loyalty	0.062	2.585	0.010	Supported
H16	Environmental concern -> Intentions -> Consumer Loyalty	0.051	2.960	0.003	Supported
H17	Social Responsibility -> Intentions -> Consumer Loyalty	-0.023	1.090	0.276	Not Supported
H18	Self-responsibility -> Intentions -> Consumer Loyalty	0.028	1.334	0.182	Not Supported

In line with these hypotheses, this study measured the mediating effect of intentions, where intentions partially mediates the relationship between attitude, perceived behavioural control, environmental concern, and customer loyalty described in (see table IV) H13, H15, and H16 the path coefficients are consequently ($\beta = 0.071$, $t = 3.413$, $p = 0.001$), ($\beta = 0.062$, $t = 2.585$, $p = 0.010$), and ($\beta = 0.051$, $t = 2.960$, $p = 0.003$) shown in H13, H15, and H16. However, intentions had no mediating effect on the association between subjective norms, social responsibility, self-responsibility, and customer loyalty respectively ($\beta = 0.040$, $t = 1.485$, $p = 0.138$), ($\beta = -0.023$, $t = 1.090$, $p = 0.276$), and ($\beta = 0.028$, $t = 1.334$, $p = 0.182$) respectively shown in H14, H17, and H18.

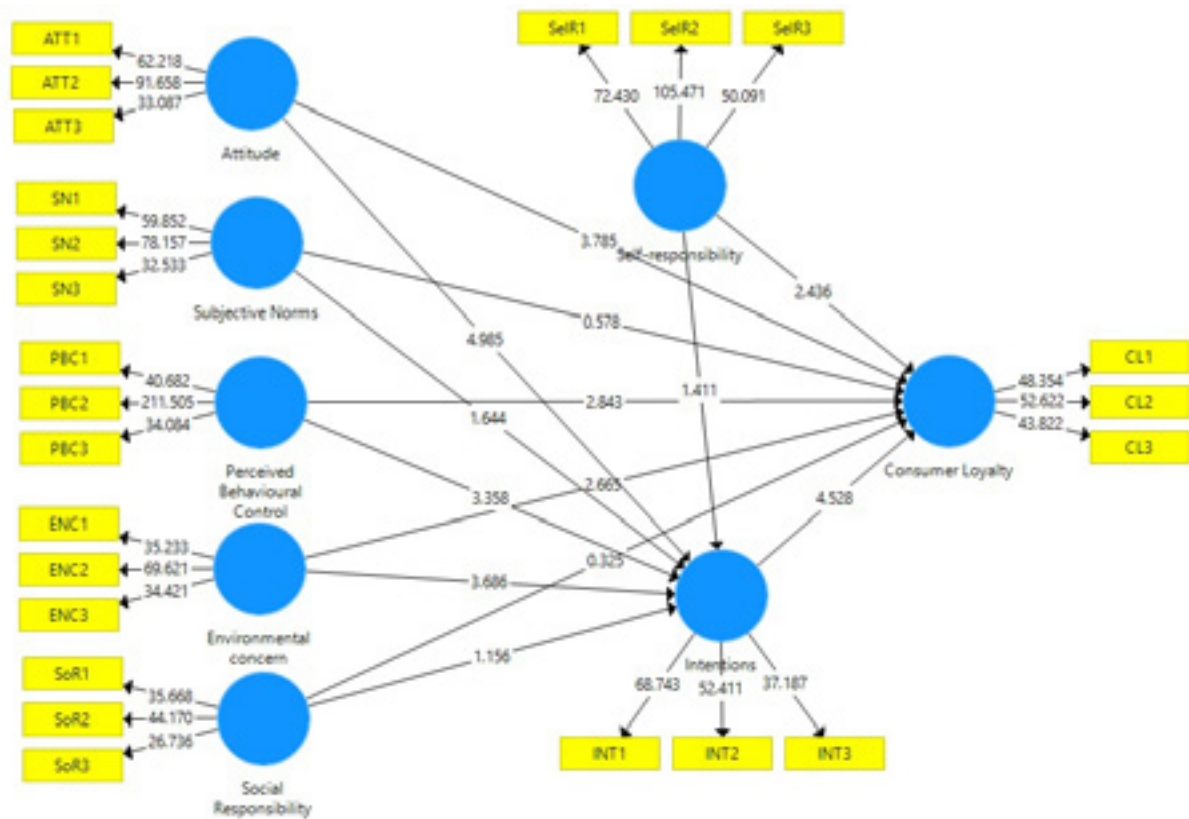


Figure 2. Structural model

5.0 Discussion and Conclusions

This study examines the factors influencing intentions and customer loyalty towards pro-environmental products, leaving some important insights for academics and practitioners.

5.1 Theoretical Implications

The study revealed that attitude, perceived behavioral control, environmental concerns, and self-responsibility significantly impacted customer loyalty, consistent with previous studies (Onel, 2017). These findings imply that customer feeling, social impact, and personal accountability influence pro-environmental product usage intentions and customer loyalty. In congruence with these findings, previous studies explained that environmental concern (Verma et al., 2019), self-responsibility (Pritchard et al., 1999), attitude (Yu et al., 2017) are the significant predictors of customer loyalty. Besides, attitude perceived behavioral control and environmental concern significantly affected customers' intentions towards pro-environmental products consistent with prior studies (Kim & Yun, 2019; Kautish & Sharma, 2020). This implies that customers' feelings and emotions, personality traits, and environmental issues have significant motivations for forming customers' intentions. However, subjective norms and social responsibility insignificantly impact customer loyalty aligned with prior studies (Cai et al., 2019; Anuwichanont et al., 2011). This implies that social pressure from family members and friends and social accountability don't substantially influence customers' loyalty towards pro-environmental products.

In line with this, the study explained that the association between attitude, perceived behavioral control, environmental concern, and customer loyalty is mediated by intentions aligned with prior studies (Han, 2015; De Cannière et al., 2009). This implies that only customers' emotions and feelings, personality, and environmental issues are not enough for customers' loyalty; rather, intentions ignite to be loyal towards pro-environmental


products. However, this study has also demonstrated that the association between subjective norms, social responsibility, self-responsibility, and customer loyalty is not mediated by intentions towards pro-environmental products. This implies that social pressure, social accountability, and self-accountability independently influenced customers' loyalty towards pro-environmental products without other intervention.

5.2 Managerial Implications

The findings provide some suggestions to pro-environmental products sellers/ producers. First, this study will help managers know the harmful side of available products to the environment and the benefits of using pro-environmental products. Second, by this study, managers may develop personal motivations towards pro-environmental products. Third, this study will help managers determine how social pressure, social accountability, and self-accountability influence customers' loyalty towards pro-environmental products. This study will contribute to understanding the role of intervening power of intentions in the relationship between Attitude, subjective norms, perceived behavioral control, environmental concern, social responsibility, self-responsibility, and customer loyalty, where Attitude, perceived behavioral control, and environmental concern are intervened by intentions towards pro-environmental products.

5.3 Limitation and Further Research

Our study discusses the pro-environmental products in general but not any specific pro-environmental products. Further research can be introduced on any specific pro-environmental product. This study was conducted in a particular period. Thus, a research model on a longitudinal approach should be developed to ascertain the change of attitude and purchase intention. This longitudinal approach is suitable for enjoying the reaction of customers who purchase the pro-environmental product several times. So, there is an opportunity to launch any further research on that model. Self-reported behavior measures the customer's pro-environmental products purchase behavior instead of actual behavior. The convenience sampling method used in this study makes biasness in the demographic profile. Thus, further researchers may use another way to lessen the biasness of the

study to make the result fruitful. Therefore, the finding of the research work may assist the academicians for further research work and help them to look at the others constructs correlated with pro-environmental products. 

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