Effect of Psychographic and Green Marketing Mix Factors on Consumers' Green Purchasing Behavior

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ABSTRACT

Environmentally conscious marketing techniques and green products are becoming more and more important for both sustainable economic growth and environmental preservation as environmental concerns continue to rise on a worldwide scale. This is acknowledged by both manufacturers and consumers. This study is an attempt to increase the adoption of green products by addressing the dearth of data on customer views of green products and their purchase behavior. It looked at how the green marketing mix and psychographic characteristics affected consumers' green buying habits in the food and beverage industry's fast-moving consumer products segment. Utilizing a causal research design with mean and regression analysis on a sample of 177 respondents, the study found that environmental attitude and personal norms, in addition to green price, green place, and green promotion, significantly influence people's green purchasing behavior in the National Capital Region. To take advantage of these results, the researchers suggested putting in place an information system to create a thorough green marketing mix plan that would help companies increase the adoption of green products while also attracting and keeping customers.

1. INTRODUCTION

Many consumers and manufacturers have come to understand the significance of environmentally conscious marketing initiatives to ensure sustainable economic growth and save the environment. The issue of environmental concern encourages the initiative to go "green," which has subsequently raised awareness of and interest in green product purchasing worldwide (Boldureanu, Manolica, Pagliacci, &, Roman, 2019; Purbey, Sadarangani, &, Sreen, 2018). Even if customers are becoming more aware of their consumption patterns and how they affect social and environmental development, making green products and services appealing to consumers remains one of the biggest problems for businesses (White, Hardisty & Habib, 2019). One method of analyzing consumer behavior is through psychographics, which aims to comprehend the cognitive variables that influence customer behaviors. These behaviors may be based on the activities, interests, and views of the consumers (Kotler & Armstrong, 2004). By aligning

marketing efforts with these influential factors, companies can effectively encourage and promote sustainable consumption practices.

Fast-Moving Consumer Goods (FMCG) are the leading force in the industry driving the pollution crisis (Greenpeace International, 2018) and they are racing to keep up with quickly evolving consumer tastes with a rise in vegetarianism and rising interest in plastic packaging (Scott, 2019). According to Kantar's study from 2021, the FMCG business in the Philippines has a tremendous opportunity to implement more environmental practices as more Filipino consumers are prepared for environmentally conscious habits and support eco-friendly companies. Based on the most recent Brand Footprint rankings of successful FMCG brands, food and beverage brands became the most purchased followed by products coming from personal care brands and one lone homecare brand (Cahiles-Magkilat, 2022). Integrating sustainability is now essential in attracting and maintaining consumers.

Over several decades, the idea of environmental sustainability has established a business niche and won over customers who support environmental causes. One study highlights that eco-design, regulations, and waste management strongly influence a company's sustainable development (Kuo, Liu, & Wu, 2022). There are still many unknown factors at play that keep consumers from shifting their purchase preferences in favor of green products (Magda, Naz, Oláh, &, Vasile, 2020). The limited studies on the relationship between psychographic factors and green marketing mix factors on green purchasing behavior prompted the researchers to examine the effect of these factors on consumers' green purchasing behavior for green products and services. With the knowledge of the importance of improving green purchasing behavior, this study is an essential tool for companies in assessing marketing approaches and creating ways to link the manufacture of green products to the customer with their brand, manufactured goods, and services.

This study mainly focused on SDG 12 — Responsible Consumption and Production. Separating economic development from environmental degradation with increasing efficiency and promoting a sustainable lifestyle are the components of sustainable consumption and production (UN, 2019). It may also affect easing deprivation, good health, and welfare and switching toward a sustainable economy. The result of this study is expected to contribute to several SDGs including SDG 3 (Good Health and Well-being), SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 11(Sustainable Cities and Communities), SDG 13 (Climate Action), and SDG 15 (Life on Land) (UN, 2016). The researchers aim to help industries in changing their marketing mix strategy in the course of a different approach that recognizes planetary limits.

Green marketing mix refers to the use of environmentally friendly marketing strategies to promote products or services. It includes four elements: green product, green price, green promotion, and green place (Singh & Singh, 2017). The importance of green marketing has grown significantly in the modern economy.

Businesses may need to have a better grasp of the beliefs and values of their target market to tailor advertising or marketing activities. Psychographic factors (PF) refer to the characteristics, attitudes, values, beliefs, and behaviors of individuals that shape their consumption choices and purchasing behavior. Several studies showed different results for the effect of PF on green purchasing behavior depending on the countries, which implied inconsistencies in the respondents' traditions, customs, understanding, and other aspects. PF has been found to impact consumer decision-making processes (Kumar, 2018). Faouri, Hayari, and Shatnawi, (2019) revealed that green purchasing behavior is strongly affected by environmental attitudes followed by social influence and personal norms. Further, psychographic factors (PF) include environmental concern (EC),

environmental knowledge (EK), environmental attitude (EA), perceived consumer effectiveness (PCE), skepticism (SKEP), social influence (SI), and personal norms (PN) have been arranged concerning each aspect's effect, by providing the previous studies' findings either significant (positive and negative) or non-significant.

The primary human behaviors that have a significant effect on the environment are those of the consumer, whether they are buying, using, or discarding green products. The term "green purchasing behavior (GPB)" describes the habit of making environmentally friendly, recyclable purchases. In Iran, the lack of a connection between customers' favorable attitudes and GPB has been noted in studies on this topic (Adrita & Mohiuddin, 2020). In China, Chinese consumers expressed their concerns about the environment as a result of their careless consumption, they often converted those concerns into GPB (Cheung & To, 2019).

This study analyzed the factors that influence consumers' green purchasing behavior and services. The researchers intend to develop a system that will guide businesses toward a green marketing mix strategy that can help businesses increase the purchase of green products based on the result of this study. As Agenda 2030 approaches and Southeast Asian markets are now beginning to merge, the proposed study can guide businesses to obtain a viable benefit in attracting and maintaining customers and widening the business arena of green products and services.

1.1 Conceptual Framework

The conceptual frameworks used by the researchers are based on two studies, namely Faouri et al. (2019) and Hossain and Rahman, (2018). The study by Faouri et al. (2019) analyzed the effect of psychographic factors on GPB and examine the moderation influence of demographics on the relationship between psychographics and green purchasing behavior. The study revealed that GPB is strongly affected by EA followed by SI and PN in Jordan, while the effect of EC, EK, PCE, and SKEP is non-significant; similar findings confirm gender, age, educational level, and income level. Additionally, the study reveals psychographic factors are non-significantly moderated by demographics excluding the connection between age and attitude which positively increases for people who are above 40 years old. This study presents potential recommendations for marketers, businesses, and officials in improving public and sustainable strategies. This is illustrated in Figure 1.
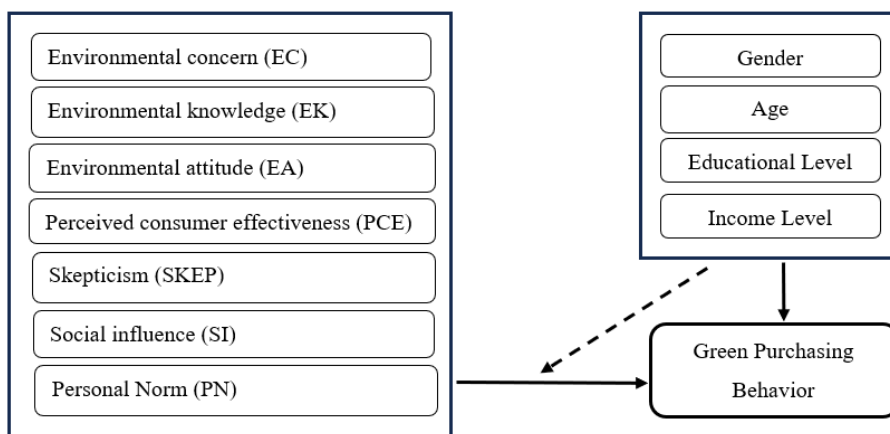

Figure 1. Conceptual Framework
Source: Examining the direct and moderation effect of psychographic and demographic factors on green purchasing behaviour (Faouri, Hayari, & Shatnawi,2019)

Second is the study of Hossain and Rahman, (2018) that analyzed the effect of four green marketing mix elements namely green product, green price, green place, and green promotion on the green purchasing behavior of Bangladeshi consumers. The study revealed that Bangladeshi consumers' GPB is significantly influenced by four components of the green marketing mix (GMM): green product (Gprod), green price (Gprice), green place (Gplace), and green promotion (Gpromo). Consumers' GPB is most influenced by green products with a Standardized Path Coefficient (ß) of 0.642, whereas green environments have the least impact. This study also highlighted the concept of sustainable marketing, which modern marketers can employ as a tactical instrument to influence consumers' green purchasing decisions. The framework of the study of Hossain and Rahman, (2018) is presented in Figure 2.
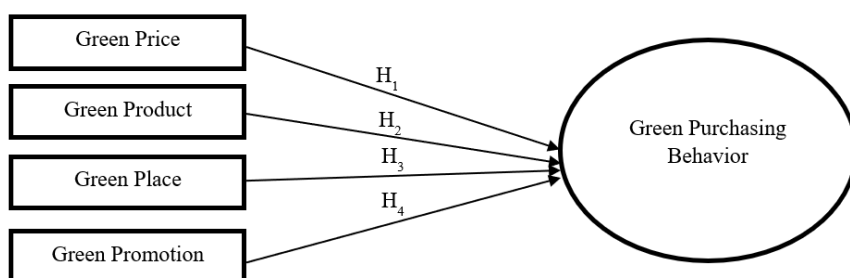

Figure 2. Conceptual Framework
Source: Measuring the Impact of Green Marketing Mix on Green Purchasing Behavior: A Study on Bangladeshi Consumers (Hossain & Rahman, 2018)

Both studies by Faouri et al. (2019) and Hossain et al. (2018) have developed a reliable and valid measure of understanding green purchasing behavior for green products using psychographic factors (Faouri et al., 2019) and green marketing mix factors (Hossain et al., 2018). Having limited studies on green purchasing behavior available in the Philippines, understanding the factors affecting green purchasing behavior will be vital in businesses, especially in the marketing and manufacturing of goods as well as in public policy practices in the country. The researchers extend by combining two frameworks to determine the factors affecting the green purchasing behavior of consumers.

1.2 Operational Framework
This study is guided by the operational framework presented in Figure 3, which presents the independent and dependent variables and their relationship to each other.

While the study of Faouri et al. (2019) and Hossain et al. (2018) were conducted on Jordanian customers and Bangladeshi consumers respectively, this research focused on identifying the factors that affected the green purchasing behavior of Filipino consumers. The study advances by combining in this study Psychographic Factors and Green Marketing Mix factors as the independent variables affecting green purchasing behavior.

Green product is a product that is designed or manufactured in a way that minimizes its impact on the environment. It is eco-friendly and sustainable in nature (Verhoef, 2018). Firms that are committed to sustainability have been compelled to change their emphasis on creating green products due to consumer preferences, environmental activism, and strict legislation (Bhardwaj, Garg, Gajpal, Ram, & Zheng, 2020). Consumers who care about the environment have, thus, expressed a greater preference for them.

Independent Variables

Psychographic Factors

Environmental concern (EC)	H_{01}
Environmental knowledge (EK)	H_{02}
Environmental attitude (EA)	H_{03}
Perceived consumer effectiveness (PCE)	H_{04}
Skepticism (SKEP)	H_{05}
Social influence (SI)	H_{06}
Personal Norm (PN)	H_{07}

H_{012}

Dependent Variable

Green Purchasing Behavior (GBP)

Green Marketing Mix

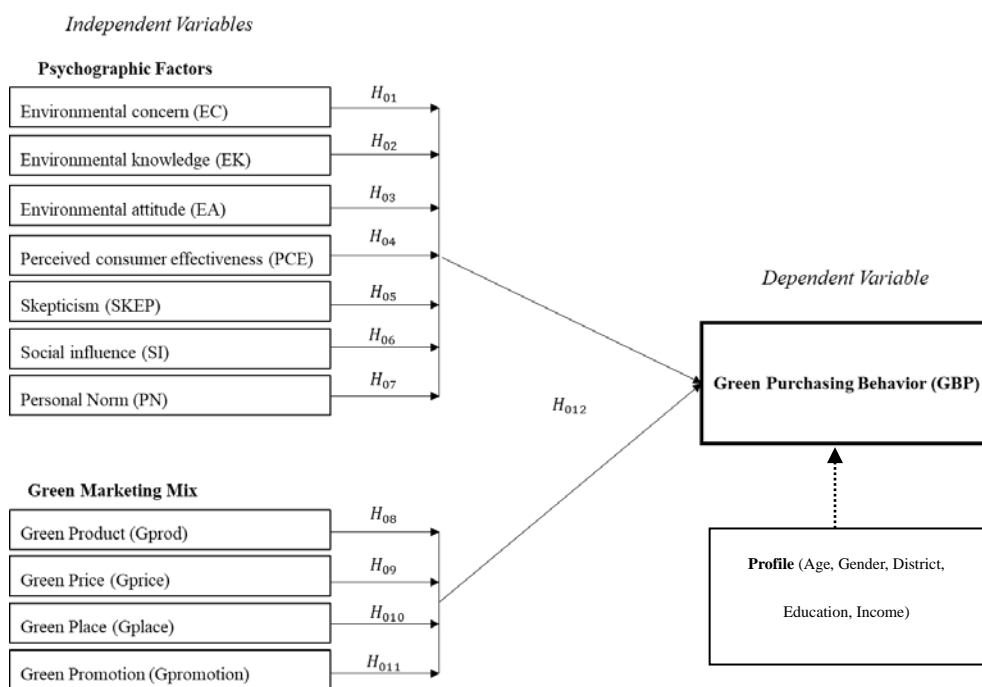|	
Green Product (Gprod)	H_{08}
Green Price (Gprice)	H_{09}
Green Place (Gplace)	H_{010}
Green Promotion (Gpromotion)	H_{011}

Profile (Age, Gender, District, Education, Income)

Figure 3. Operational Framework

Green price refers to the use of pricing strategies that take into consideration the environmental costs associated with a product or service. It involves stating the true environmental cost of a product or service and charging an appropriate price for it (Kim et al., 2018). GPrice is the pricing policies for environmentally friendly goods that are typically influenced by their level of greenness and the number of tailored advertisings the product gets (Liu & Yi, 2017), market demand for green products, and consumer awareness (Rahmani, & Yavari, 2019).

Green place refers to the location or distribution channels used to sell environmentally friendly products. The locations should be environmentally responsible and sell products in an eco-friendly manner (Louis, Lombardi, & Pino, 2017). The study of Huan-Yong et al. (2019) showed that the supply chain's structure and information sharing have a significant effect on its sustainability goals. The routes used to carry the goods should be carefully evaluated and constantly seek to utilize the shortest route to have the least impact on the environment. This will help to guarantee that businesses are able to survive in the market.

Green promotion refers to the use of eco-friendly marketing techniques to advertise environmentally friendly products or services. It involves using a variety of communication channels to inform customers about the benefits of green products or services (Bastian et al., 2017). An organization's commercial activities should heavily emphasize how sustainable its products and services are. A company's sustainability ideals should be reflected in all it does.

According to Bamberg and Möser (2017), EC refers to an individual's level of interest in environmental issues and their willingness to take action to address them. EK refers to an individual's awareness and understanding of environmental issues, including their knowledge of the causes and effects of environmental problems (Chen, 2018). Firms have positioned themselves as being environmentally friendly to address the growing customer awareness of environmental issues. On the other hand, EA refers to an individual's evaluative judgment of environmental issues and their beliefs about what

actions should be taken to address them (Bamberg & Möser, 2017). Findings conducted on university students in Indonesia indicated the significant impact of environmental awareness on green behavior among university students (Wardhana, 2022). A study conducted by Damberg, Frömbling, and Ringle (2021) investigates how individuals' perceptions of risk and environmental knowledge affect their sustainable consumption behavior which indicates that in Europe, being environmentally conscious may be associated with environmental worry, which is influenced by greater levels of environmental knowledge and perception of environmental threats.

Chen (2018) refers to PCE as an individual's conviction that one has in their ability to influence others through their consumption and purchasing decisions. SKEP refers to an individual's doubts or disbelief in environmental claims or messages. It can be a barrier to pro-environmental behavior (Bamberg & Möser, 2017). The misleading claims made by companies in their environmental marketing efforts have a major impact on consumers' doubts about purchasing green products or consuming goods. Kumar (2018) refers to SI as the impact of other people on an individual's attitudes and behavior. It can be a significant factor in shaping pro-environmental behavior.

The term PN has been used by Schwartz (1973) as the beliefs people take for themselves while stressing that these beliefs are the result of collectively common norms. Chen (2018) refers to this as an individual's internalized moral standards and values that guide their behavior. PN with environmental concerns is the moral standards that impact environmental behavior.

These factors are measured to determine the perception of the respondents toward their green purchasing behavior. These variables are tested as the factors that influence green purchasing behavior.

1.3 Objectives of the Study

In general, this study is focused on examining the effect of psychographic factors and green marketing mix on consumers' green purchasing behavior for green products and services. Specifically, it intends to:

1. describe the demographic profile of green product respondents in terms of age, gender, address, educational level; and income level;
2. describe the perception of the respondents in green purchasing behavior through the psychographic factors, namely Environmental concern (EC); Environmental knowledge (EK); Environmental attitude (EA); Perceived consumer effectiveness (PCE); Skepticism (SKEP); Social influence (SI); and Personal Norms (PN);
3. describe the perception of the respondents in green purchasing behavior through the green marketing mix factors, namely, green products (Gprod); green price (Gprice); green place (Gplace); and green promotion (Gpromo);
4. assess the green purchasing behavior of respondents;
5. determine the effect of psychographic factors in terms of environmental concern (EC), environmental knowledge (EK), environmental attitude (EA), perceived consumer effectiveness (PCE), skepticism (SKEP), social influence (SI), and personal norms (PN) and green marketing mix factors in terms of green products (Gprod), green price (Gprice), green place (Gplace), and green promotion (Gpromo) on green purchasing behavior;
6. determine the controlling effect of profiles on the effect of psychographic factors in terms of the seven psychographic factors and four green marketing mix factors on green purchasing behavior;
7. determine the effect of the overall psychographic factor and overall green marketing mix factors; and
7. design a system for green marketing mix that can help increase GPB.

1.4 Hypotheses

The hypotheses below were tested in this study:

H_{o1}: Environmental concern (EC) has no significant effect on Green Purchasing Behavior.

H_{o2}: Environmental knowledge (EK) has no significant effect on Green Purchasing Behavior.

H_{o3}: Environmental attitude (EA) has no significant effect on Green Purchasing Behavior.

H_{o4}: Perceived consumer effectiveness (PCE) has no significant effect on Green Purchasing Behavior.

H_{o5}: Skepticism (SKEP) has no significant effect on Green Purchasing Behavior.

H_{o6}: Social influence (SI) has no significant effect on Green Purchasing Behavior.

H_{o7}: Personal norms (PN) has no significant effect on Green Purchasing Behavior.

H_{o8}: Green products (Gprod) has no significant effect on Green Purchasing Behavior.

H_{o9}: Green price (Gprice) has no significant effect on Green Purchasing Behavior

H_{o10}: Green place (Gplace) has no significant effect on Green Purchasing Behavior.

H_{o11}: Green promotion (Gpromo) has no significant effect on Green Purchasing Behavior.

H_{o12}: Profiles have no controlling effect on the effect of psychographic factors in terms of the seven psychographic factors and four green marketing mix factors on green purchasing behavior

2.   METHODS

2.1   Research Design

With the objective of using data to draw information from statistical analysis and mathematical models, the researchers used a causal research design. The study analyzed the effect of PF and GMM factors on the GPB of Filipino consumers. The descriptive quantitative method was seen as the best fit for the research design. The researchers also used an explanatory method to study since it investigated whether PF and GMM factors affect GPB.

2.2   Locale of the Study

The researchers conducted the survey within National Capital Region (NCR) also known as Metropolitan Manila. The researchers chose this as the target locale of the study due to its inhabitants' size, the number of enterprises, and the improved standard of living. Given the number of corporate offices and the population currently situated in the NCR, the location is ideal for gathering the number of target respondents for the study. The area also shows the highest spending per trip in the country based on a recent survey from tatista (2022).

2.3   Respondents of the Study

The questionnaire was distributed online to a reasonable number of participants from different backgrounds living in NCR, who were 18 years old and up to 64 years old. This age group is based on the legal working-age population of the Philippines, from the most recent PSA data according to Commission on Population. These age groups are those who are willing to experience and pay for the products which meet their needs and wants.

2.4   Sampling Design

The questionnaire was distributed online to a reasonable number of participants from different backgrounds living in NCR, who were 18 years old and up to 64 years old. This age group is based on the legal working-age population of the Philippines, from the most

recent PSA data according to Commission on Population. These age groups are those who are willing to experience and pay for the products which meet their needs and wants.

2.5 Research Tools and Instruments

The study used both primary and secondary data, where primary data were collected from respondents by using a well-structured questionnaire. The researchers used a standard survey questionnaire by combining the questionnaire from the study of Faouri et al. (2019), and Hossain et al. (2018). The construction was conventional, and only modest modifications were made to accommodate the study.   The questionnaire contains a total of 54 items and is divided into four sections; the demographic information section which includes, gender, age, educational level, address, and income level, the psychographic factors scale in the second section (22 questions), and the third section includes the scale for green marketing mix factors (23 questions). The last section is questions regarding the dependent variable GPB (9 questions). The survey questionnaire used a four-point Likert scale with equivalents: 1- Strongly Disagree, 2- Disagree, 3- Agree, and 4 – Strongly Agree. The reliability of the questionnaire used was also tested. Reliability testing produced a Cronbach's Alpha value of .919 which indicates that the instrument is reliable for use in the study.

2.6 Data Analysis and Interpretation

Mean was used to summarize the responses of the respondents regarding PF, GMM, and GPB. The data were interpreted using the following scales in Table 1:

Table 1. Verbal Interpretation of Responses

Scale used in the Survey Instrument	Numeric Value	Mean	Psychographic Factors	Green Marketing Mix Factors	Green Purchasing Behavior
Strongly Disagree	1	1.00 - 1.75	Negative	Negative	Negative
Disagree	2	1.76 - 2.50	Quite Negative	Quite Negative	Quite Negative
Agree	3	2.51- 3.25	Quite Positive	Quite Positive	Quite Positive
Strongly Agree	4	3.26 - 4.00	Positive	Positive	Positive

Multiple Linear Regression was used to determine the effect of psychographic factors and green marketing mix factors on green purchasing behavior. With this technique, one may determine the relationship between a single continuous dependent variable and two or more independent variables. A p-value of less than .05 indicates a significant effect. Also, standardized coefficients are used to determine which factor has the greatest contribution to GPB.

2.7 Ethical Considerations

The De La Salle Lipa ethical standards were followed in this study. The study and the survey were submitted to the Office of Research and Publication's Ethical Guidelines for ethics review. The questionnaire included instructions that the respondent's participation is fully optional and that they are free to stop at any moment. Additionally, the researchers ensured that respondents' responses are confidential and that their responses were assessed collectively rather than individually.

3. RESULTS AND DISCUSSION

3.1 Descriptive Statistics

3.1.1 Distribution of Respondents by Age, Gender, Address, Education, and Income:
The distribution of respondents in terms of their demographic profile is shown in Table 2.

Table 2. Distribution Table of Respondents by Age, Gender, Location, Education, and Income

Variables	Description	Frequency	Percent
Age	15-29	78	44.1
	30-44	65	36.7
	45-59	31	17.5
	60-64	3	1.7
Gender	Male	80	45.2
	Female	97	54.8
Address	NCR District 1	18	10.2
	NCR District 2	56	31.6
	NCR District 3	33	18.6
	NCR District 4	70	39.5
Education	Elementary	0	0
	Secondary	8	4.5
	Diploma	9	5.1
	Bachelor	136	76.8
	Post-graduate	24	13.6
Income	Below Php 10,000	15	8.5
	Php 10,000 – Php 20,000	21	11.9
	Php 20,001 – Php 30,000	26	14.7
	Php 30,001 and above	115	65

In terms of age, the majority of the respondents are 15-29 years old which implies that the majority of the respondents are within the working-age or economically active population range in the Philippines. Of the total number of respondents, 54.8 % are female and 45.2% are male. In this study, slightly more than half of the respondents are females, which is consistent with previous research studies that have shown that females are more likely to participate in surveys. In terms of their address, 39.5 % of the sample population is from NCR District 4 which implies that most of them are currently living in the business center of NCR who may have the ability and easy access in purchasing green products due to their income. Most of the education profile of the respondents is Bachelor with a percentage of 76.8%. 8.5% of the respondents earn a monthly income of below PHP 10,000 while 65% are earning a monthly income of PHP 30, 001 and above. This finding suggests that respondents are likely to have a good understanding of the issues related to the research topic. A significant proportion of respondents have a monthly income of PHP 30,001 and above, which suggests that they may have higher purchasing

power and consumer behavior. Income level is an important factor to consider and can influence attitudes and behaviors related to consumerism.

3.1.2 Perception of the Respondents on Psychographic Factors

Table 3 shows the perception of the respondents on PF.   A composite mean rating of 3.12 implies that the respondents have a high level of awareness and understanding regarding the impact of their consumption choices on the environment. This type of behavior can have a positive impact on the environment by reducing waste, conserving resources, and promoting sustainable production practices.

Table 3. Perception on Psychographic Factors

Psychographic Factors	Mean	Std. Deviation	Interpretation
Environmental Concern (EC)	3.49	0.45	Positive
Environmental knowledge (EK)	3.21	0.52	Quite Positive
Environmental Attitude (EA)	3.28	0.54	Positive
Perceived consumer effectiveness (PCE)	3.35	0.50	Positive
Skepticism (SKEP)	2.56	0.56	Quite Positive
Social influence (SI)	2.56	0.73	Quite Positive
Personal norms (PN)	3.42	0.55	Positive
Psychographic Factors (PF) Composite Mean	**3.12**	**0.36**	**Quite Positive**

Among the psychographic factors, EC got the highest composite mean of 3.49 which implies that this factor is positively perceived by the respondents. Biswas (2016) indicated an increase in environmental awareness is the result of higher sustainable consumption of green products. The result also showed that the other factors perceived as positive are PN, PCE, and EA with composite means of 3.42, 3.35, and 3.28, respectively. Consumer values may reflect public sentiment on a certain social problem, which may be important for nonprofit or charitable organizations. (Suttle, 2019).   Additionally, the beliefs that individuals hold for themselves while emphasizing the fact that these beliefs are the result of socially accepted norms. These individuals are likely to be aware of the impact of their actions on the environment, and they actively seek ways to reduce their carbon footprint. On the other hand, the respondents consider EK (3.21), SKEP (2.56), and SI (2.56) as quite positive. The respondents' skepticism and social influence also suggest that they are critical thinkers who are not swayed by greenwashing tactics. They are more likely to conduct research and seek out credible sources of information before making their purchasing decisions. Each consumer's specific behaviors can contribute to purchasing green products.

3.1.3 Perception of the Respondents on Green Marketing Mix Factors

Table 4 shows the perception of the respondents on GMM factors. A composite mean rating of 3.13 indicates that GMM is perceived quite positively by the respondents.   The importance of green marketing has grown significantly in the modern economy. The result implies that because of green marketing mix factors the respondents are likely to engage in green purchasing behavior.

Table 4. Perception on Green Marketing Mix Factors

Green Marketing Mix Factors	Mean	Std. Deviation	Interpretation
Green Product (Gprod)	3.33	0.51	Positive
Green Price (Gprice)	2.43	0.47	Quite Negative
Green Place (Gplace)	3.25	0.53	Quite Positive
Green Promotion (Gpromo)	3.51	0.46	Positive
Green Marketing Mix (GMM) Factors Composite Mean	**3.13**	**0.33**	**Quite Positive**

The respondents perceived green product (M=3.33) and green promotion (M=3.51) as positive factors while green place (M=3.25) is quite positive. This may imply that respondents have a positive perception of environmentally friendly products and promotional campaigns that encourage eco-friendly behaviors. However, they may not have access to green products in their local area or may not be aware of environmentally friendly stores or places to shop. This may suggest that there is a need for more accessible and visible green places that offer sustainable products to encourage more eco-friendly behavior. These factors place an emphasis on the promotion of environmentally friendly behaviors such as sustainable business operations, eco-friendly packaging, and environmental initiatives performed by an organization.

On the other hand, the green price (M=2.43) is perceived as slightly negative which indicates that the respondents have negatively thought about the cost of green products in their green purchasing decision. Green products are generally more expensive than standard products. This suggests that consumers prefer buying green products even when price discounts are not offered, and the price is not the first thing they look for before making the decision to purchase. In the Philippines, the result of an analysis of consumers' willingness to pay (WTP) for unprocessed food contrasted to conventionally grown food in the Philippines in 2019; around 43.38 % of the respondents stated that they would pay the same price as conventionally grown food products, and 33.33% stated that they would pay up to 25% more than conventionally grown food products (Statista, 2019).

3.1.4 Green Purchasing Behavior of Respondents
The green purchasing behavior of the respondents of the study is shown in Table 5. Based on the results, the respondents have a positive green purchasing behavior with a composite mean of 3.37. This result implies that respondents are conscious of the environmental impact of their purchasing decisions and are willing to choose eco-friendly and sustainable options. In the Philippines, 75% of Filipino consumers are actively looking for companies that provide solutions for reducing their environmental effects (Lezoraine, 2021). This could indicate a general awareness and concern for environmental issues among the population in this region. It may also suggest that there is a growing demand for green products and services in the market. Overall, this perception is a positive indicator of a shift towards more sustainable consumption patterns.

Table 5. Green Purchasing Behavior of Respondents

Variable	Mean	Std. Deviation	Interpretation
A. Green Purchasing Behavior			
1. I prefer green products over non-green products when their product qualities are similar.	3.56	0.57	Positive
2. I choose to buy products that are environmentally friendly.	3.45	0.64	Positive
3. I buy green products even if they are more expensive than non-green ones.	3.05	0.78	Quite Positive
4. When there is a choice, I always choose the product that contributes to the least amount of pollution.	3.49	0.61	Positive
5. I normally make an effort to limit my use of products that are made of or use scarce resources.	3.37	0.65	Positive
6. I have switched products for ecological reasons.	3.26	0.69	Positive
7. I purchase green products because I am aware of the benefits of green products for health.	3.41	0.67	Positive
8. I purchase green products because I want to go green.	3.37	0.67	Positive
9. I want to be a part of green movement by using green products.	3.41	0.66	Positive
Green Purchasing Behavior (GPB) Mean	**3.37**	**0.51**	**Positive**

3.1.5 Effect of Psychographic Factors in Terms of the Seven Psychographic Factors and Four Green Marketing Mix Factors

The result in Table 6 shows that among psychographic factors, only environmental attitude and personal norm predicts GPB significantly with p-values < 0.5. Furthermore, the result showed that among GMM only Gprice, Glace, and Gpromo significantly predict GPB with p-values < 0.5.

Table 6. Effect of Psychographic Factors in Terms of EC, EK, EA, PCE, SKEP, SI, and PN and Green Marketing Mix factors in terms of Gprod, Gprice, Gplace, and Gpromo on GPB

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig. (p-value)
		B	Std. Error	Beta		
1	(Constant)	-0.341	0.283		-1.207	0.229
	EC	-0.075	0.061	-0.066	-1.233	0.219
	EK	0.040	0.058	0.041	0.693	0.489
	EA	0.222	0.060	0.237	3.700	0.000*
	PCE	0.121	0.063	0.120	1.940	0.054
	SKEP	0.000	0.044	0.000	-0.006	0.995
	SI	0.010	0.033	0.014	0.307	0.759
	PN	0.153	0.057	0.167	2.690	0.008*
	Gprod	0.103	0.063	0.104	1.615	0.108

Gprice	0.120	0.051	0.111	2.352	0.020*
Gplace	0.131	0.058	0.135	2.246	0.026*
Gpromo	0.316	0.072	0.289	4.363	0.000*
R² = .701		**F-value= 35.19**			**p-value= .000b**

a. Dependent Variable: GPB

*b. *Significant*

The current findings are similar to the study of Faouri, Hayari, and Shatnawi, (2019) revealed that GPB is strongly affected by environmental attitudes followed by social influence and personal norms in Jordan. Moreover, the current finding is consistent with the results of the study of Hossain and Rahman, (2018) which revealed that Bangladeshi consumers' green purchasing behavior in terms of green marketing mix factors is significantly influenced by four components of the green marketing mix: green product, green price, green place, and green promotion.

Effect of EA, PN, Gprice, Gplace, Gpromo on GBP is positive which implies that the more positive they look at the PF and GMM the better their GPB will be. Overall, this implies businesses and marketers should recognize the positive effect of environmental attitudes and personal norms on green purchasing behavior and tailor their strategies to appeal to consumers who possess these psychographic factors. By aligning marketing efforts with these influential factors, companies can effectively encourage and promote sustainable consumption practices.

In summary, 70.1% of GPB can be attributed to changes in EC, EK, EA, PCE, SKEP, SI PN, Gprod, Gprice, Gplace, and Gpromo (R2=0.701; f-value=35.19; p-value=0.000). Further, Gpromo has the greatest contribution to GPB with a standardized B-coefficient of 0.289. Companies should put more effort into the green promotion of their product which can use various strategies such as highlighting the environmental benefits of their products and including eco-friendly certifications to promote their products. Consumers are more likely to purchase products that are marketed as environmentally friendly.

3.1.6 Controlling effect of Profile on the Effect of Psychographic Factors in Terms of the Seven Psychographic Factors and Four Green Marketing Mix Factors on Green Purchasing Behavior

Presented in Table 7 is the examination of how different profiles namely age, gender, address, educational attainment, and income, influence the effect of seven psychographic factors and four green marketing mix factors on green purchasing behavior. The analysis yielded a very small R^2 change of .007 with a corresponding *Sig F change* of .570. This indicates that adding the profile variables to the model did not provide a significant effect on the model. Further, it indicates that the profiles did not control the effect on green purchasing behavior. Noticeably, all the profiles in Model 2 are not significant (*p-values* <.05). This implies that the effect of psychographic factors and four green marketing mix factors is independent of profiles.

Table 7. Controlling effect of Profile on the Effect of Psychographic Factors and Green Marketing Mix Factors on Green Purchasing Behavior

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.341	.283		-1.207	.229
	EC	-.075	.061	-.066	-1.233	.219
	EK	.040	.058	.041	.693	.489
	EA	.222	.060	.237	3.700	.000*
	PCE	.121	.063	.120	1.940	.054
	SKEP	.000	.044	.000	-.006	.995
	SI	.010	.033	.014	.307	.759
	PN	.153	.057	.167	2.690	.008*
	Gprod	.103	.063	.104	1.615	.108
	Gprice	.120	.051	.111	2.352	.020*
	Gplace	.131	.058	.135	2.246	.026*
	Gpromo	.316	.072	.289	4.363	.000*
	R^2 Change = .701		F-change = 35.190		Sig F Change = .000	
2	(Constant)	-.427	.354		-1.206	.230
	EC	-.069	.062	-.061	-1.103	.272
	EK	.046	.060	.047	.765	.445
	EA	.211	.061	.225	3.447	.001*
	PCE	.122	.064	.121	1.908	.058
	SKEP	.009	.044	.009	.191	.849
	SI	.007	.034	.010	.204	.838
	PN	.151	.057	.165	2.631	.009*
	Gprod	.095	.065	.096	1.472	.143
	Gprice	.118	.052	.109	2.253	.026*
	Gplace	.135	.059	.140	2.291	.023*
	Gpromo	.311	.074	.284	4.211	.000*
	Age	.000	.030	.000	-.010	.992
	Gender	.056	.046	.055	1.203	.231
	Address	.030	.022	.062	1.378	.170
	Educ	-.011	.042	-.013	-.264	.792
	Income	-.007	.026	-.014	-.281	.779
	R^2 Change = ..007		F-change = .774		Sig F Change = .570	

a. Dependent Variable: GPB   *Significant

3.1.7 Effect of Overall Psychographic Factors and Green Marketing Mix Factors on Green Purchasing Behavior

Table 8 shows the effect of overall psychographic factors and green marketing mix factors on Green Purchasing Behavior. Results showed that PF and GMM factors significantly predict GPB with p ≤ 0.5. The effect of PF and GMM in GPB is positive. This indicates that improving PF and GMM may lead to better GPB of respondents. A study by Faouri et al. (2019) confirmed that psychographic factors significantly influence green purchasing behavior. Hossain et al. (2018) also found that green marketing mix factors are significant predictors of green purchasing behavior.

Overall, 65.2 % of GPB may be attributed to changes in PF and GMM R^2=0.652; f-value=163.299; p-value= 000b). Between the two, GMM was proven to have a greater contribution to GPB (Beta = .577).

Table 8. Effect of Psychographic Factors and Green Marketing Mix Factors on Green Purchasing Behavior

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig. (p-value)
		B	Std. Error	Beta		
1	(Constant)	-0.828	0.234		-3.539	0.001
	PF	0.451	0.079	0.317	5.705	0.000*
	GMM	0.893	0.086	0.577	10.372	0.000*
	R^2 = .652	**F-value= 163.299**				**p-value= .000b**

a. Dependent Variable: Green Purchasing Behavior

*b. *Significant*

3.2 Conclusion and Recommendations

Results showed that the respondents have a positive PF, GMM, and positive GPB. Overall, positive green purchasing behavior among respondents from NCR Philippines is a positive indication of their environmental consciousness and willingness to support sustainable and eco-friendly products. This behavior can contribute to promoting a more sustainable and environmentally friendly economy.

Further, it was revealed that EC, EK, PCE, SKEP, SI, and GProd do not significantly predict GPB. Therefore, the study fails to reject Ho1, Ho2, Ho4, Ho5, Ho6 and Ho8. On the other hand, EA, PN, GPrice, GPlace, and Gpromo significantly predict GPB. Therefore, the study rejects Ho3, Ho7, Ho9, Ho10, and Ho11. Further, results show that profile variables did not control the effect on green purchasing behavior, therefore, the study fails to reject Ho12. Overall, the result of the study suggests that consumers' value of the environment, personal norms, green price, and availability of green products and promotion play a significant role in shaping green purchasing behavior. Therefore, businesses and policymakers should prioritize promoting a green economy to encourage environmentally sustainable consumption.

This research can serve as a valuable source for businesses looking to evaluate their marketing strategies and develop connections between the production of green products and the consumer through their brands, manufactured items, and services. The research also represented the idea of sustainable marketing, which contemporary marketers may utilize as a strategic instrument to influence customers' green purchasing decisions.

Understanding the elements that influence customers' purchase behavior toward green products is crucial for maximizing the potential advantages of green marketing efforts.

Businesses that want to encourage green purchasing behavior among consumers need to improve both psychographic factors and green marketing mix factors. For instance, companies can promote environmental education programs, which can help improve the attitudes and values of consumers towards the environment. They can also invest in eco-friendly packaging and use green advertising to promote their green products, which can improve the green marketing mix factors and influence consumers' purchasing decisions. Companies should look for alternative environmentally friendly components, and processes that might lower the cost of standard products while maintaining their features and quality for consumer satisfaction and enhancing standard products.

Offering installment payment plans for green products may be a smart move for environmentally conscious businesses to cater customers who may have a limited budget but want to purchase green products. Consumer education regarding green products should come first for green marketers. Businesses and government should give customers ample information on green products. There are several ways of doing this, it could be the traditional method like having seminars, projects, and the modern method which could involve some interactive and rewards projects that will encourage individuals to learn and purchase more about green products. Companies must thus provide eco-friendly advertisements which should only contain information about the product or the business. Businesses need to constantly communicate environmental messaging to shift traditional purchase patterns as customer demand for information about "going green" has become the most significant factor affecting green purchasing behavior.

3.3 Limitations

Future researchers are recommended to conduct a study on another region to cover a larger sample and additional locations in addition to the possibility that each region might have its own unique culture and perspective. Analyzing respondents from other regions can further help companies to understand consumers in the Philippines.

3.4 Output

The researchers aim to increase the responsible consumption and purchase of green products. This study proposed an Information System Plan that aims to convert the chemical ingredients of the product as well as the current product packing into green alternatives available. This may help businesses increase the purchase of green products rate of their brand where the focus will be on sustainability practices. When using this system, businesses can create unique offerings with and for consumers. This means designing the green marketing mix's components in accordance with what green product buyers want.

The system to be proposed and developed is a computerized website that will be named "Green Guru" for the companies that can help the company in converting their processes into a green marketing mix. The system development life cycle consists of seven phases: Planning, Analysis, Design, Development, Testing, Implementation, and Development. The first phase is the Planning Phase where the proposed system, the project scope, and the project plan are to be identified. This plan involves departments such as Research and Development, Procurement, Information Technology, Production, Quality Control, and Marketing. This plan also includes processes such as researching and developing alternatives, procuring green alternatives, updating the manufacturing process, creating a quality control system, and developing a marketing campaign that will

aim to provide rewards to consumers like providing financial incentives, such as discounts or loyalty programs, for purchasing green products. This can motivate individuals with positive environmental attitudes to choose sustainable options even when they may be priced slightly higher than conventional alternatives. The main objective of this output is to make green products while maintaining the original quality of the product which will increase the green purchasing behavior of consumers.

This study primarily demonstrates managerial and marketing implications; marketers are advised to focus their research efforts on sources other than customer attitudes and to delve deeper into more specialized product categories. Companies and marketers may use social and sustainable marketing approaches that put an emphasis on successful green marketing initiatives and promotions.

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