Motivating Factors Influencing Green Buying Behavior of Generation Z: An Application of Theory of Planned Behavior (TPB)

Hiba Qazi[1], Sadaf Alam[2], Amanullah Phulpoto[3]

[1] IAE Aix-Marseille University, France. Email: hiba.qazi@iae-aix.com
[2] Sukkur IBA University, Pakistan. Email: amanullah.phulpoto@iae-aix.com
[3] IAE Aix-Marseille University, France. Email: sadafalam.msmgts22@iba-suk.edu.pk

ARTICLE INFO	ABSTRACT
	This study used the Theory of Planned Behavior as the theoretical foundation to investigate the motivating factors influencing Generation Z consumers' green purchasing behavior in Pakistan. Using a random sampling technique, the researchers gathered information from over 300 Gen Z consumers between the ages of 10 and 25 using a survey questionnaire. Utilizing a quantitative research approach, the study used Smart PLS 3.0 software and Partial Least Square Structural Equation Modelling (PLS-SEM) to analyze the data. Green purchase intention, green buying behavior, green attitudes, perceived behavioral control, and green social norms were the variables examined. The results of the study indicate that there is a significant relationship between "green attitudes," "green social norms," and "green purchase intention" with green buying behavior, with a p-value of less than 0.05 and t-value where of more than 1.96. However, with a p-value larger than 0.05 and a t-value less than 1.96, green perceived behavior control was not a significant predictor. Overall, the study indicates that Pakistan's Generation Z customers are more concerned with environmental issues and are favorably inclined to buy eco-friendly goods. These findings have implications for managers who can create more environmentally friendly products specifically targeting Gen Z.

Corresponding Author's Email: hiba.qazi@iae-aix.com

1.   Introduction

There has been considerable debate surrounding the notion that economic advancement is accompanied by the depletion of natural resources, leading to heightened concerns within the realms of both the environment and society (Sadik-Zada, 2021). The natural ecosystems and quality of life have been impacted by environmental challenges such as global warming resulting from the production of carbon dioxide (CO_2) and the reduction of forest covers. In addition, the international community is presently confronted with numerous global environmental challenges and barriers, including the insufficient execution of waste management strategies, which further intensify the process of environmental degradation. Consequently, contemporary consumers have exhibited heightened awareness and concern over the present and future state of the environment (Kumar, Garg, & Singh, 2022). According to the findings of Majeed, Ahmed, and Rasheed (2022), the researcher, there has been a significant increase in consumer interest and participation in the consumption of environmentally sustainable products.

According to Kamalanon, Chen, and Le (2022) , there is an increasing tendency among customers to adopt purchasing behaviors that have the potential to generate positive environmental outcomes or, at the very least, minimize negative environmental impacts (Kamalanon et al., 2022). Furthermore, extant research indicates that individuals who possess a strong environmental consciousness exhibit a propensity to allocate a higher monetary value towards the acquisition of environmentally-friendly goods and services (Shao, Li, Aneye, & Fang, 2022). Consequently, it is widely posited that the inclination of customers towards

environmentally friendly products is rooted in a sincere apprehension for the well-being of the earth (S. Chen et al., 2021). According to (Khaleeli & Jawabri, 2021), a significant proportion of participants from nine affluent nations in a recent global survey indicated their consistent engagement in the consumption of environmentally conscious "green" items. The consumption of ecologically friendly "green" products has witnessed an upward trend not only in rich nations but also in developing countries. More than eighty percent of consumers in a number of countries, including Malaysia, Thailand, and Korea, have indicated that they are willing to pay more for environmentally friendly "green" products (Islam, 2021).

Nevertheless, although the significance attributed to environmentally-friendly items, it has been noticed that Pakistan is deficient in implementing such practices. In contrast, it is worth considering that Pakistan, being classified as a developing country, has the potential to embrace procurement strategies that foster the advancement of a sustainable environment and lifestyle (Chien et al., 2021). In contrast, the Global Green Economy Index (GGEI) reveals that Pakistan occupies the 24th position among Asian nations in relation to its performance in the green economy. This assessment is based on a score of merely 29% (Abid, Ikram, Wu, & Ferasso, 2021). In order to enhance its performance in this domain, Pakistan can endeavor to fulfil the global standard for green economic performance, as assessed by the Green Progress Report. Consumers in Pakistan can significantly contribute to the attainment of this objective by embracing sustainable practices and integrating environmentally friendly items into their everyday routines. The Green Progress Index utilizes a benchmark that incorporates key elements, including green leadership and sustainability, which are crucial in the pursuit of an economy that is more ecologically conscious (Shao et al., 2022).

Based on the preceding discussion, a research investigation conducted on a cohort of Millennials (also known as Generation Y) unveiled a correlation between environmentally conscious and sustainable actions, and concerns regarding the environment, engagement in environmental citizenship, collective orientation, and a perception of consumer efficacy (Mi et al., 2020) The results indicate that several criteria, including generation, age, and marital status, are associated with the relationship between wasteful spending and sustainable purchasing and consumption patterns. According to Williams and Hodges (2022), a notable observation has been made regarding the consumption habits of different generations. Specifically, it has been found that individuals belonging to the baby boomer generation exhibit higher levels of wasteful consumption compared to those in the millennial and Z generations. This discrepancy suggests that the latter cohorts demonstrate a greater inclination towards sustainable purchasing and consumption practices. Furthermore, it is imperative to comprehend the generational disparities among consumers when investigating the factors that could impact consumers' environmentally conscious purchasing behavior. Each cohort of generations possesses distinct values, beliefs, cultural norms, and behavioral tendencies compared to the previous generation (Casalegno, Candelo, & Santoro, 2022). It has been observed that individuals belonging to Generation Y exhibit a growing preoccupation with future prospects. Specifically, they display a heightened emphasis on matters pertaining to safety, social equity, and environmental sustainability within the framework of a sustainable or ecologically conscious society (The Deloitte Global Millennial Survey, 2019). A separate study conducted by Ivanova, Flores-Zamora, Khelladi, and Ivanaj (2019) examined the impact of generational cohorts, specifically generations X and Y, on consumer behavior related to green shopping. Nevertheless, the analysis conducted failed to include Generation Z. This demonstrates the need for further investigation into the factors that encourage different age groups to purchase environmentally friendly products, with a focus on including Generation Z research.

According to Ajzen (1991) Theory of Planned Behavior, an individual's intentions may influence their actions (Ajzen, 1991). To engage in behaviors, one must comprehend the intension of behaviors. Nevertheless, behavioral structures explain how individuals respond to stimuli. Individuals who priorities environmental concerns are more inclined to express an intention to acquire things that are ecologically friendly. Using this theory, the research will also examine the environmental consumption patterns of Generation Z in order to identify their shared and unique practices (Gansser & Reich, 2023; Kumar et al., 2022; Sun & Yoon, 2022; Vu, Ha, Ngo, Pham, & Duong, 2022). Based on the aforementioned context, the objective of this study is to examine the motivational factors that influence the environmentally conscious

purchasing behavior of individuals belonging to Generation Z. To achieve this aim, the research will pursue the subsequent objectives:

1. To examine the influence of Green Attitude, Green Subjective Norms, and Green Perceived Behavioral Control on Green Purchase Intention.
2. Examine Green Buying Behavior of generation Z.

In align with these above objectives, following are the research questions of the study:

1. To what extent do Green Attitude, Green Subjective Norms, and Green Perceived Behavioral Control influence Green Purchase Intention?
2. What extent does generation Z has tendency to engage in green buying behavior?

This study aims to investigate the factors that influence the green buying behavior of generation Z consumers. This study contributes to the theoretical and managerial knowledge the by extending existing Theory of Planned Behavior (TPB) and incorporating the Generational Cohort Theory (GCT). With addition to that this study specially focuses on the youngest cohort of the consumers who have active participation in the market – Generation Z. The primary theoretical contribution of this research is the integration of the widely accepted Theory of Planned Behavior (TPB) with the Generational Cohort Theory (GCT). The Generational Cohort Theory (GCT) posits that individuals with in the same generation share different values, lifestyles, beliefs and experiences, which shape their attitude and behavior significantly, including their consumption patterns (Thangavel, Pathak, & Chandra, 2022). The inclusion of the Generational Cohort Theory within the scope of this study recognizes the significance of generational variances and their influence on consumer behavior. This integration of the theory allows to provide a more comprehensive and generation-specific perspective on sustainable consumption. With addition to that, our study also contributes by analyzing the attitudes and beliefs of generation Z, who are going to become the largest consumer group in the near future. By analyzing and studying the behavior of generation Z, we aim to offer valuable insights to marketers and managers for promoting sustainable consumption practices. This paper is further structured in the following manner. The current section will be followed by literature review that discusses the theories involved and provides research model along with hypothesis developed (Section 2). The study's methodology will then be discussed in Section 3 which covers research design, target population, sample size, procedure and measurement scale for data collection. Afterwords, Section 4 will provide the findings and discussion of the data collected. Finally, the last section will discuss the research's theoretical and practical implications, limitations, and potential future avenues of study.

2.   Literature Review and Hypothesis Development

The literature review section of this study will define the theoretical underpinnings. Theoretical frameworks will offer substantiation for the formulation of a hypothesis grounded in previous scholarly investigations. Based on this premise, a research model will be subsequently constructed.

2.1.   Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) is comprised of three key components: attitudes, subjective norms, and perceived behavior control. These components exert a favorable impact on the intention to make a purchase, which subsequently influences actual behavior (Ajzen, 1991). The study on food preferences was evaluated from the perspective of the consumer using the framework of planned behavior put forward by (Nunes, Ordanini, & Giambastiani, 2021). Moreover, previous scholarly investigations have examined the green food ambitions of Asian consumers by employing the Theory of Planned Behavior (TPB) as demonstrated by (Tong, Anders, Zhang, & Zhang, 2020). Accordingly, the use of TPB has demonstrated significant efficacy in the realm of worldwide customer behavior prediction and forecasting. Qi and Ploeger (2021) in their research used the theory to clarify people's food preferences. For example, the research findings indicate that approximately 50% of forecasts made in the fast-food business and almost 60% of consumer purchase intentions are estimated. Amoako, Dzogbenuku, and Abubakari (2020) conducted a study to ascertain the efficacy of the Theory of Planned Behavior (TPB) in forecasting customers' intentions to engage in the purchase of environmentally-friendly food products (Amoako et al., 2020). Similarly, the theory of planned behavior Chan and Hon (2020) has been employed to predict environmentally friendly food and beverage behaviors that

safeguard the food environment. According to the findings of studies, the consumption of environmentally friendly foods and beverages is influenced by factors such as dedication, perceived behavioral control, and perceived understanding. The current study utilizes the Theory of Planned Behavior (TPB) to understand the green purchasing behaviors of individuals belonging to Generation Z.

According to the theoretical framework of Theory of Planned Behavior, it is postulated that an individual's intentions possess the capacity to exert an influence on their subsequent behaviors (Ajzen, 1991). The possession of a conceptual understanding of behavioral purpose is a prerequisite for engaging in deliberate actions. The utilization of intentions as a proxy for assessing actions is seen. In contrast, behavioral constructions pertain to the manner in which individuals behave in reaction to a certain stimulus. Individuals who self-identify as environmentally conscious exhibit a greater propensity to engage in the purchase of products that are deemed to be environmentally friendly, as shown by their behavioral intentions (Vu et al., 2022). This study will also examine the behavioral patterns of individuals belonging to Generation Z in order to identify the collective and distinct approaches they choose towards environmentally conscious consumption. The section that follows will examine TPB factors in relation to green products. This will include generation Z's "green attitude", "social norms", "perceived behavioral control", "green purchase intention", and "green purchasing behavior".

2.1.1. Green Attitude
Hassan, Hsbollah, and Mohamad (2022) have identified a potential causal relationship between an individual's mental state and their inclination to engage in consumer purchasing behavior. A recent study conducted by Majeed et al. (2022) revealed that consumers' attitudes towards environmentally friendly products positively influence their inclinations to make green purchases. Amoako et al. (2020) found that there exists a favorable connotation among individuals' environmentally conscious views and their corresponding real purchase behavior (Amoako et al., 2020). Furthermore, the perception of eco-friendly items has a mediating role in the relationship between customers' inclination to allocate financial resources and their likelihood to engage in such expenditure (Kim, Joo, & Hwang, 2022). Yet, separate research directed by Ogiemwonyi (2022) discovered the variation in attitudes towards green products among different generations (Ogiemwonyi, 2022). We hereby present the following hypothesis:

H1: Green attitude positively increases the purchase intention of buying green products for Gen Z.

2.1.2. Green Social Norms
Norms refer to patterns of behavior that are shaped and influenced by social groupings, communities, or individuals who have close relationships. Consequently, individuals may observe a discernible alteration in their behavioral performance due to the impact of social influence (Ajzen, 1991; Watanabe, Alfinito, Curvelo, & Hamza, 2020). Therefore, this study suggests that subjective norms have an impact on individuals' intention. Furthermore, a considerable body of research has shown evidence of a strong correlation between subjective norms and attitude, perceived behavioral control, and purchase intention (Santos & Liguori, 2020). In addition to the aforementioned findings, Ogiemwonyi (2022) observed that the influence of green social standards on individuals' inclination to acquire environmentally friendly products exhibits variation throughout different generations. As a result, we formulated the hypothesis that:

H2: Green social norms positively increase the purchase intention of buying green products for Gen Z.

2.1.3. Green Behavioral Control
According to Ajzen's study, there is a strong correlation between an individual's belief in their capacity to govern their behaviors and the future outcomes of those activities (Ajzen, 1991; Watanabe et al., 2020). Multiple research investigations have indicated that an individual's perception of their ability to exert control over their own behaviors has a pivotal role in determining their level of motivation (Sotos-Martinez, Tortosa-Martínez, Baena-Morales, & Ferriz-Valero, 2023). Hence, the perceptions held by customers regarding their personal ability to manage their behavior directly impact their inclination to engage in a transaction. A study

conducted by Larranaga and Valor (2022) stated that individuals' purchasing decisions about ecologically friendly food goods are influenced by their own values. Ru, Wang, Chen, and Yan (2018) have postulated that variations in individual capacities, temporal constraints, financial means, and available resources may influence an individual's perceived level of control over their own actions. Consequently, we formulated the hypothesis that:

H3: Green perceived behavioral control positively increases the purchase intention of buying green products for Gen Z.

2.1.4. Green Purchase Intentions and Green Buying Behavior

The purchasing behavior of customers that prioritizes environmentally friendly products and services, commonly referred to as "green buying behavior," can be attributed to the implementation of green marketing strategies. Green marketing serves as a mechanism to promote and enhance social well-being. Individuals commonly employ environmentally conscious practices in order to minimize the potential negative impacts on the environment and society that may arise from their consumption and disposal of everyday products (Ogiemwonyi & Harun, 2021). Abrar, Sibtain, and Shabbir (2021) suggests that individuals belonging to Generation Y demonstrate a heightened emphasis on societal stability and environmental sustainability, hence displaying more positive views towards the adoption of environmentally-friendly behaviors (Abrar et al., 2021). With the exacerbation of environmental issues, there is an increasing awareness among individuals regarding environmentally friendly items (Lou & Li, 2021). This theory posits that an individual's actions are influenced by their desires and intentions. The presence of a behavioral intention construct is necessary for the execution of a specific action. The utilization of intentions as a metric for assessing behavior might be regarded as a surrogate. Thus, we have formulated the following hypothesis:

H4: Green purchase intentions positively influence green buying behavior of Gen Z.

2.2. Generation Cohort Theory

The notion of generational cohorts provides an explanation for the variations observed among different generations (Edmunds & Turner, 2005). According to this theoretical framework, the formation of individuals' values, attitudes, beliefs, and inclinations is shaped by historical events and societal transformations. Based on a previous investigation, individuals who are part of the millennial generation, commonly referred to as Generation Y, possess the capacity to propel the environmental sustainability movement due to their proclivity for assuming the role of catalysts for change and pioneers in modern society (Strydom, Meyer, & Synodinos, 2021). According to several publications, Generation Y is defined as persons born between the years 1980 and 1994, although there may be discrepancies in the specific birth years assigned to this generation by different authors (Budiman, 2021). According to the Deloitte Millennial Survey of 2018, as individuals belonging to the millennial generation transition into adulthood, they are displaying a heightened level of apprehension regarding matters pertaining to safety, social equity, and environmental preservation. Consequently, they are cultivating a progressively stronger inclination towards advocating for sustainable consumption behaviors, with the aim of fostering a more environmentally conscious society. The interest of Generation Y in sustainability plays a crucial role in encouraging sustainable consumption practices, given their substantial representation among the consumer community. Hence, the attitudes and actions of individuals towards sustainability have the potential to shape the market and make a positive impact on environmental preservation. In contrast, Generation Z refers to individuals who were born throughout the time frame of 1995 to 2010 (Seemiller & Grace, 2018). Generation Z has been exposed to a greater abundance of technological advancements compared to preceding generations. Individuals who have grown up in the digital age have been exposed to the internet from an early stage, thereby acquiring a high level of proficiency in technology and possessing extensive knowledge about global affairs.

Nevertheless, there exists a dearth of empirical evidence regarding the variations in green purchasing behaviors among different generations. Aydogdu and Kaya (2020) conducted a study examining the impact of age, gender, and marital status on sustainable consumption behaviors within the context of Turkish consumers. The results indicate a correlation between wasteful expenditure and many dimensions of sustainable consumption behaviors across different generations. Significantly, it was seen that individuals belonging to the baby boomer cohort exhibited the highest levels of extravagant expenditure, whereas those from the Y and Z

generations displayed the lowest amounts. Therefore, it is imperative to understand the determinants that drive different age cohorts to engage in the consumption of environmentally friendly products. A separate study was conducted to investigate the influence of generational cohorts, specifically generations X and Y, on consumers' environmentally conscious purchasing behavior. The analysis conducted by Casalegno et al. (2022) does not include the Generation Z. The aim of this research is to improve current Theory of Planned Behavior by integrating the Generational Cohort Theory (GCT) in relation to Generation Z, the most recent cohort of people who engage in market-based consumer activities. Generation Z is defined as those individuals born between the years 1995 and 2010 (Seemiller & Grace, 2018). The objective of this research is to gain a comprehensive understanding of the green purchasing behavior exhibited by individuals belonging to generation Z, using the Theory of Planned Behavior (TPB) as a theoretical framework. The findings of this study will contribute to the development of efficient policies aimed at fostering sustainability among younger consumers. Following the discussion,

Figure 1: Research Model for Green Buying Behavior of Gen Z
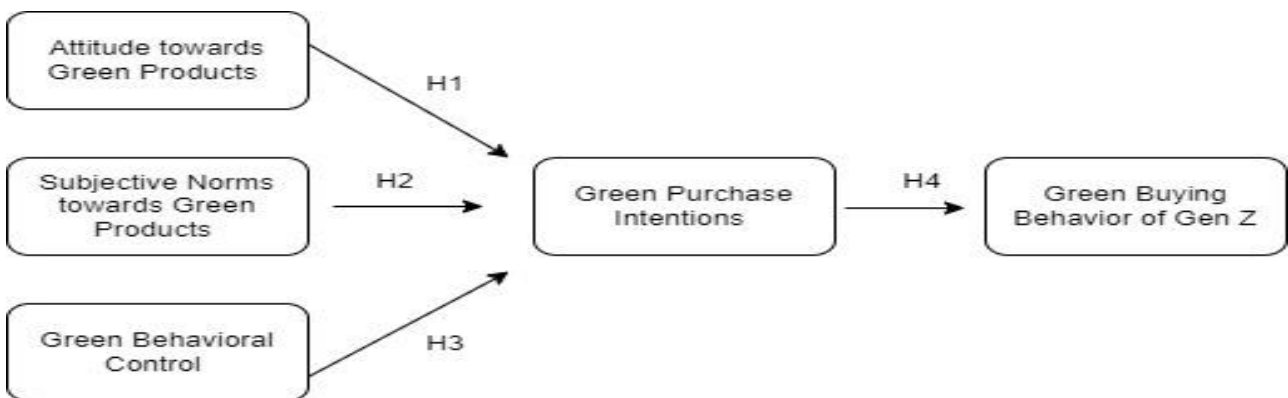
3.   Research Methodology

The following part of the study describes the methodology in detail, including the research design, targeted population, sample size, data collection procedure, and scales of measurement. The presented information attempts to provide a thorough comprehension of how the research was conducted.

3.1.   Research Design

The purpose of the study is to analyze the factors that influence the green buying behavior of generation Z consumers. This study uses quantitative research approach. Quantitative research is the methodical collection and analysis of numerical data in order to draw statistical conclusions regarding a certain phenomenon (Mohajan, 2020). In order to examine correlations and trends within a dataset, it needs acquiring structured, quantitative data (Taherdoost, 2022). As such, it is a suitable method for scientifically measuring things like "green attitude", "green subjective norms", "green behavioral control". Moreover, deductive reasoning is used in quantitative research, which begins with a theory or hypothesis, gathers data, analyses it, and draws conclusions (Haque, 2022) It is a hypothesis-driven method that aims to support or reject preliminary assumptions, which makes it a good fit for addressing the study's research issues. Moreover, the data was collected using survey, a data research tool. These surveys yield quantitative insights into the complex relationships between these variables.

3.2.   Target Population

The study was carried out in Sukkur, Sindh, Pakistan, with a focus on Generation Z green consumers as the study participants. The age range of the participants spanned from 10 to 25 years, and they were persons who had received education and resided in metropolitan regions. Hocquette, Liu, Ellies-Oury, Chriki, and Hocquette (2022) have posited that there exists a correlation between education level and environmental consciousness among customers residing in metropolitan areas, with educated individuals displaying a greater awareness and understanding of green products compared to their less educated counterparts in rural regions (Hocquette et al., 2022). Consequently, the researchers specifically recruited participants who were university-level students and professionals in order to ensure the acquisition of precise and reliable data for this study. According to Hocquette et al. (2022), individuals residing in

rural areas with lower levels of education may possess less knowledge and understanding of environmental concerns and related subject matters. Furthermore, to gather the necessary data, the researchers utilized the random sampling technique to select participants for the study.

3.3. Sample Size

The determination of the study's sample size followed the guideline of Hair Jr, Anderson, Tatham, and Black (2006) which suggests having 15 to 20 observations per item. The study employed a questionnaire consisting of five dimensions and a total of 24 items. Specifically, the questionnaire included six items pertaining to green buying behavior, three items related to green purchase intention, five items concerning green attitude, five items addressing green social norms, and five things exploring green behavioral control. The study aimed to have a sample size of 360 respondents, calculated by multiplying 24 items by 15 observations. In order to do so, 422 survey questionnaire were distributed, however, only 87% of total (367 out of 422) were returned. Prior to doing data analysis, the data obtained from our survey undertook a comprehensive data cleaning and screening procedure utilizing IBM SPSS. Initially, we detected and resolved the issue of missing values by the utilization of mean imputation technique. Following this procedure, a total of 58 observations, accounting for 15.8% of the initial 367 observations, were eliminated. Furthermore, the identification of outliers was accomplished by employing descriptive statistics and box plots. Subsequently, any extreme values were eliminated from the dataset, resulting in a final sample size of 302 observations. The variables were normalized and converted where necessary, to ensure data satisfied the assumptions of statistical test. Consequently, 302 respondents were included in the final data set used for analysis. According to Hair, Black, Babin, and Anderson (2010) this sample size lies within the recommended range of 150-400 respondents for conducting structural equation modeling (SEM) analysis with SmartPLS3.0. Procedure Self-administered questionnaires were used to gather data for this study, and they were delivered between January and March of 2023. The participants were informed in advance that they would be required to answer a brief survey about products that are environmentally friendly. In addition, participants received assurances that their answers would be treated with the utmost confidentiality. When the survey first began, it advised respondents to think about purchasing ecologically friendly goods. In addition, the participants received instructions to complete a 10-minute survey in which they were exposed to a series of statements. After that, participants were asked to indicate how much they agreed or disagreed with the statements that had been presented. Green buying behavior of Gen Z was the dependent variable in the study, whereas "green attitude", "green social norms", and "green behavioral control" were the independent factors.

3.4. Measurement Scale

The researchers employed appropriate scales and measures derived from previous studies in order to investigate the study inquiries. This study uses pre-validated items to create questionnaire. Before collecting the data using the developed survey questionnaire, we performed pilot study on 68 consumers from the targeted sample of generation Z from Sukkur city to access the validity and reliability of questionnaire. The results for the pilot study suggests minor modifications to simplify the wording in few statements in order to reduce confusion and make it more clear for targeted participants. Following minor adjustments, the questionnaire was ultimately refined and employed as the primary instrument for data collection in this research endeavors. The participants employed a Likert-scale consisting of five points to assess their level of agreement with a set of statements. The scale ranged from "1" representing strong disagreement to "5" representing strong agreement. The study examined green purchasing behavior, intention, attitude, social norms, and behavioral control. From Wu & Chen, 2014 the green behavior scale had six items. The green purchasing intention scale had three items by (Chang & Chen, 2008; Pavlou, 2003). Five items from C.-C. Chen, Chen, and Tung (2018) composed the environmental attitude scale. The green social norms scale consisted of five questions, as noted by (Ermolaeva, 2010; Sreen, Purbey, & Sadarangani, 2018). To enhance the validity of the green behavioral control scale, researchers incorporated four questions from Armitage and Conner (1999) study and one item from Awuni and Du (2016) study.

4. Findings and Discussion

This study's data was analyzed using IBM SPSS Statistics 26 and SmartPLS 4 software. The demographic data was analyzed using IBM SPSS Statistics 26 software, and the hypothesis was tested using Structural Equation Modelling (SEM) with the assistance of SmartPLS 4 software. This part covers the findings derived from the analysis of data, beginning with the

presentation of demographic information. After, we conducted construct validity and reliability assessment to measurement model. Subsequently, the results of the structural modelling assessment are documented in order to evaluate the hypothesis.

4.1. Demographic Results

In order to gain insight into the characteristics of the participants, demographic information was gathered and subsequently analyzed. The study focuses on the generation known as Generation Z; hence the participants encompass individuals aged between 10 and 25 years. With regards to gender, the survey results indicate that 71.8% of participants identify as male, 27.9% identify as female, and a minor proportion of 0.3% chose not to disclose their gender. In relation to employment status, it is observed that 38.2% of the participants identify themselves as private employees, whilst 44.8% of the respondents indicate their occupation as students. According to the data, 10% of the respondents are employed by the government, while 7% of the respondents identify themselves as small business owners. The findings indicate that a significant proportion of participants, specifically 80.7% (244 out of 302), reported an income ranging from Rs.0 to Rs.50,000. In contrast, a smaller percentage of respondents, namely 19.2% (58 out of 302), indicated earning between Rs.50,001 and Rs.100,000. Based on the aforementioned findings, the data indicates that persons residing in emerging nations with lower income levels had a significant level of awareness and understanding regarding green products, as well as a propensity to engage in sustainable behaviors. The survey results reveal that a significant proportion of participants, specifically 90.2%, reside in urban localities, whilst a smaller percentage of 9.8% reside in rural regions. This disparity suggests that metropolitan areas exhibit a greater prevalence of environmentally conscious customers.

4.2. Measurement Model Assessment (Construct Validity and Reliability Analyses)

The measurement model was evaluated using construct validity and reliability assessment, as indicated in Table 1. Cronbach's Alpha Cronbach (1951), rho_A, and Composite Reliability are statistical measures commonly used in academic research. According to Nunnally and Bernstein (1994), it is suggested that coefficient alpha levels exceeding 0.70 can be considered satisfactory. The values obtained for all constructs are above the designated threshold of 0.7, suggesting that the internal consistency reliability is adequate. The Average Variance Extracted (AVE) values for all constructs demonstrated convergent validity by surpassing the required threshold of 0.5. (Hair Jr et al., 2006; Tabachnick & Fidell, 2007).

Table 1: Construct Validity and Reliability Assessment

Variables	Cronbach's Alpha	rho_A	CR	AVE
Green Attitude	0.711	0.832	0.818	0.528
Green Behavior Control	0.719	0.745	0.816	0.473
Green Buying Behavior	0.822	0.845	0.869	0.526
Green Purchase Intention	0.798	0.800	0.881	0.713
Green Social Norms	0.795	0.837	0.857	0.551

Source: authors' calculations

4.3. Assessment of Discriminant Validity

The assessment of discriminant validity was conducted using three distinct methodologies: Heterotrait-Monotrait Ratio (HTMT) Henseler, Ringle, and Sarstedt (2015) Fornell-Larcker, and cross loadings. Based on the results reported in Table 2, it is evident that all HTMT values were below the specified threshold of 0.85. This observation implies that there exists empirical support for the discriminant validity among the various constructs. Based on the research conducted by Henseler et al. (2015), the results provided in Table 3, commonly referred to as the Fornell-Larcker results, demonstrate that the square root of the average variance extracted (AVE) for each construct surpassed its association with any other construct. The aforementioned observation serves to enhance the existing body of evidence that supports the discriminant validity of the instrument, as proposed by (Fornell & Larcker, 1981). The results of the cross-loadings study for Table 4 revealed that each indicator demonstrated a higher loading on its assigned construct in comparison to any other construct. This finding serves as supplementary support for the presence of discriminant validity.

Table 2: **Heterotrait-Monotraitratio (HTMT) Results**

	Green Attitude	Green Behavioral Control	Green Buying Behavior	Green Purchase Intention	Green Social Norms
Green Attitude					
Green Behavioral Control	0.989				
Green Buying Behavior	0.844	0.698			
Green Purchase Intention	0.861	0.747	0.769		
Green Social Norms	1.025	0.919	0.766	0.763	

Source: authors' calculations

Table 3: Fornell-Larcker Results

	Green Attitude	Green Behavioral Control	Green Buying Behavior	Green Purchase Intention	Green Social Norms
Green Attitude	0.727				
Green Behavioral Control	0.701	0.688			
Green Buying Behavior	0.662	0.572	0.725		
Green Purchase Intention	0.672	0.575	0.650	0.844	
Green Social Norms	0.788	0.716	0.639	0.640	0.742

Source: authors' calculations

Table 4: Cross Loadings Results

	Green Attitude	Green Behavioral Control	Green Buying Behavior	Green Purchase Intention	Green Social Norms
GA1	0.797	0.529	0.650	0.590	0.616
GA2	0.007	0.248	0.017	0.003	0.126
GA3	0.830	0.520	0.466	0.438	0.589
GA4	0.824	0.587	0.546	0.574	0.629
GA5	0.798	0.629	0.463	0.553	0.711
GBB1	0.388	0.396	0.736	0.423	0.408
GBB2	0.372	0.348	0.753	0.423	0.403
GBB3	0.361	0.304	0.679	0.381	0.403
GBB4	0.552	0.367	0.744	0.375	0.504
GBB5	0.531	0.456	0.656	0.448	0.418
GBB6	0.610	0.541	0.777	0.665	0.587
GBC1	0.508	0.706	0.425	0.400	0.464
GBC2	0.202	0.542	0.179	0.272	0.287
GBC3	0.347	0.697	0.354	0.375	0.385
GBC4	0.564	0.654	0.489	0.389	0.542
GBC5	0.680	0.814	0.466	0.502	0.698
GPI1	0.497	0.511	0.549	0.795	0.480
GPI2	0.552	0.457	0.563	0.877	0.523
GPI3	0.646	0.489	0.537	0.858	0.611
GSN1	0.369	0.434	0.337	0.230	0.536
GSN2	0.715	0.596	0.472	0.474	0.834
GSN3	0.619	0.588	0.520	0.605	0.841
GSN4	0.520	0.494	0.485	0.403	0.666
GSN5	0.645	0.547	0.534	0.545	0.790

Source: authors' calculations

4.4. Structural Model Assessment

In this work, four hypotheses were formulated and examined using the bootstrapping function of SmartPLS. The findings of the investigation are displayed in Table 5 and Figure 2. The primary aim of the structural model evaluation was to assess the associations between the constructs in the research model and determine their level of explanatory capacity. Table 5 illustrates the findings obtained from doing an analysis of the structural model. This table provides information on many metrics, such as path coefficients, t-statistics, p-values, R^2 Cohen (1988), f^2, and VIF values, for each relationship. The findings of this study indicate a statistically significant and positive association between individuals' Green Attitude (GA) and their intention to engage in Green Purchase (GPI) ($\beta = 0.397$, $p = 0.002$). At a 95% confidence level, the t-statistic value of 2.901 surpasses the crucial value of 1.96, so offering further support for the relevance of this relationship. The present finding posits that generation Z consumers possess a heightened nclination towards buying green products and environmental concerns (Dragolea et al., 2023). Numerous factors can be responsible for these results. Growing up at a time when environmental responsibility and sustainability are becoming more and more important is a challenge for Generation Z. Individuals tend to exhibit a general enthusiasm towards adopting

environmentally friendly products, primarily driven by the overarching narrative of promoting positive transformation that is closely linked to such choices (Nguyen, 2021). The inclination of Generation Z towards green products can be attributed to their aspiration to participate in a purposeful and influential movement. Individuals perceive their consumer decisions as a means of actively engaging in the pursuit of a more sustainable and improved future (Dragolea et al., 2023).

The findings indicate a positive and statistically significant link between Green Social Norms (GSN) and Green Purchase Intention (GPI) which β = 0.236, and p = 0.012. The t-statistic value of 2.261 exceeded the threshold value of 1.96. The calculated f^2 value of 0.036 in connection to the GSN-GPI association suggests a small effect size, implying that the influence of GSN on GPI may have less effect. These finding indicates that generation Z consumers' intentions to purchase green products are positively influenced by their sense of societal norms and expectations related to green consumption (Liang, Li, & Lei, 2022). Generation Z consumers exhibit a greater understanding of the dominant values and expectations that exist among their peer groups and society at large (Lavuri, Jusuf, & Gunardi, 2021). Consequently, these factors significantly influence their patterns of consumption behavior. Moreover, the relationship exhibits a strong interconnectivity facilitated by social media and digital platforms, wherein sustainability and eco-consciousness emerge as prevalent subjects of discourse (Abrar et al., 2021; Liang et al., 2022). Consequently, individuals are subjected to and impacted by a societal context that promotes and occasionally extols environmentally conscious decisions. Moreover, individuals' inclination to adhere to cultural norms concerning environmentally friendly consumption is intricately linked to their perception of social identity and affiliation (Liang et al., 2022). Generation Z frequently has a propensity for seeking association with others who possess similar ideologies and apprehensions regarding environmental matters. Consequently, individuals' inclination to acquire environmentally friendly products is bolstered by their aspiration to conform and harmonize with the predominant eco-conscious ethos within their social circle.

Furthermore, the results of the statistical analysis indicated that there was no statistically significant association found between Green Behavior Control (GBC) and Green Purchase Intention (GPI) with β= 0.128 and p = 0.244. The aforementioned result was substantiated by a t-statistic of 1.157, which was found to be lower than the critical value of 1.96. The obtained f^2 value of 0.014 suggests a small effect size, which supports the notion that the relationship between GBC and GPI is weak. It appears that generation Z's personal behavioral control does not significantly affect their desire to buy green products. (Lavuri, Jindal, Akram, Naik, & Halibas, 2023). These results are consistent with Lavuri et al. (2023) on the developing Asian countries i.e. India and Indonesia, they also found no significant impact of perceived behavior control on purchase intention for sustainable products. There could be multiple reasons for no significant relationship between these variables in Asian context. The decision to acquire environmentally friendly products for generation Z may influenced by factors such as peer pressure, advertising, and broader sustainability movements exert a more significant influence than their individual sense of control (Lavuri et al., 2021). In addition, there has been a notable surge in the market's accessibility and availability of eco-friendly products. With the increasing prevalence and ease of access to eco-friendly alternatives, consumers may perceive that they may make meaningful contributions to environmental problems without necessitating a significant level of personal control (Lavuri et al., 2023). The perceived significance of personal behavioral control may be diminished when individuals find it increasingly convenient to integrate sustainable choices into their everyday routines.

The study found a substantial positive link between Green Purchase Intention (GPI) and Green Buying Behavior (GBB) with β = 0.650, p = 0.001. The t-statistic of 11.917 was significantly higher than the critical value of 1.96. The relationship between GPI and GBB is deemed significant based on the large effect size indicated by the f^2 value of 0.733. The results demonstrate a positive correlation between green purchase intention and green buying behavior of generation Z (Dragolea et al., 2023). Generation Z has increased propensity to actively pursue and articulate a desire to acquire things that are environmentally friendly can be seen as a manifestation of their profound environmental awareness, positive attitude towards green products and their prioritization of sustainability (Dragolea et al., 2023). This may be attributed to the extensive accessibility of information facilitated by the internet and various social media

platforms (Sethuraman, 2023). The increased level of consciousness results in a sincere desire to make environmentally conscious decisions, recognizing the possible favorable consequences for the natural world (Dragolea et al., 2023). Additionally, generation Z has a notable inclination towards green products, accompanied by the influence of peers and society, which plays a substantial role in the congruence between their intentions and actions (Lavuri et al., 2021). Frequently, individuals actively participate in dialogues and social groups that foster the promotion of sustainability, so strengthening their inclination to procure environmentally-friendly goods and subsequently manifesting tangible behavioral changes. Moreover, the forward-thinking viewpoint of Generation Z and their aspiration to effect constructive change in society play a crucial role (Nguyen, 2021). These potential driving forces, compelling generation Z consumers to translate their intentions into concrete actions by proactively finding and purchasing environmentally-friendly products (Dragolea et al., 2023).

In relation to the adequacy of the model, the Adjusted R² coefficient of 0.419 indicates that the model accounts for approximately 42% of the variability observed in the dependent variable GBB. This level of explanatory capability can be regarded as moderate. Regarding the issue of multicollinearity, it is observed that the Variance Inflation Factor (VIF) values for all associations in the model were found to be below the established threshold of 5. This suggests that multicollinearity does not pose a concern in the current analysis (Diamantopoulos & Siguaw, 2006). In summary, the assessment of the structural model yielded valuable insights into the interconnections among the constructs inside the study model. The research conducted an examination of four hypotheses by utilizing the SmartPLS bootstrapping algorithm. The outcomes of this analysis are presented in Table 5 and Figure 2. The t-statistics values for three out of the four hypothesized trajectories exhibited statistical significance at the p 0.05 level, with a t-value greater than 1.96 (two-tailed). The study indicates that Generation Z's green shopping behavior is influenced by three key factors: "Green Attitude", "Green Social Norms", "Green Purchase Intention". The discussed factors revealed positive and statistically significant impact. However, there was no statistically significant impact found between green purchase intentions and green behavioral control. Consequently, it was discovered that while H2 was not supported, hypotheses H1, H3, and H4 were. The collective findings indicate that attitudes, social norms, and intentions to buy together drive green buying behavior among generation Z consumers.

Table 5: Structural Equation Modelling Results Estimates

Relationship	Original Sample	Mean	Std. Dev.	t-Stat	Prob.	Adj R²	f²	VIF
Green Purchase Intention ► Green Buying Behavior	0.650	0.665	0.055	11.917	0.000	0.418	0.733	1.000
Green Attitude ► Green Purchase Intention	0.397	0.387	0.137	2.901	0.002		0.105	2.933
Green Behavior Control ► Green Purchase Intention	0.128	0.149	0.111	1.157	0.124		0.014	2.283
Green Social Norms ► Green Purchase Intention	0.236	0.240	0.104	2.261	0.012		0.036	3.057

Source: authors' calculations

Figure 2: PLS Bootstrapping Model
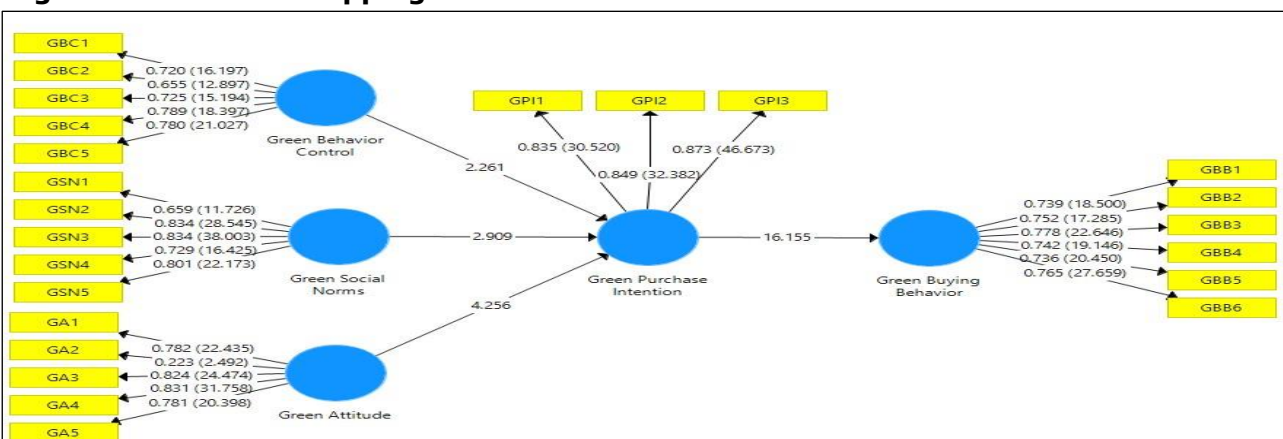
5. Discussion

The findings of this study provide valuable insights into the factors that influence environmentally conscious consumption among the Z generation, particularly in emerging economies. An analysis of the respondents' demographic features indicates that a significant proportion of the participants have low incomes, lying between Rs. 0 and Rs. 50,000. It is worth mentioning that individuals with lower incomes exhibited a significant inclination towards participating in environmentally-friendly consumption practices, suggesting an increased awareness of sustainable behaviors. Measurement model yield good construct validity and reliability outcomes. Cronbach's Alpha, rho_A, Composite Reliability, and Average Variance Extracted (AVE) values above acceptable thresholds, indicating strong internal consistency and reliability. The assessment of discriminant validity was conducted using various methods, including the Heterotrait-Monotrait (HTMT) ratios, Fornell-Larcker criteria, and cross-loadings. These analyses further confirmed the validity of the study model, as they demonstrated that the components under investigation were really separate and distinct from each other.

The examination of the structural model facilitated a more comprehensive comprehension of the interconnections among the components under investigation. The correlation between Green Attitude (GA) and Green Purchase Intention (GPI) indicates that individuals who possess positive attitudes towards eco-friendly products and demonstrate environmental concern are more likely to indicate a more robust intention to buy products that are consistent with these principles. This finding aligns with other studies that emphasize the importance of individuals' green attitudes in influencing their intentions to make environmentally friendly purchases. Moreover, the significant and positive correlation observed between Green Social Norms (GSN) and Green Purchase Intention (GPI) implies that persons who perceive strong social norms and expectations related to environmentally-friendly consumption are more likely to exhibit higher levels of intention to engage in green purchasing. The findings illustrate the importance of sociocultural variables in fostering sustainable consumer behavior. The effect magnitude seen in this study is quite moderate, indicating that the impact of GSN on GPI may have certain limitations.

On the contrary, the absence of a significant relationship between Green Behavior Control (GBC) and Green Purchase desire (GPI) suggests that the level of control individuals have over their environmentally friendly actions may not be a significant predictor of their desire to make green purchases. The findings of this study indicate that factors beyond apparent control, such as attitudes and social conventions, might exert a more significant influence on the green purchase intentions of the Z generation. The robust and significant correlation observed between Green Purchase Intention (GPI) and Green Buying Behavior (GBB) underscores pivotal significance of purchase intents in driving tangible environmentally conscious shopping actions. In accordance to TPB, that asserts that intentions serve as crucial indicators of real-world behavior, this finding illustrates the substantial predictive power of intentions in relation to actual behavior. In summary, the outcomes of this study contribute to our understanding of the determinants that impact the consumption behaviours of Generation Z in developing countries with a focus on environmental awareness. The notable correlations among Green Attitude, Green Social Norms, and Green Purchase Intention, as well as the robust association between Green Purchase Intention and Green Buying Behavior, underscore the importance of these variables in promoting environmentally conscious purchase. This study offers valuable insights for politicians, marketers, and environmental advocates seeking to encourage young consumers in developing nations to embrace eco-friendly buying behaviors.

5.1. Theoretical and Managerial Implications

The study's primary objective is to investigate the determinants that impact the environmentally conscious purchasing behavior of Generation Z. Using the Theory of Planned Behavior Ajzen (1991) in green context Steg and Vlek (2009), this study offers a thorough framework for comprehending the key elements influencing young consumers' (Gen Z) green purchasing behavior. By examining factors which impact Generation Z's green buying behavior in developing countries, this study adds to both theoretical and managerial implications, discussed below:

5.1.1. Theoretical Implications

Our study integrates the Theory of Planned Behavior with the green contextual factors, which allow us to offer holistic view of the factors influencing green consumption of the consumers. The theoretical integration enriches the existing literature by providing comprehensive understanding of the psychological and contextual factors that drive the green purchase behavior among Generation Z. Furthermore, by highlighting the significance of generational characteristics in comprehending green consumption behavior, our work adds to theoretical knowledge. The data analysis in our study reveals that Gen-Z's purchase intentions, green views, and social norms have a major impact on consumers' purchasing behavior. This further emphasizes how crucial generational cohorts are to consumer research.

5.1.2. Managerial Implications

With respect to managerial implications, our study offers actionable insights for marketing managers. Understanding that the green attitude of Generation Z significantly impacts their green purchase behavior, managers can design and develop targeted marketing strategies and advertisements that may promote the sustainable consumption practices of the consumers. These strategies may include enhancing the perceived value of green products, building the trust of consumers in brand, raising awareness about the green consumption and addressing price sensitivity through effective marketing activities. Additionally, we also emphasize the significance of social influence on the promotion of green consumption. In this regard, marketing managers can capitalize on opinion leaders especially among the female consumers who are more likely to advocate for sustainable development. By empowering these individuals to share their experiences and expertise related to green products, manages can foster a culture of environmentally friendly consumption and boost their public confidence in making green consumption choices. Lastly, policy makers and environmental activists can use the findings of our study to design more effective strategies for promoting green consumption among Gen-Z. by understanding the factors that influence their buying behavior can guide the development of policies that incentive eco-friendly products and sustainable practices.

5.2. Limitations and Future Research Directions

Although this study offers valuable insights into the green consumption patterns of Generation Z individuals in emerging countries, it is important to acknowledge many limitations. The utilization of convenience sampling may restrict the generalizability of the findings to the full Z generation. In order to enhance the diversity of the sample, it is recommended that forthcoming studies employ suitable sampling methodologies, such as stratified or cluster sampling. Furthermore, the report fails to consider any other age cohorts, instead focusing exclusively on the Generation Z demographic. Further investigation is warranted to assess the variables that influence the environmentally conscious consumption behaviors exhibited by various age cohorts. Moreover, the present investigation is centered on a solitary emerging nation. Future study should aim to perform cross-cultural comparative studies that examine the environmental behavior of the Z generation in both developed and developing nations. This will contribute to a more comprehensive understanding of global green consumption trends. This study concludes by solely assessing the direct correlations among the research constructs. Potential avenues for future investigation may involve exploring the potential mediating influences of additional factors, such as environmental concern, eco-literacy, or cultural values, on the relationships between green attitudes, social norms, and green purchasing behavior. Future research endeavors will aim to enhance our understanding of the determinants that impact the adoption of sustainable consumption practices among young individuals. By addressing the aforementioned limitations and broadening the scope of this study, these future investigations will aid in the development of effective strategies to promote environmentally conscious consumption in emerging economies.

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