



Green Purchasing Behaviour among Generation Z Consumers in Kathmandu Valley

Ranjana Aryal*

**Master of Business Administration, Ace Institute of Management, New Baneshwor, Kathmandu, Nepal, Pokhara University, Pokhara, Nepal.*

*Corresponding Email: *ranjana.aryal07@gmail.com*

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Abstract: Purpose: *The study attempts to examine the general perception regarding green products and determinants of green purchasing behavior. Subsequently, the purpose of this study is to examine the factors that influence green purchasing and general perception among Generation Z in Kathmandu valley.*

Design/Methodology/Approach: *The causal comparative research design was employed in the study to investigate the causal link between determinants of green purchasing behavior. Data, gathered from 221 respondents through structured questionnaires distributed via KOBO toolbox, utilized convenience sampling. Quantitative analysis involved both descriptive and inferential statistics, employing the PLS-SEM method.*

Findings: *The study finds environmental knowledge, government influence, and social influence have significant impact on green purchase behavior. However, environmental attitude, and environmental responsibility did not influence the green purchasing behavior of Gen Z in Kathmandu valley.*

Research Limitations/Implications: *This study is limited to Generation Z in Kathmandu valley, utilizing cross-sectional data, which may restrict generalizability. Future research should explore the determinants of green purchasing behaviors. Nevertheless, the outcome of the study will assist all stakeholders, including policymakers and marketers in Kathmandu Valley.*

Practical Implication: *The application of this study is extensive. The study's findings will assist businesses, marketers, policymakers, and environmental advocates. Understanding these factors can help businesses tailor their products, marketing strategies, and communication efforts to better appeal to this demographic, thereby increasing their market share in the growing green product market. Similarly, the study's findings can contribute to the promotion of sustainable consumption practices in Kathmandu Valley, aligning with global efforts to address environmental challenges.*

Originality/Value: *To the best of the author's knowledge, this study is one of the earliest studies to examine the relationship between green purchasing behavior among gen Z in Kathmandu valley by using PLS-SEM.*



Keywords: *Environmental Attitude, Environmental Knowledge Environmental Responsibility, Gen Z, Government Influence, Green Purchase Behavior, Kathmandu Valley.*

1. INTRODUCTION

Green marketing emerged from the idea of businesses taking responsibility for protecting the environment. (Kotler, 2011). Many scholars consider marketing, especially social marketing and de-marketing, as a possible bridge between consumer behavior and environmental sustainability. (Fatah et al., 2018). In keeping with this viewpoint, Hume (2010) noted that the main challenge for environmentalists isn't consumption itself but finding a balance between sustainability goals and consumption. Kotler (2011) argued that marketing's role in promoting environmental sustainability should focus on reshaping, adjusting, and redirecting the marketing mix to align with sustainability principles. A crucial step in understanding green purchasing is recognizing the factors that drive consumers to choose environmentally friendly products (Huang et al., 2014). Numerous researchers in green marketing have found that green consumers are driven by the intention to minimize their environmental impact. Their behavior is influenced by various factors, including their personal abilities, attitudes, and external environmental conditions (Jansson et al., 2010). Gen Z consumers are at the forefront of the green consumption movement, reflecting the broader green marketing megatrend. This transformation is driven by their environmental consciousness and desire for status, positioning them as the first generation to embrace sustainable lifestyle choices on a large scale (Atkinson & Rosenthal, 2014).

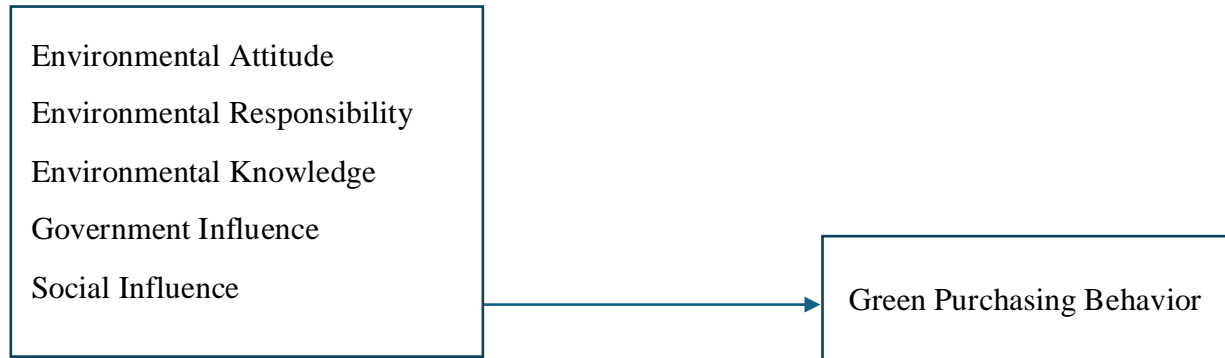
The primary objective of this research is to investigate the factors influencing green purchasing behavior among Generation Z consumers, specifically focusing on environmental responsibility, social influence, environmental knowledge, environmental attitude, and government influence. This study aims to identify the general perception of Generation Z consumers regarding green products and examine the key determinants that drive their purchasing decisions within the Kathmandu Valley. By understanding these dynamics, this study seeks to provide insights into how this demographic interacts with sustainable products and what motivates their green purchasing behavior.

2. RELATED WORKS

People engaging in green purchasing behavior prioritize buying eco-friendly products to support the environment, demonstrating awareness of environmental issues and encouraging companies to produce more environmentally friendly items (Zahid et al., 2017). Generation Z people were born between the mid-1990s and mid-2010s. According to Tan (2011) Generation Z consumers, often referred to as the "web generation" or "digital natives," exemplify a group that is highly engaged with technology and the internet, exhibiting common devices their unique communication style and reliance on digital sometimes creates generational gaps.

Research Framework

Figure 1: Conceptual Framework



Source: *Abrar et al. (2021) and Sinnappan and Rahman (2011)*

Specifications of Variables

Green Purchasing Behavior

"Green purchasing" refers to the practice of buying products that are less harmful to the environment while avoiding those that cause more damage (Chan, 2001). This approach involves a deliberate decision-making process by consumers who prioritize environmentally sustainable and socially responsible products and services. The growing awareness of environmental harm caused by personal shopping habits, coupled with a willingness to take action to reduce this damage, drives this trend (Chan, 2001). Numerous studies on green purchasing behavior have shown that regular product consumption is a significant contributor to the global environmental crisis (Pearce & Atkinson, 1993). Since the 1970s, researchers have explored consumer attitudes towards eco-friendly products, testing various hypotheses on how consumer attitudes, values, beliefs, and knowledge influence the adoption of eco-friendly product categories (Bui, 2005).

Environmental Attitude and Green Purchasing Behavior

According to Lee (2009), people's views about the environment strongly affect whether they choose to buy green products. Mostafa (2007) discovered that how consumers feel about buying environmentally friendly items can influence whether they intend to buy them and do so. Sinnappan and Rahman (2011) had a similar finding. Based on these studies, our research forms the hypothesis that if someone cares about the environment, it will significantly influence whether they choose to buy green products.

H1: *Environmental attitude has a significant impact on green purchasing behavior.*

Social Influence and Green Purchasing Behavior

The way people interact with others, as highlighted by Ryan (2001), influences their social dynamics. In simpler terms, when individuals connect with others who share similar values, thoughts, and beliefs, they tend to communicate and engage more. Chen-Yu and Seock (2002) discovered that peers play a crucial role in influencing product purchases. Social pressure has been identified as a strong motivator for environmentally conscious spending, as found by Lee



(2009) and Abdul Wahid et al. (2011). Building on these findings, our study proposes the hypothesis that the social influence of an individual significantly affects their green purchasing behavior.

H2: Social influence has a significant impact on green purchasing behavior.

Environmental Responsibility and Green Purchasing Behavior

According to Zheng et al. (2020), individuals consider social responsibility as a crucial aspect of their lives, actively seeking better policies to address environmental problems. A study conducted in Hong Kong revealed a clear connection between a sense of responsibility for the environment and the choice to purchase green products, especially among younger demographics (Lee, 2009). Moreover, women tend to play a more active role in addressing environmental issues. Understanding this sense of responsibility is vital in comprehending how it motivates people to actively participate in environmental causes, contributing to the development of a sustainable future (Zheng et al., 2020). Based on this, the study formulated the hypothesis that environmental responsibility significantly influences green purchasing behavior.

H3: Environmental responsibility has a significant impact on green purchasing behavior.

Environmental Knowledge and Green Purchasing Behavior

Environmental knowledge encompasses what individuals understand about protecting the environment and its ecosystems, including the key relationships and influences involved (Kaufmann et al., 2012). It plays a crucial role in helping individuals grasp the correct ways to engage in environmentally protective behavior (Vicente-Molina et al., 2013). In a study by Aman et al. (2012) conducted in Malaysia, it was found that while environmental knowledge does not directly predict attitude, it significantly and positively influences green purchase intentions. Uddin and Khan (2018) also discovered that environmental knowledge has a significant impact on young consumers' green purchasing behavior.

H4: Environmental Knowledge has a significant impact on green purchasing behavior.

Government Influence and Green Purchasing Behavior

Yang et al. (2023) highlighted how government policies, such as subsidies, taxation, and regulations, can shape consumers' choices towards environmentally friendly products. When governments offer incentives like subsidies or tax breaks for green products, it often encourages consumers to opt for these eco-friendly options due to lowered costs or increased accessibility. Additionally, regulations that mandate or promote environmentally sustainable practices in manufacturing can impact the availability and quality of green products in the market, influencing consumer preferences. This link between government initiatives and consumer behavior underscores the importance of policy frameworks in fostering a market environment conducive to sustainable consumption patterns (Yaun et al., 2021). The government plays a crucial role in motivating citizens to buy environmentally friendly products (Sinnapan & Rahman, 2011). Consequently, the study hypothesized that government influence significantly affects green purchasing behavior.

H5: Government Influence has a significant impact on green purchasing behavior



3. METHODOLOGY

This section presents the research methods used in this study.

Table 1: Variable and their measurement

Construct	No of Items and Adopted from	Scale	Cronbach Alpha	Sample
Environmental Attitude	5 Items from Sinnappan & Rahman, (2011)	5- points Likert scale	0.847	“It is important to promote green living in Nepal”
Social Influence	4 Items from Sinnappan & Rahman, (2011)	5- points Likert Scale	0.831	“I have learned a lot about environmentally friendly goods from my friends”
Environmental Knowledge	5 Items from Mostafa (2007)	5- points Likert Scale	0.860	“I understand the environmental phrases and symbols on product package.”
Environmental Responsibility	4 Items from Sinnappan & Rahman, (2011)	5- points Likert Scale	0.901	“Environmental protection starts with me”
Government Influence	4 Items from Sinnappan & Rahman, (2011)	5- points Likert Scale	0.774	“Nepal Government is responsible for environmental protection, not me”
Green Purchasing Behavior	4 Items from Sinnappan & Rahman, (2011)	5- points Likert Scale	0.861	When the quality of green and non-green products is the same, I choose green

Respondents and Procedures

This study used quantitative methods within a deductive framework to examine the green purchasing behavior of Generation Z consumers in Kathmandu Valley. Data were collected via structured questionnaires distributed online (70%) and in print (30%) across platforms like Email, Facebook, Viber, Instagram, and WhatsApp. A sample of 200 respondents was selected using convenience sampling. The study utilized cross-sectional data and analysis tools like Excel, SPSS, and Smart PLS, with reliability and validity ensured through pilot testing and Cronbach’s Alpha. Statistical methods, including descriptive analysis, path analysis, bootstrapping, and hypothesis testing, were used to explore the factors influencing green purchasing behavior.



Measurement Scale

The study used a structured questionnaire to gather data on green purchasing behavior among Generation Z in Kathmandu Valley. The questionnaire had three sections: personal information, general understanding of green buying, and specific green purchasing behavior. Responses were collected via printed (30%) and online (70%) formats, with a pilot test of 30 responses ensuring clarity and reliability. The five-point Likert scale (1 = strongly disagree, 5 = strongly agree) was used, and reliability was confirmed with Cronbach's Alpha and composite reliability (both above 0.7). Validity was assessed through convergent and discriminant validity using AVE, CR, and HTMT criteria, ensuring the measurement scale's reliability and validity.

Analysis Tool

The study utilized both descriptive and inferential statistical methods to analyze Generation Z's green purchasing behavior. Descriptive analysis, conducted with Microsoft Excel, summarized data patterns using mean, standard deviation, and dispersion. Inferential analysis, performed with Smart PLS, employed Structural Equation Modeling (SEM) to explore variable relationships and test hypotheses. Reliability and validity were assessed through measurement model analysis, while path analysis and bootstrapping were used for structural model analysis. The study also measured effect sizes (f-square), predictive relevance (Q-square), and explanatory power (R²) to ensure a comprehensive examination of factors influencing green purchasing behavior in Kathmandu Valley.

4. RESULTS AND DISCUSSION

Socio-Demographic Characteristics

Table 2: Socio-Demographic Profile of Respondents

Category	Frequency	Percentage
Gender		
Male	114	51.58
Female	96	43.44
Others	11	4.98
Education Level		
Plus 2	39	17.65
Bachelors	108	48.87
Master's and above	74	33.48
Occupation		
Government Employees	46	20.81
Businessperson/Entrepreneur	29	13.12
Hospitality Sector	21	9.5
Manufacturing	19	8.6
Medicine and Pharmacists	11	4.98



Education	35	15.84
Others Sector	60	27.15
Total	221	100

Source: Survey Data (2024)

Table 2 presents the demographic data of the 221 respondents, revealing that 51.58% were male, 43.44% female, and 4.98% identified as others. The higher male representation suggests a potential gender-related aspect in understanding green purchasing behavior. Educationally, most respondents were well-educated, with 48.87% holding a bachelor's degree, 33.48% a master's, and 17.64% having completed plus two educations, indicating they are likely informed and critical in their eco-friendly purchasing decisions.

Exploratory Factor Analysis

A thorough evaluation of Standardized Factor Loadings (SFL), Composite Reliability (CR), and Internal Consistency Reliability, measured by Cronbach's Alpha, was conducted to assess the model's reliability and validity. The measurement model examines the relationships between latent variables and their measures, revealing the underlying structure of the theoretical model (Williams & O'Boyle, 2008). To ensure reliable results, the SFL for all respondents was calculated, with factor loading scores for all observed items surpassing the 0.7 threshold (Purwanto, 2021), indicating satisfactory reliability. Internal consistency was also assessed using both Cronbach's Alpha and CR, with Cronbach's Alpha values ranging from 0.831 to 0.913 and CR values from 0.841 to 0.956 (see table 3), confirming a high level of internal consistency, well above the > 0.70 threshold.

Table 3: Exploratory Factor Analysis

Constructs	Notation	Factor Loading	AVE	Composite Reliability	Cronbach Alpha
Environmental Attitude	EA_1	0.82	0.713	0.956	0.904
	EA_2	0.839			
	EA_3	0.902			
	EA_4	0.854			
	EA_5	0.804			
Environment Knowledge	EK_1	0.84	0.73	0.883	0.878
	EK_2	0.869			
	EK_4	0.846			
	EK_5	0.863			
Environmental Responsibility	ER_1	0.927	0.851	0.925	0.913
	ER_2	0.921			
	ER_3	0.92			
Government Influence	GI_2	0.833	0.75	0.888	0.835
	GI_3	0.84			



	GI_4	0.922			
Green Purchasing Behavior	GPB_1	0.856	0.666	0.841	0.831
	GPB_2	0.714			
	GPB_3	0.848			
	GPB_4	0.837			
Social Influence	SI_1	0.841	0.689	0.851	0.85
	SI_2	0.818			
	SI_3	0.819			
	SI_4	0.842			

Source: *Researcher’s Calculation from Survey Data (2024)*

Note: one items of Environmental responsibility (ER_4), Environmental Knowledge (EK_3) and Government responsibility (GI_1) were dropped due to the factor loading issue as their factor loading were less than 0.7.

Table 3 showed the aspects of reliability and validity for all variables under consideration. Similarly, while using PLS to improve the analysis of CR, the values of Rho coefficients are taken into account. According to Purwanto (2021), the AVE should be more than 0.50. All of the observations in our analysis have AVE values more than 0.5, indicating a strong relationship between the items and their respective categories (Shrestha, 2021).

Table 4: Fornell and Larcker Criterion

	EA_	EK_	ER_	GI_	GPB_	SI_
EA_	0.844					
EK_	0.128	0.855				
ER_	0.113	0.14	0.923			
GI_	0.019	0.213	-0.016	0.866		
GPB_	0.221	0.603	0.233	0.249	0.816	
SI_	0.243	0.533	0.202	0.132	0.692	0.83

Source: *Researcher’s Calculation from Survey Data (2024)*

As shown in Table 4, the square root of the Average Variance Extracted (AVE) for each construct, displayed along the diagonal, is higher than the correlations with other latent constructs, meeting the required criteria. The Fornell and Larcker criterion was assessed and confirmed to be met. This indicates that the factors used to examine the relationships among environmental attitude, environmental knowledge, environmental responsibility, government influence, social influence, and green purchasing behavior are not affected by external variables.



Table 5: Discriminant Validity (HTMT)

	EA_	EK_	ER_	GI_	GPB_	SI_
EA_						
EK_	0.135					
ER_	0.115	0.154				
GI_	0.03	0.248	0.063			
GPB_	0.225	0.699	0.266	0.294		
SI_	0.253	0.612	0.225	0.145	0.815	

Source: *Researcher’s Calculation from Survey Data (2024)*

High HTMT scores indicate potential discriminant validity difficulties, implying that constructs may not be sufficiently different. A commonly accepted threshold for demonstrating discriminant validity is an HTMT value less than 0.85 (Henseler et al., 2015). The findings shown in table 5 all of the calculated HTMT ratios are less than the accepted threshold value of 0.85. This finding substantially supports and verifies the study's discriminant validity.

Predictive Relevance of the Model (Explanatory Power)

Table 6: f^2 , Q^2 and R^2

Predictors	Outcome (S)	R- Square	f-Square	Q-Square
EA	GPB	0.579	0.006	0.546
EK			0.148	
ER			0.018	
GI			0.034	
SI			0.375	

Source: *Researcher’s Calculation from Survey Data (2024)*

As depicted in table 6, The R^2 value, which quantifies the variation accounted for by every endogenous construct in the model, indicates the explanatory power of the model (Puwante & Sudargini, 2021). The model can explain 0.579 or 57.9%, variation in green purchasing behavior is explained by five independent variables. Similarly, F-Square values are used to measure the effect of external variables on internal variables when they are removed from the model. The results of the Partial Least Squares (PLS) algorithm indicate that Environmental attitude ($f^2 = 0.006$), Environmental Knowledge ($f^2 = 0.148$), Environmental Responsibility ($f^2 = 0.018$), Government influence ($f^2 = 0.034$) and social influence ($f^2 = 0.375$) have no significant effect on these constructs. Furthermore, the Q^2 values of 0.546, which is higher than zero (0), indicate that the model is predictive. These results suggest that the predictions made by the model are applicable and relevant.

Structural Model Analysis

For executing an SEM with PLS-SEM, it is suggested to test the collinearity issue. VIF is utilized in the study to test for collinearity. It displays the extent to which observed indicators are closely associated with one another, perhaps making it impossible to distinguish their



unique contributions to the latent construct they measure. VIF must be less than 3.33. Table 7 shows that the VIF lies ranges from 1.051 to 1.49, indicating that there is no indication of multicollinearity among the indicators used to assess environmental attitude, environmental knowledge, environmental responsibility, government influence and social influence.

Table 7: VIF Score

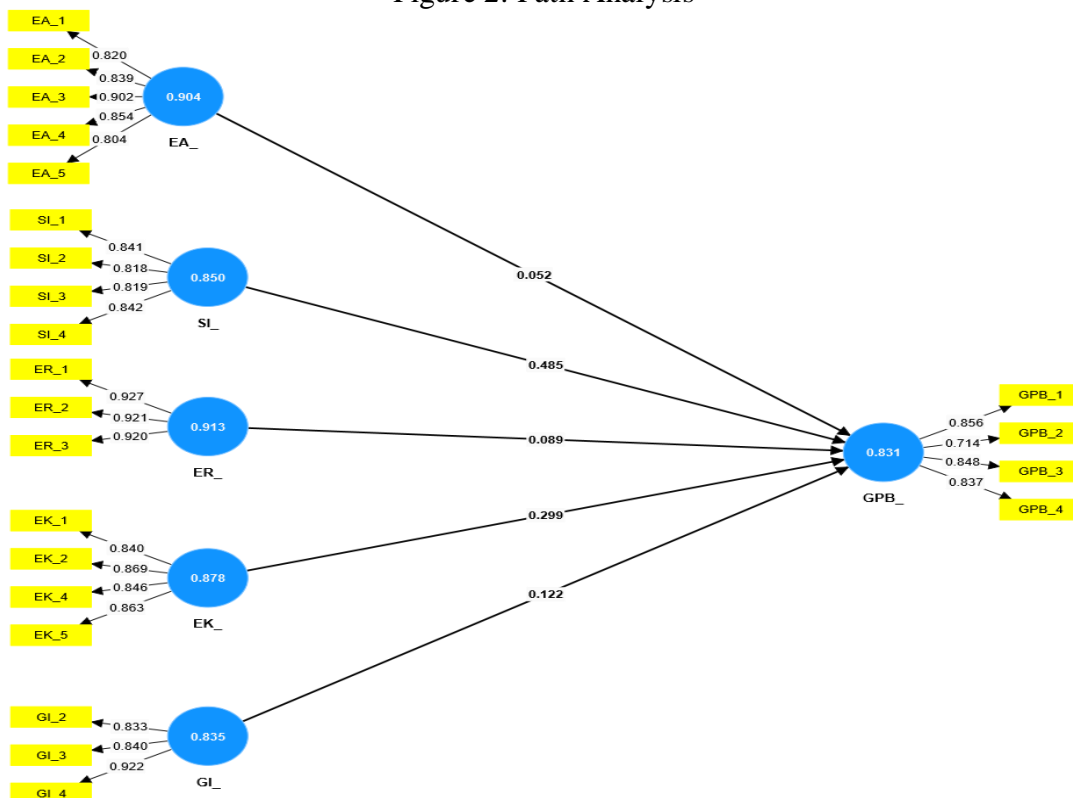
	VIF
EA_ -> GPB_	1.068
EK_ -> GPB_	1.442
ER_ -> GPB_	1.052
GI_ -> GPB_	1.051
SI_ -> GPB_	1.49

Source: *Researcher’s Calculation from Survey Data (2024)*

Path Analysis

Path analysis is a widely used method for analyzing causal models by exploring the relationships between a dependent variable and multiple independent variables (Crossman, 2019). The Smart PLS software was utilized to generate a path diagram for this analysis. The variables in the model are referred to as endogenous variables, and the path coefficients represent the standardized regression coefficients (beta weights) obtained from the analysis.

Figure 2: Path Analysis





Source: *Researcher’s Calculation from Survey Data (2024)*

Figure 2 displays a path diagram that illustrates the setup of six constructs with factor loading values across a total of 26 items. In the diagram, the path coefficients represent the strength and direction of the relationships between pairs of variables. A path coefficient of 0.052 indicates a positive but relatively weak association between environmental attitude and green purchasing behavior, suggesting that a higher environmental attitude leads to a modest increase in green purchasing behavior. Similarly, a path coefficient of 0.485 reflects a moderate positive relationship between social influence and green purchasing behavior, implying that greater social influence is associated with increased green purchasing behavior. A path coefficient of 0.089 shows a weak positive relationship between environmental responsibility and green purchasing behavior. Additionally, a path coefficient of 0.299 denotes a weak positive relationship between environmental knowledge and green purchasing behavior. Lastly, a path coefficient of 0.122 points to a weak positive relationship between government influence and green purchasing behavior.

Hypothesis Testing

Table 8: Hypothesis Testing

Structural Path	Beta Coefficient	Sample Mean (M)	CI (95%)		P values	Conclusion
			LLCI	ULCI		
			2.50%	97.50%		
EA_ -> GPB_	0.052	0.059	-0.025	0.145	0.232	Not Supported
EK_ -> GPB_	0.299	0.302	0.19	0.426	0.00	Supported
ER_ -> GPB_	0.089	0.09	0	0.182	0.054	Not Supported
GI_ -> GPB_	0.122	0.127	0.041	0.219	0.007	Supported
SI_ -> GPB_	0.485	0.479	0.355	0.593	0.00	Supported

Source: *Researcher’s Calculation from Survey Data (2024)*

Hypothesis testing involves evaluating the relationships between constructs to determine if the proposed model accurately fits the observed data and if the hypothesized relationships are statistically valid. Smart PLS utilized the bootstrapping technique with 10,000 data resampling to test the structural model, considering beta values, sample means, p-values, LLCI, and ULCI, as detailed in Table 8. The study tested five hypotheses at a significance level of 0.05, where a p-value less than 0.05 supports the hypothesis, and a p-value greater than 0.05 leads to its rejection (Kock, 2023). Additionally, the Confidence Interval (CI) test checks if zero falls within the interval; if it does not, the hypothesis is accepted regardless of the p-value’s statistical significance (Jr et al., 2017). Table 9 shows that three hypotheses (H2, H4, and H5) are consistent with the hypothesized direction, as they are statistically significant ($P < 0.05$) and their confidence intervals do not include zero. In contrast, the two hypotheses (H1 and H3) do not align with the hypothesized direction, as their p-values exceed 0.05 and their confidence intervals include zero.



5. CONCLUSIONS

This study explored green purchasing behavior among Generation Z consumers in Kathmandu Valley, using the Theory of Planned Behavior (TPB) to assess the impact of environmental attitude, social influence, environmental knowledge, environmental responsibility, and government influence. Addressing a gap in existing research, it focused on a demographic often overlooked in studies that usually center on other groups or developed countries. The findings highlight the significant role of social influence, environmental knowledge, and government influence on green purchasing decisions, while environmental attitude and responsibility had lesser impacts. The study emphasizes the need for targeted marketing strategies and educational campaigns to promote sustainable consumption in Kathmandu Valley. Future research could further explore effective strategies to engage Generation Z in green purchasing behaviors, offering practical insights for businesses, marketers, and policymakers.

Area for Further Research

Future research should consider longitudinal studies to track changes in green purchasing behavior among Generation Z in Kathmandu Valley. Cross-cultural comparisons with other cities or countries could shed light on cultural influences. While this study offers valuable insights, it has limitations, such as focusing only on Generation Z (ages 12-26) in Kathmandu Valley and relying on convenience sampling, which may introduce bias. Future studies could enhance external validity by using probability sampling and multiple data collection methods. Additionally, exploring the impact of social media influencers, government policies, technological advancements, and sustainable business practices on green purchasing decisions could provide deeper insights. Expanding the sample to include other generational cohorts would further generalize the findings, and investigating unsupported hypotheses could open new research avenues.

Conflict of Interest

The author stated that there are no conflicts of interest.

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