# “The moderating role of environmental knowledge in influencing sustainable consumption intention of Generation Z through Personal Norms, Social Norms, And Environmental Awareness”


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# THE MODERATING ROLE OF ENVIRONMENTAL KNOWLEDGE IN INFLUENCING SUSTAINABLE CONSUMPTION INTENTION OF GENERATION Z THROUGH PERSONAL NORMS, SOCIAL NORMS, AND ENVIRONMENTAL AWARENESS

## Abstract

As the world grapples with the pressing challenge of sustainable development, it has become increasingly vital to understand the factors that influence consumption behavior. Generation Z, in particular, has emerged as a pivotal demographic in advancing sustainable consumption practices. This study investigates how Personal Norms, Social Norms, and Environmental Awareness influence Generation Z's intentions regarding sustainable consumption while examining the moderating role of environmental knowledge in these dynamics.

Data were gathered through in-person interviews with 395 students from Osmaniye Korkut Ata University in Turkey. The results reveal that Social Norms ($\beta = 0.329$, $p = 0.000$), Personal Norms ($\beta = 0.265$, $p = 0.000$), and Environmental Awareness ($\beta = 0.178$, $p = 0.000$) have a positive impact on sustainable consumption practices, with social norms exerting the most decisive influence.

Furthermore, the findings indicate that individuals with high environmental knowledge and strong personal values are more likely to consume sustainably. In contrast, those who are significantly influenced by the behaviors of their peer groups do not show substantial differences in their consumption intentions based on their level of environmental knowledge.

**Keywords** environmental knowledge, Generation Z, sustainable consumption intentions, Turkey

**JEL Classification** M30, M31

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## INTRODUCTION

Since the dawn of the 21st century, numerous scholars have identified the overuse of resources as a pivotal challenge facing modern society. In response to resultant issues like climate change and ecosystem degradation, sustainability has emerged as a critical focal point (Ivanova et al., 2019; Kamenidou et al., 2021). Sustainable consumption was formally introduced at the 1992 United Nations Conference on Environment and Development (UNCED) in Agenda 21. This concept is defined as the utilization of goods and services that satisfy fundamental needs and enhance the quality of life without jeopardizing the welfare of future generations (Sun et al., 2021). Thus, while traditional consumer behavior models focus on individual desires and needs in product and service selection, sustainable consumer behavior shifts this paradigm, emphasizing environmental considerations over personal desires (Campbell & Winterich, 2018).



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Generation Z, the cohort succeeding millennials, has become an increasingly important target for green marketing efforts as environmental deterioration continues to pose severe threats to the world population (Song et al., 2020). Recent studies have found that this generation exhibits divergent levels of environmentally responsible behavior compared to other generations but also has intra-generational differences in their environmental sustainability orientation (Parzonko et al., 2021). Understanding the underlying drivers of Generation Z's sustainable consumption intention is crucial for developing effective green marketing strategies.

The environmental attitudes of Generation Z are shaped by a confluence of factors, including their society's easy access to information, prevalent overconsumption tendencies, improved economic conditions relative to earlier generations, and a heightened sense of future anxiety (Reyes et al., 2021). Focusing on Generation Z, sometimes known as the "younger generation," also intends to contribute substantially to our understanding of the factors influencing sustainable purchasing behavior. The findings are expected to highlight the crucial role that social norms and personal values play in fostering sustainable consumption practices, providing valuable insights into how this Generation's behaviors can influence broader societal efforts toward sustainability. This study aims to evaluate the impact of personal norms, social norms, and environmental awareness on Generation Z's sustainable consumption intention. It also aims to evaluate the moderating role of environmental knowledge in the impact of personal norms, social norms, and environmental awareness factors on sustainable consumption intention.

## 1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The existing body of literature has investigated various factors influencing the sustainable consumption intentions of various generations, particularly Generation Z (Hoşgör et al., 2023; Schönherr & Pikkemaat, 2023). The research conducted by Kamenidou et al. (2021) indicates that Generation Z demonstrates moderate levels of sustainable consumption behaviors, with multiple descriptive variables exhibiting positive and significant correlations with such behaviors. Furthermore, a study by Zhang et al. reveals that the environmental attitudes of Generation Z are significantly shaped by social pressure, social media influences, and the repercussions of the COVID-19 pandemic; their travel intentions are oriented toward climate-conscious practices, sustainable on-site mobility, waste reduction, and a focus on both economic and social sustainability (Munsch, 2021; Schönherr & Pikkemaat, 2023).

Personal norms, defined as an individual's moral obligation to engage in specific behaviors, are significant predictors of sustainable consumption intention (Bamberg & Moser, 2007). Social norms, which pertain to the perceived societal pressure to engage in or abstain from particular behaviors, have also influenced sustainable consumption intentions (Hassan et al., 2022). Environmental awareness (EA), defined as how individuals recognize environmental issues and their implications, has been identified as another critical determinant of sustainable consumption intention (Saifullah et al., 2017).

Moreover, environmental knowledge, encompassing the comprehension of environmental issues and potential solutions, is a moderating factor in the relationship between these influences and sustainable consumption intentions. In the present global context, the significance of sustainability has intensified due to the escalation of environmental crises and the degradation of natural habitats, which notably compromise the quality of life and human habitats (Woodruff & Mankoff, 2009). Su et al. (2019) emphasize that the emergence of sustainable ideologies has particularly affected Generation Z, the youngest cohort, fostering the adoption of sustainable consumption behaviors. Typically defined as those born in 1995 or later, this generation exhibits distinctive attributes that differentiate them from prior cohorts. The literature frequently highlights characteristics such as realism, responsibility, determination, curiosity, and open-mindedness as defining traits (Thach et al., 2020). Furthermore, research indicates that

Generation Z possesses a heightened awareness of environmental and economic challenges, positioning them as potentially pivotal contributors in addressing these issues (Khalil et al., 2021).

Social Norms (SN), which encompass the implicit expectations governing behavior within specific societal or group contexts, play a crucial role in shaping consumer attitudes and behaviors, including consumption patterns (Borg et al., 2020). These norms significantly affect the likelihood of individuals adopting sustainable behaviors, such as recycling, reducing energy consumption, and purchasing eco-friendly products, especially in contexts where sustainability is considered a core value (Doran & Larsen, 2016). Conversely, in environments where sustainable consumption lacks social endorsement, individuals tend to have a reduced propensity to engage in such practices (Borusiak et al., 2020).

The influence of social norms on sustainable consumption behaviors is well-documented in academic scholarship. Studies consistently demonstrate a positive relationship between social norms and sustainable consumption (Carrigan et al., 2011; Hassan et al., 2022). Doran and Larsen (2016) observed that consumers are more inclined to adopt pro-environmental behaviors when presented with messages highlighting similar actions undertaken by their peers. Similarly, Borg et al. (2020) argue that an awareness of individual social values can significantly enhance the likelihood of purchasing eco-friendly products. Moreover, observing others' commitment to collective objectives, such as environmental preservation, can bolster one's belief in communal effort, reinforce determination to achieve desired outcomes, and increase willingness to engage in environmental protection.

Personal Norms (PN), representing an individual's internalized values and convictions regarding ethical behavior within specific contexts, are pivotal in guiding decision-making processes, particularly concerning sustainable consumption (Bamberg & Moser, 2007). Empirical findings support this notion. For instance, Kim et al. (2020) investigated the factors influencing sustainable dietary choices and concluded that perceived behavioral norms markedly affect individuals' environmentally-friendly habits. Joanes (2019) identified a significant positive correlation between personal norms and sustainable clothing consumption practices. Likewise, Hassan et al. (2022) demonstrated that personal norms positively and significantly influence sustainable consumption.

Individuals prioritizing environmental concerns often cultivate a sense of personal responsibility to mitigate their ecological impact. This sense of duty can manifest in various sustainable behaviors, such as reducing reliance on single-use plastics and preferring public transportation to private vehicles (Gunderson, 2018). The existing body of literature has thoroughly examined various factors influencing the sustainable consumption intentions of different generations, with a particular focus on Generation Z (Hoşgör et al., 2023). Additionally, a study by Schönherr and Pikkemaat (2023) highlights that the environmental attitudes of Generation Z are significantly shaped by social pressure, social media influences, and the impacts of the COVID-19 pandemic, resulting in travel intentions that prioritize climate-conscious practices and sustainable behaviors.

The role of personal norms, defined as an individual's moral obligation to engage in specific behaviors, has emerged as a significant predictor of sustainable consumption intentions. Furthermore, Social Norms, which reflect perceived societal pressures to engage in or refrain from certain behaviors, have also been found to affect these intentions (Lin & Niu, 2018; Nagarajan et al., 2022). Environmental awareness, which pertains to recognizing environmental issues, is a critical determinant of sustainable consumption intentions. Moreover, environmental knowledge, encompassing an understanding of environmental issues and proposed solutions, moderates the relationship between these factors and sustainable consumption intentions (Lee et al., 2019; Ho et al., 2020; Shah et al., 2021).

In light of ongoing global environmental crises, the importance of sustainability has become increasingly pronounced (Khan, Haque, & Khan, 2020). Su et al. (2019) underscore that the rise of sustainable ideologies has mainly influenced Generation Z individuals born in 1995 or later. This cohort exhibits distinct characteristics, including realism, responsibility, determination, cu-


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riosity, and open-mindedness (Thach et al., 2020), and they demonstrate a heightened awareness of environmental and economic challenges, positioning them as potential contributors to these issues (Khalil et al., 2021).

Social norms play a crucial role in shaping consumer behaviors, significantly affecting the adoption of sustainable practices, especially in contexts where sustainability is a prioritized value (Borg et al., 2020; Doran & Larsen, 2016). The academic literature consistently supports the positive relationship between social norms and sustainable consumption behaviors (Carrigan et al., 2011; Hassan et al., 2022). Studies indicate that exposure to pro-environmental behaviors among peers can encourage individuals to adopt similar practices.

Personal norms are essential in guiding decision-making processes related to sustainable consumption (Bamberg & Moser, 2007). The research by Kim et al. (2020) indicates that perceived behavioral norms significantly affect environmentally friendly habits, while the studies by Joanes (2019) and Hassan et al. (2022) demonstrate strong correlations between personal norms and sustainable consumption practices.

Individuals who prioritize environmental concerns frequently develop a sense of personal responsibility to minimize their ecological impact, which can manifest in various sustainable behaviors such as reducing reliance on single-use plastics and favoring public transportation over private vehicles (Gunderson, 2018). Furthermore, personal norms can influence one's willingness to embrace sacrifices for environmental sustainability, such as paying a premium for eco-friendly products or reducing meat consumption to lower one's carbon footprint (Han et al., 2019)

The study aims to examine the variations in the influence of personal norms, social norms, and environmental awareness on sustainable consumption intentions within Generation Z, particularly distinguishing between individuals with high versus low levels of environmental knowledge. Based on the literature review, the following hypotheses were formulated to assess the validity of the information identified, which can then be validated through rigorous statistical analysis:

*H1: Personal norms have a positive influence on sustainable consumption.*

*H2: Social norms have a positive influence on sustainable consumption.*

*H3: Environmental awareness has a positive influence on sustainable consumption.*

*H4a: Environmental knowledge plays a moderating role in the effect of personal norms on sustainable consumption.*

*H4b: Environmental knowledge plays a moderating role in the effect of social norms on sustainable consumption.*

*H4c: Environmental knowledge plays a moderating role in the effect of environmental awareness on sustainable consumption.*

## 2. METHODOLOGY

This study investigates the moderating role of environmental knowledge in the relationship between personal norms, social norms, and environmental awareness regarding sustainable consumption intentions among Generation Z members. The research focuses on students aged 18 to 27 at Osmaniye Korkut Ata University in Turkey. The sample size was calculated using a 95% confidence interval, a 5% margin of error, and a population ratio of 0.50% to ensure statistical reliability. This calculation indicated a required sample size 384 (Hair et al., 2009). However, the study surveyed 400 students through face-to-face interviews. Five questionnaires were excluded after the evaluation due to errors and incompleteness, resulting in 395 questionnaires available for analysis. The study's conceptual model, depicted in Figure 1, is informed by and aligns with findings from previous research conducted by Hassan et al. (2022) and Casalegno et al. (2021).

The questionnaire created to test the hypotheses and collect data for this study began with a concise informational section explaining sustainable consumption. This was followed by a series of statements to measure the factors outlined in the study's conceptual model. Specifically, twelve items were included to assess personal norms (4 items), social norms (4 items), and environmental awareness (4 items),

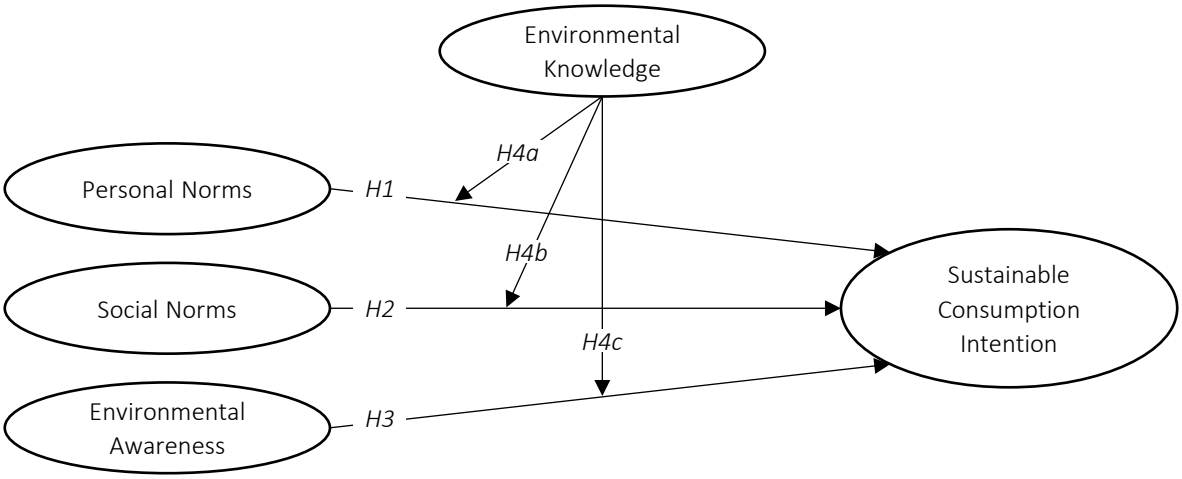


**Figure 1.** Conceptual model

all adapted from the scale utilized by Hassan et al. (2022). Additionally, eight statements addressing environmental knowledge (4 items) and sustainable consumption intention (4 items) were derived from the scale used in the research by Rusyani et al. (2021). In total, twenty items representing the critical factors of the study were evaluated using a 5-point Likert scale, as detailed in Table 1.

**Table 1.** Scale items and reliabilities

| | Scale | Factor loadings | CR | AVE |
|---|---|---|---|---|
| | **Personal Norms (PN)** | | **0.831** | **0.552** |
| PN1 | I feel guilty if I buy products that are not environmentally friendly. | 0.821 | | |
| PN2 | I would be a better person if I bought environmentally friendly products. | 0.714 | | |
| PN3 | When I buy new products, I feel morally obliged to prioritize choosing environmentally friendly products over alternatives. | 0.785 | | |
| PN4 | I regularly make an extra effort to look for environmentally friendly products. | 0.711 | | |
| | **Social Norms (SN)** | | **0.904** | **0.701** |
| SN1 | Family members whose opinions I value will approve of my participation in environmental behavior. | 0.777 | | |
| SN2 | Family members whose opinions I value will confirm my commitment to buying environmentally friendly products. | 0.784 | | |
| SN3 | My close friends, who are important to me, will support my commitment to buying environmentally friendly products. | 0.783 | | |
| SN4 | The social circle in which I live will confirm my commitment to buying environmentally friendly products. | 0.783 | | |
| | **Environmental Awareness (EA)** | | **0.861** | **0.675** |
| EA1 | I am extremely concerned about the state of nature. | 0.781 | | |
| EA2 | I feel sad when I think of the damage pollution does to plant and animal life. | 0.839 | | |
| EA3 | I think that a person should warn their friends not to use products that pollute or harm the environment. | 0.626 | | |
| EA4 | I try to buy products in packaging that does not harm the environment. | – | | |
| | **Environmental Knowledge (EK)** | | **0.914** | **0.726** |
| EK1 | Environmentally friendly products protect the ecosystem. | 0.787 | | |
| EK2 | Environmentally friendly products are biodegradable. | 0.841 | | |
| EK3 | Environmentally friendly products can be recycled. | 0.818 | | |
| EK4 | Environmentally friendly products are good for the environment we live in. | 0.835 | | |
| | **Sustainable Consumption Intention (SCI)** | | **0.913** | **0.724** |
| SCI1 | I often buy environmentally friendly products. | 0.819 | | |
| SCI2 | I buy environmentally friendly products, even if the cost is high. | 0.896 | | |
| SCI3 | I have a habit of consuming environmentally friendly products to meet my daily needs. | 0.863 | | |
| SCI4 | In the last six months I have had the behavior of buying an environmentally friendly product. | 0.764 | | |

*Note*: AVE = Average Variance Extracted, CR = Composite Reliability.


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The questionnaire concluded with open-ended queries about the participants' demographic details, including gender, age, educational level (associate or bachelor's degree), field of study at Osmaniye Korkut Ata University, place of birth, and current living arrangement (home or dormitory).

During the study, the internal reliability of the questionnaire statements was assessed using Cronbach's Alpha test. The normal distribution of responses to the questionnaire statements was evaluated through the Kolmogorov-Smirnov and Shapiro-Wilk tests. Exploratory Factor Analysis was employed to verify the alignment of each statement with its predicted factor. Additionally, Confirmatory Factor Analysis was conducted to ascertain the reliability and validity of the conceptual model used in the study. The study's hypotheses were tested using structural equation modeling, and the moderating effect of environmental knowledge was examined using Hayes' (2013) PROCESS Model 1. The data analysis was conducted using SPSS 25.0 and AMOS 25.0 version.

## 3. RESULTS

The demographic profile of the study participants revealed that 60.8% were male, and 66.3% were aged between 19 and 22 years. In terms of educational background, 73.2% were undergraduates. Additionally, 69.2% of the participants were born outside the province of Osmaniye, Turkey, and 54.2% resided in dormitories.

To evaluate reliability, which examines the internal consistency of the questionnaire statements and the degree to which the scale accurately reflects the subject being studied, Cronbach's Alpha is a crucial indicator. A 70% or higher value is typically acceptable (Hair et al., 2009). In this study, Cronbach's Alpha analysis yielded coefficients for Personal Norms (α = 0.829), Social Norms (α = 0.904), Environmental Awareness (α = 0.847), Environmental Knowledge (α = 0.913), and Sustainable Consumption Intention (α = 0.909), all exceeding the %70 threshold. These findings suggest minimal systematic and random error in the responses to the scale statements, thereby reinforcing the reliability of the model used to measure these factors.

The study's data distribution was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests to determine the normality of the questionnaire statements. The results indicated a statistical significance level below the acceptable threshold ($p < 0.001$), suggesting a deviation from normal distribution. However, as Tabachnick and Fidell (2013) advised, examining the skewness and kurtosis values can further validate claims of normal distribution. According to their criteria, each statement's skewness and kurtosis values should fall within a range of ±1.5. This study's skewness values ranged from 0.160 to -1.301, while the kurtosis values varied from 0.768 to -1.112. Given that these values fall within the specified range, they imply a normal distribution of the statements.

This study conducted Exploratory Factor Analysis (EFA) to investigate the relationships among various statements and identify correlated factors. The principal components method with varimax rotation was employed for factor transformation to achieve this. Denis (2020) noted that the Kaiser-Meyer-Olkin (KMO) measure should exceed 60% for factor analysis to be considered valid. Additionally, Bartlett's test is used to determine whether the correlation matrix of the statements significantly deviates from a unit matrix (Esbensen et al., 2018). In this study, the KMO val-

**Table 2.** Reliability and validity results of the research model

| | PN | SN | EA | EK | SCI |
|---|---|---|---|---|---|
| PN | (0.743) | | | | |
| SN | 0.597*** | (0.837) | | | |
| EA | 0.514*** | 0.653*** | (0.821) | | |
| EK | 0.443*** | 0.591*** | 0.705*** | (0.852) | |
| SCI | 0.481*** | 0.518*** | 0.458*** | 0.378*** | (0.851) |

*Note*: *** $p < 0.001$, ** $p < 0.05$, * $p < 0.10$. The values (indicated in parentheses) represent the square root of the mean-variance explained by each factor.

ue was 91.9%, and Bartlett's test indicated statistical significance ($p < 0.001$), confirming the statements' appropriateness for factor analysis.

The analysis focused exclusively on factors with an eigenvalue more significant than one for inclusion in the conceptual model. The EFA identified five factors that met this criterion: social norm, personal norm, environmental awareness, environmental knowledge, and sustainable consumption intention. The variances associated with these factors are as follows: environmental knowledge (17.596%), sustainable consumption intention (17.189%), social norm (16.279%), personal norm (14.769%), and environmental awareness (11.377%). Collectively, these factors accounted for 77.209% of the total variance. However, the correlation of the statement "EA4" with other items measuring environmental awareness was particularly low, leading to its exclusion from the scale prior to hypothesis testing in the conceptual model.

Reliability in a research model is characterized by its ability to yield consistent outcomes across repeated measurements. In contrast, validity pertains to the extent to which a scale accurately captures the intended construct. For a construct to be considered valid, the factors within the study model must demonstrate discriminant validity, as Esbensen et al. (2018) noted. According to Hair et al. (2009), a measurement model is considered reliable when the reliability coefficients of the factors exceed 0.70 and when each factor accounts for more than 50% of the variance observed in the data. The Confirmatory Factor Analysis (CFA) conducted for this study provided estimates for Composite Reliability (CR) and Average Variance Extracted (AVE) for each factor, as documented in Table 1.

A thorough analysis of the reliability and validity results in Table 1 reveals that the CR values for each factor in the measurement model surpassed the 0.70 threshold. In contrast, the AVE for each factor exceeded the 0.50 criterion. Furthermore, the assessment confirmed the absence of multicollinearity, evidenced by the square root of the variance explained by each factor being more significant than the correlation coefficients between the factors, as illustrated in Table 2. This lack of multicollinearity substantiates the construct validity of the factors within the model. Accordingly, it can be concluded that the measurement model employed for hypothesis testing in this study demonstrates both reliability and validity.

CFA, a widely accepted method in scientific inquiry utilized for scale development, validity assessment, and structural evaluation (Hair et al., 2009), was also applied in this study. The computed chi-square ($\chi^2$) value was 419.196 with 142 degrees of freedom, suggesting an initial potential misfit of the model to the observed data, particularly given the significance level ($p = 0.000$), which is below the acceptable threshold ($p < 0.001$). However, the model's fit was comprehensively evaluated by assessing the adjusted chi-square value relative to the degrees of freedom ($\chi^2/df = 3.828$, with an acceptable range of 1-5) and various goodness-of-fit indices. Specifically, the Goodness of Fit Index (GFI) was recorded at 0.899, the Adjusted Goodness of Fit Index (AGFI) at 0.865, the Root Mean Square Error of Approximation (RMSEA) at 0.07, the Tucker-Lewis Index (TLI) at 0.936, the Incremental Fit Index (IFI) at 0.947, and the Comparative Fit Index (CFI) at 0.947. All indices fell within the acceptable levels of goodness of fit, indicating that the observed data adequately support the proposed research model.

Table 3 thoroughly summarizes the research findings, including a comprehensive statistical data set such as p-values, Standardized Regression Coefficients (SRC), and Standard Errors (SE). The table also includes the $R^2$ value, confidence intervals, and t-statistic values, instrumental in testing the coefficients against zero. Additionally, it presents the results of the hypotheses tests, delivering a holistic overview of the study's outcomes.

A review of the structural equation model analysis results in Table 3 reveals that personal norms ($\beta = 0.265$, $SE = 0.065$, $p < 0.001$), social norms ($\beta = 0.329$, $SE = 0.055$, $p < 0.001$), and environmental awareness ($\beta = 0.178$, $SE = 0.058$, $p < 0.001$) have a statistically significant and positive effect on the sustainable consumption intentions of Generation Z. Thus, hypotheses *H1*, *H2*, and *H3* of the study are accepted. Furthermore, the variance explained by personal norms, social norms, and environmental awareness about sustainable consumption intention is $R^2 = 0.210$, indicating that these three independent factors account for 21% of Generation Z's sustainable consumption intention.


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**Table 3.** Hypotheses results

| Structural equation model results | | | | | | |
|---|---|---|---|---|---|---|
| **Hyp.** | **Hypothesis diagram** | **SRC** | **SE** | **t-value** | **$R^2$** | **Conclusion** |
| *H1* | PN → SCI | 0.265*** | 0.065 | 4.791 | 0.210 | Accepted |
| *H2* | SN → SCI | 0.329*** | 0.055 | 6.216 | | Accepted |
| *H3* | EA → SCI | 0.178*** | 0.058 | 3.405 | | Accepted |
| **PROCESS model 1 results** | | | | | | |
| **Hyp.** | **Hypothesis diagram** | **SRC** | **SE** | **t-value** | **CI** | **Conclusion** |
| *H4a* | PN → EK → SCI | 0.118*** | 0.053 | 2.227 | [0.014 – 0.223] | Accepted |
| *H4b* | SN → EK → SCI | –0.115*** | 0.054 | –2.115 | [–0.221 – –0.008 ] | Accepted |
| *H4c* | EA → EK → SCI | –0.035 | 0.051 | –0.658 | [–0.136 – 0.066] | Rejected |

*Note*: *** p < 0.001, ** p < 0.05, * p < 0.10. Hyp.: hypothesis, CI: Confidence Interval.

PROCESS Model 1, which incorporated 5,000 resamples and options for a 95% confidence interval (Hayes, 2013), was employed to examine the hypothesis concerning the moderating role of environmental knowledge. The findings from PROCESS Model 1 demonstrate that environmental knowledge positively moderates the relationship between personal norms and sustainable consumption intention (β = 0.118, SE = 0.053, CI [0.0014 – 0.223]). This indicates that the positive effect of personal norms on sustainable consumption intention is more pronounced among consumers with high environmental knowledge compared to those with low knowledge levels.

In addition, the results indicate that environmental knowledge negatively moderates the positive impact of social norms on sustainable consumption intention (β = -0.115, SE = 0.054, CI [-0.221 – -0.008]). This suggests that the influence of social norms on sustainable consumption inten-

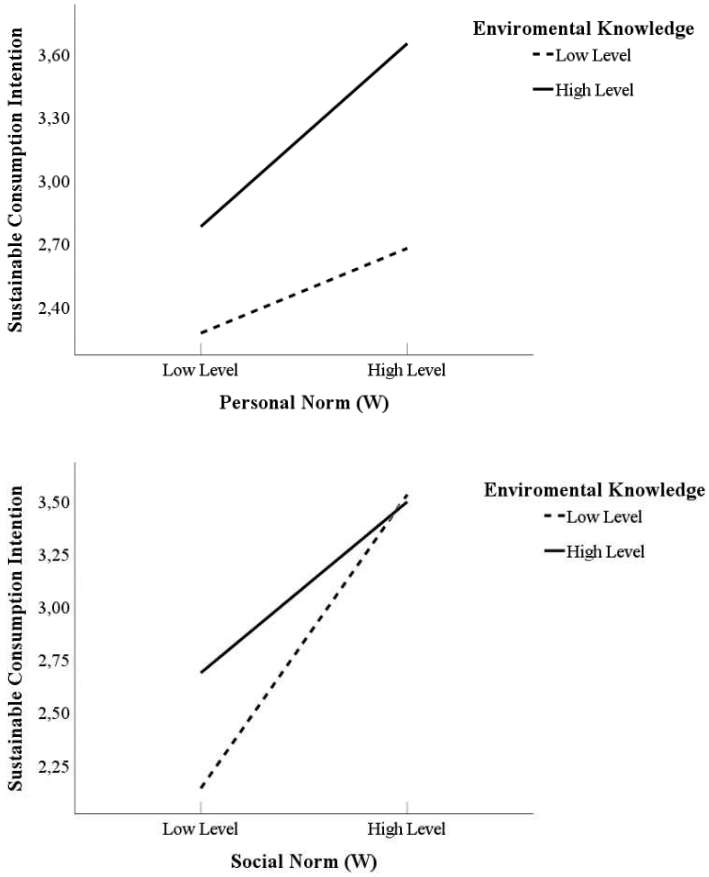


**Figure 2.** The moderating role of environmental knowledge

tion is reduced for consumers with high environmental knowledge in contrast to those with lower knowledge.

Moreover, the analysis revealed that environmental knowledge does not moderate the positive relationship between environmental awareness and sustainable consumption intention (β = -0.035, SE = 0.051, CI [-0.035 – -0.658]). Based on these outcomes, hypotheses *H4a* and *H4b* are supported. Figure 2 presents the results concerning the moderating role of environmental knowledge in detail. In assessing the impact of personal norms on sustainable consumption intentions, it was revealed that Generation Z's environmental knowledge has a statistically significant effect at a high level (θ(X→Y) (W = 5.00) = 0.496, p = 0.000). Conversely, this effect was not statistically significant at a low level (θ(X→Y) (W = 2.75) = 0.230, p = 0.0146). Additionally, Figure 2 shows the findings related to the effect of social norms on sustainable consumption intentions. In this case, environmental knowledge among Generation Z was found to be statistically significant at both high levels (θ(X→Y) (W = 5.00) = -0.115, p = 0.000) and low levels (θ(X→Y) (W = 2.75) = 0.618, p = 0.000).

## 4. DISCUSSION

Sustainable consumption behavior involves an individual's understanding of the long-term effects of their consumption choices on both the natural environment and society. This behavior is typically considered responsible, environmentally friendly, and aligned with societal interests (Kadic-Maglajlic et al., 2019). In recent years, sustainable consumption has gained significant traction in business practices, public policy, and academic discussions (Dong et al., 2020).

To effectively encourage sustainable consumption among Generation Z, it is crucial to reshape current social norms, foster and reinforce personal sustainable values, and enhance environmental awareness at both the community and individual levels. The research by Wiernik, Ones, and Dilchert (2013) indicates a negative correlation between age and environmental attitudes, suggesting that younger individuals tend to possess more pronounced eco-centric perspectives than their older peers. In contrast, recent studies highlight that younger generations, particularly Generation Z, are firmly committed to environmental and sustainability issues (Doran & Larsen, 2016; Joanes, 2019; Borg et al., 2020; Prayag et al., 2022).

This study reveals that the behaviors of specific groups and prevailing social norms rather than their level of environmental knowledge predominantly influence Generation Z individuals' intentions regarding sustainable consumption. The significance of social and cultural factors on their sustainable consumption intentions appears to outweigh that of environmental knowledge. This observation is consistent with findings from prior research (Borg et al., 2020; Doran & Larsen, 2016; Hassan et al., 2022), highlighting a recurring trend across studies. To improve sustainable practices among Generation Z, initiatives should reshape social norms and foster personal values aligned with sustainability. Furthermore, enhancing environmental awareness remains a crucial element of this endeavor.

Research examining generational differences in sustainable consumption frequently emphasizes consumers' perceptions, which are influenced by factors such as environmental concern, awareness, knowledge, and perceived consumption efficiency (Bulut et al., 2017; Ivanova et al., 2019; Casalegno et al., 2022; Prayag et al., 2022). Generation Z demonstrates a heightened sensitivity to sustainability issues compared to earlier generations. This is particularly evident in their strong sense of social responsibility, acute environmental awareness, and active involvement in climate change mitigation efforts (Harvey & Nancy, 2014; Nikolic et al., 2022).

Personal and social norms and environmental awareness play a significant and positive role in influencing intentions to engage in sustainable consumption. Notably, social norms impact these intentions more than other factors. This suggests that Generation Z is more inclined to adopt sustainable behaviors when such consumption is perceived as a norm within their social groups or communities.

The findings of this study emphasize the need for practitioners to consider the personal values, beliefs, and social contexts of Generation Z when designing initiatives or campaigns aimed at promoting sustainable consumption. Merely increasing environmental knowledge may not be sufficient


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to bring about behavioral changes. A holistic approach that addresses the underlying values, beliefs, and social influences is crucial for effectively encouraging sustainable consumption behaviors. In light of these findings, marketers should weave environmentally friendly messages into their promotional strategies to enhance both the appeal and profitability of their products or services.

## CONCLUSION

This study aims to evaluate the impact of personal norms, social norms, and environmental awareness on Generation Z's sustainable consumption intention. It also aims to evaluate the moderating role of environmental knowledge in the impact of personal norms, social norms, and environmental awareness factors on sustainable consumption intention. This study's findings demonstrate that personal norms, social norms, and environmental awareness play critical roles in shaping the sustainable consumption intentions of Generation Z. Notably, the results indicate that social norms have the most pronounced effect, suggesting that individuals are more inclined to adopt sustainable behaviors when these align with the prevailing norms of their social circles. Furthermore, the study confirms that environmental knowledge strengthens the positive relationship between personal norms and sustainable consumption intentions. In contrast, higher levels of environmental knowledge appear to diminish the influence of social norms on sustainable consumption intentions, indicating that social pressures may be less effective for those with greater environmental awareness. These findings underscore the importance of a multifaceted approach to promoting sustainable consumption that considers individual values and the broader social context.

While this study provides valuable insights into the behavioral principles and norms influencing Generation Z within a specific context, it also has limitations that should be acknowledged in future research. A significant limitation is the restricted sample size, drawn exclusively from a single university and city, primarily due to time and financial constraints. Consequently, the generalizability of the study's findings to a broader population is limited. However, these results can still offer valuable guidance for subsequent studies. Future research could benefit from a larger sample size that includes a variety of cultural contexts. An intriguing avenue for exploration would be to compare the perceptions of the digital generation with those of Generation Z regarding their attitudes toward environmentally friendly and sustainable consumption. Such comparative studies have the potential to yield insightful and meaningful results.

## NOTE

The study is derived from the paper presented at the 48th EBES congress.

## AUTHOR CONTRIBUTIONS

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