Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Green Consumption and Sustainable Behaviors among University Students

Gamze Aydın Eryılmaz
gamzeaydin@omu.edu.tr
Ondokuz Mayıs University
Şadiye Nur Güleç
Ondokuz Mayıs University
Halil İbrahim Ertuğ
Ondokuz Mayıs University

Research Article

Keywords: Green consumption, sustainable consumption, university students, Türkiye

Posted Date: August 31st, 2026

DOI: https://doi.org/10.21203/rs.3.rs-10590775/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License. Read Full License

Additional Declarations: No competing interests reported.

Abstract

The aim of this study is to examine the green consumer behaviors of university students and to reveal the overall structure and tendencies of these behaviors. The research data were collected through a survey administered to students at Ondokuz Mayıs University, Türkiye. Explanatory factor analysis, correlation analysis, and structural equation modeling were employed to analyze the data. The findings indicate that students strongly adopt environmentally friendly behaviors associated with daily life routines, such as energy and water conservation. In contrast, behaviors requiring greater cognitive evaluation and economic sacrifice, such as recycling practices and the preference for environmentally friendly products, were found to be less prevalent. The factor analysis revealed that green consumption behavior consists of four main dimensions: eco-literacy, lifestyle, sustainable consumption, and environmental citizenship. The structural model results showed that eco-literacy and environmental citizenship have positive and significant effects on sustainable consumption, while the effect of lifestyle was found to be partially significant. The findings support the attitude–behavior gap approach, suggesting that although individuals possess positive environmental attitudes, they often encounter economic, social, and structural barriers that hinder the translation of these attitudes into actual behavior. Accordingly, the study highlights the importance of integrating environmental courses into all academic programs and supporting them with practical projects, strengthening recycling infrastructure, and developing policies that encourage environmentally responsible behaviors in order to promote sustainable consumption practices.

1. Introduction

The environment refers to the place and conditions in which living organisms exist and interact (Gültekin, 2017). Therefore, a healthy environment is a fundamental prerequisite for sustaining a healthy life. One of the primary causes of contemporary environmental problems is the lack of environmental awareness within society. Since the emergence of humanity, there has been a continuous interaction between humans and their environment. While early human efforts were primarily directed toward survival, these struggles have gradually evolved into a pursuit of greater socioeconomic comfort and quality of life. However, the environment upon which human life depends is increasingly threatened by unsustainable and irresponsible human activities. Although different approaches have been adopted to achieve social and economic development goals, these efforts inevitably exert either positive or negative impacts on the environment (Farhadi Andarabi and Hassan, 2022). Consequently, individuals are often affected by the environmental consequences of their own actions.

The existence of a healthy environment depends largely on individuals' sensitivity toward environmental issues and their willingness to act accordingly (Gültekin, 2017). Developing environmental awareness and responsibility among all members of society is therefore essential. Such awareness encourages individuals to incorporate environmentally responsible practices into their daily lives (Bilge, 2015). This growing environmental consciousness among consumers is commonly reflected through the concept of green consumption (Kaya & Demirtaş, 2023). Green consumers are individuals who integrate environmental responsibility into their consumption decisions and recognize that their purchasing behaviors can contribute to environmental protection or degradation (Acer and Taşkın, 2020).

Green consumers attempt to protect the environment through various practices, including recycling, checking whether product packaging is made from recycled materials, purchasing environmentally friendly products, and conserving energy. Green consumption, which represents the incorporation of environmental concerns into consumption behavior, is closely associated with concepts such as environmentalism, eco-friendly consumption, and sustainable consumption. It encompasses a broad range of behavioral practices that require environmental sensitivity to become an integral part of one's lifestyle (Üstündağlı and Güzeloğlu, 2015). Acquiring such behaviors often requires greater environmental knowledge and education, highlighting the important role that universities can play in promoting environmental responsibility. As institutions responsible for educating future professionals, universities not only provide

students with the knowledge and skills necessary for their careers (Kiper et al., 2017) but also contribute to the development of socially responsible individuals who are aware of environmental protection and sustainability issues. Given their potential influence on future social and economic development, university students are expected to exhibit higher levels of environmental awareness and responsibility than the general population.

The aim of this research is to examine the green consumer behaviors of university students and to reveal the underlying structure and tendencies of these behaviors. By adopting a holistic perspective, the research seeks to enhance understanding of young consumers' environmentally responsible attitudes and consumption practices. In doing so, it contributes to the growing body of literature on green consumption and sustainable consumer behavior. From a practical perspective, the findings are expected to provide valuable insights for university administrators, policymakers, and environmental non-governmental organizations in designing awareness-raising educational programs and developing strategies that encourage sustainable consumption habits among young people. Ultimately, the research aims to contribute to strengthening environmental awareness and promoting the widespread adoption of sustainable consumption behaviors.

2. Conceptual Framework

In order to develop the conceptual framework of this research, a total of 55 articles retrieved from various electronic databases, including Web of Science, ScienceDirect, SpringerLink, SAGE, and DergiPark, were analyzed using MAXQDA software. A literature review was conducted through combinations of keywords related to green consumption and environmentally responsible behavior. The analysis revealed that the most frequently occurring terms were "green," "consumption," "environmental," and "purchase" (Fig. 1). These findings indicate that existing research primarily focuses on environmental awareness, consumption intentions, and sustainable behavioral practices.

The prominence of these concepts suggests that green consumption is generally examined as a multidimensional phenomenon encompassing environmental concerns, purchasing decisions, and sustainable lifestyles. Previous studies have emphasized that consumers' environmental awareness and attitudes play a crucial role in shaping environmentally responsible purchasing behaviors. At the same time, researchers have increasingly focused on the factors that facilitate or hinder the translation of pro-environmental attitudes into actual consumption practices. Consequently, the literature highlights the importance of understanding green consumption not only as a purchasing preference but also as a broader behavioral pattern associated with sustainability and environmental citizenship.

2.1. Green Consumption

Growing social concerns regarding environmental issues and increasing regulatory pressures have encouraged a growing number of companies to view environmental considerations as an important driver of strategic change. As a result, many organizations have begun to transform their marketing strategies by adopting green products and green branding practices due to their perceived positive effects on both the environment and consumers.

Green consumption, which refers to environmentally friendly, sustainable, or clean consumption (Başol et al., 2016), is associated with the preference for products and services derived from sustainable resources and produced through processes that consider ecological balance. The concept encompasses a wide range of environmentally responsible behaviors, including avoiding unnecessary consumption, choosing reusable products, supporting environmentally friendly brands, and engaging in sustainable purchasing practices. Green consumption emphasizes not only the purchase of environmentally friendly products but also resource conservation and the integration of ecological considerations into economic development processes (Bian, 2020).

The term “green consumption,” which promotes environmentally responsible behaviors and encourages consumers to adopt ecological practices, first emerged during the 1970s in response to growing awareness of severe environmental problems caused by pollution and excessive energy consumption (Bian, 2020). The concept gained further prominence following the United Nations Conference on Environment and Development (UNCED) in 1992, where sustainable development was established as a central global objective (UNCED, 1992). This development highlighted the necessity of balancing economic, social, and environmental concerns and reinforced the responsibility of organizations to adopt environmentally sustainable practices. Such practices include the production of renewable energy, the development of organic and environmentally friendly products, waste reduction initiatives, energy and water conservation, and the increased use of recycled materials.

Over time, the concept of green consumption has evolved toward the broader notions of sustainable consumption and sustainable development (Connolly and Prothero, 2008). In this context, one of the most widely accepted principles of green consumption is the “5R” approach. This framework promotes reducing resource use and pollution (Reduce), recognizing and enhancing the value of products and materials (Revalue), encouraging the repeated use of products (Reuse), recycling waste materials (Recycle), and protecting natural ecosystems (Rescue or Nature Protection) (Bian, 2020). Green consumption therefore encompasses not only consumer behaviors but also the attitudes, values, and cognitive processes underlying environmentally responsible decision-making.

More recently, the 5R framework has been associated with the principles of the circular economy, which seeks to replace the traditional linear “take–make–dispose” model with a system that minimizes waste and maximizes resource efficiency. While conventional consumption patterns contribute to waste generation, pollution, greenhouse gas emissions, and climate change, the circular economy aims to reduce waste at its source and extend the productive use of resources within the economic system. From this perspective, waste is viewed as a valuable resource that can be reintegrated into production processes, thereby reducing environmental impacts while creating new economic opportunities in areas such as repair, remanufacturing, and advanced recycling technologies (Meshram, 2024).

Accordingly, green consumers tend to prefer products that possess environmentally friendly characteristics and generate lower ecological impacts throughout their life cycle. Their environmentally responsible behaviors are reflected not only in purchasing decisions but also in post-consumption practices such as recycling and reusing products. Purchasing organic food, using energy-efficient appliances, conserving natural resources, and participating in recycling activities are among the most common manifestations of green consumption (Bian, 2020).

2.2. Green Consumption and Sustainability

Sustainability has become a central concept in addressing contemporary environmental, economic, and social challenges. The most widely accepted definition originates from the Brundtland Report published by the World Commission on Environment and Development (WCED), which defines sustainable development as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987). This perspective acknowledges that natural resources are finite and emphasizes the importance of preserving environmental quality and natural assets within consumption processes. Consequently, sustainability is recognized as a multidimensional concept encompassing environmental protection, economic prosperity, and social well-being. Indeed, sustainability is commonly conceptualized through the “triple bottom line,” which consists of economic viability, environmental responsibility, and social equity (Huang and Rust, 2011).

Green consumption and sustainability are closely interconnected concepts that share a common concern for environmental protection. Consumers’ decisions to purchase and use environmentally friendly products can contribute directly to mitigating environmental degradation while promoting the efficient use of resources for future generations (Beatson et al., 2020). Societies that adopt sustainable lifestyles tend to emphasize behaviors associated with green

consumption, such as reducing overall consumption, choosing less polluting alternatives, conserving energy, limiting automobile dependency, and preferring recyclable products (Vita et al., 2019). Within the green consumption paradigm, sustainable living is pursued through environmentally responsible choices, including the use of clean technologies, resource conservation, recycling, waste reduction, and ecosystem protection, often without requiring radical changes to everyday lifestyles (Vita et al., 2019).

The idea that societies should simultaneously promote human well-being and preserve a healthy environment for future generations is reflected in the concept of sustainable development. Sustainable development advocates economic progress while ensuring the rational use of environmental resources and protecting the interests of both present and future generations (Bozlağan, 2010). From this perspective, sustainability should not be viewed solely as a macro-level policy objective but also as a principle that guides individuals' daily practices and consumption decisions. In particular, transforming consumption habits is considered a critical component of achieving sustainability. Consumers' preferences for environmentally friendly products, resource-efficient lifestyles, and waste-reduction behaviors represent important contributions to sustainable development goals.

Green consumption behavior has therefore emerged as one of the primary mechanisms through which sustainable development objectives can be realized at the individual level (Peattie, 2010; Beatson et al., 2020). Sustainable consumption requires consumers to consider not only the fulfillment of their personal needs but also the environmental consequences of their decisions. However, previous studies have consistently demonstrated that positive environmental attitudes do not always translate into actual environmentally responsible behaviors (Carrington et al., 2010). This phenomenon, often referred to as the attitude–behavior gap, highlights the challenges associated with transforming sustainability-related values into concrete consumption practices and underscores the importance of examining the behavioral dimension of green consumption.

Beyond individual responsibility, the promotion of sustainability and green consumption depends heavily on the actions of businesses and public institutions. Companies can facilitate sustainable consumption by adopting environmentally friendly production processes, providing transparent environmental information, and developing strategies that encourage responsible consumer behavior (Ottman, 2017; Delmas and Burbano, 2011). Similarly, government policies, regulatory frameworks, and incentive mechanisms can play a significant role in supporting environmentally responsible consumption patterns and fostering green consumer behavior (Bian, 2020).

In summary, sustainability and green consumption can be regarded as complementary and mutually reinforcing concepts. Achieving a sustainable future requires not only the adoption of environmentally responsible consumption behaviors by individuals but also the development of institutional and societal structures that support such behaviors (Güler, 2023; Peattie, 2010). Consequently, examining young consumers' perceptions of sustainability and their green consumption tendencies is particularly important, as it contributes to both academic knowledge and the development of effective policies and practices aimed at promoting sustainable lifestyles (Barbu et al., 2022).

2.3. Green Consumers and Their Characteristics

Green consumers are generally defined as individuals who adopt environmentally responsible behaviors and prefer environmentally friendly products over conventional alternatives. Their consumption decisions extend beyond the simple purchase of green products, encompassing a broader consideration of the environmental consequences associated with production, consumption, and disposal processes. While previous studies suggest that green consumers are influenced by firms' green marketing activities, they are also characterized by a heightened sensitivity to environmental issues and a stronger commitment to sustainable lifestyles. Consequently, green consumers tend to be more willing to purchase environmentally friendly products (Barbu et al., 2022) and engage in behaviors that support sustainable living (Güler, 2023).

Environmentally conscious consumers do not perceive consumption solely as a purchasing activity; rather, they consider factors such as production methods, resource scarcity, and the environmental impacts of products throughout their life cycle (Barbu et al., 2022). In this respect, green consumption reflects a broader sense of environmental responsibility that extends beyond individual preferences. By encouraging environmentally responsible practices, green consumers contribute to the achievement of sustainability goals and the promotion of sustainable development.

The literature identifies several characteristics that distinguish green consumers from other consumer groups. First, they typically possess a high level of environmental awareness and incorporate environmental considerations into their consumption decisions (Peattie, 2010). They also tend to hold strong pro-environmental attitudes and values, believing that their individual actions can contribute to solving environmental problems. This belief is often described as perceived consumer effectiveness, which refers to the extent to which individuals believe their personal choices can make a meaningful difference in addressing environmental challenges (Ellen et al., 1991). Research has consistently demonstrated that perceived consumer effectiveness is an important predictor of environmentally responsible behavior.

In addition, green consumers generally embrace ethical and responsible consumption principles. Their evaluations often extend beyond product attributes to include production processes, corporate practices, and brand values. Nevertheless, possessing positive environmental attitudes does not necessarily guarantee environmentally responsible behavior. The literature frequently highlights the existence of an attitude–behavior gap, whereby consumers express environmental concern but fail to translate these concerns into consistent purchasing or consumption behaviors (Connolly and Prothero, 2008). Although some green consumers are willing to pay premium prices for environmentally friendly products, this willingness may vary depending on factors such as income level, product availability, and trust in environmental claims.

As governments and businesses increasingly promote environmentally responsible practices, the scope of the concept of “green” has expanded from production processes to consumption behaviors (Bian, 2020). This transformation has encouraged firms to adopt environmentally friendly strategies while simultaneously fostering greater consumer awareness and selectivity. However, concerns regarding misleading environmental claims and greenwashing suggest that consumers may sometimes face difficulties in distinguishing genuinely sustainable products from those marketed as environmentally friendly without substantial environmental benefits.

The historical development of environmental consciousness further illustrates the emergence of green consumers. The environmental movements and growing ecological awareness that emerged in Western Europe during the 1960s and 1970s represented a significant turning point in consumer thinking. These movements promoted a more holistic understanding of consumption by emphasizing its environmental consequences alongside its economic dimensions. Over the past three decades, environmental movements have continued to evolve, encouraging consumers not only to avoid environmentally harmful products but also to adopt sustainable practices such as recycling, reusing products, reducing waste, and utilizing public transportation (Connolly and Prothero, 2008). As a result, green consumerism has become an increasingly important component of sustainable consumption and environmental responsibility.

2.4. Factors Influencing Green Consumption

Green consumption, which refers to the integration of environmental concerns into consumption decisions and participation in environmentally responsible activities, has emerged as one of the most widely promoted consumption models worldwide. Growing environmental concerns and increasing awareness of ecological degradation have encouraged consumers, businesses, and policymakers to support more sustainable consumption patterns. As resource consumption has reached unprecedented levels in recent decades, environmental protection has become a major global concern (Barbu et al., 2022). Human activities associated with industry, agriculture, transportation, and waste

management contribute significantly to greenhouse gas emissions, resulting in environmental and economic challenges such as climate change, rising food prices, and economic instability (Özkurt, 2025; Kızılkaya and Mike, 2023).

In response to these challenges, consumer interest in environmentally friendly products and services has expanded rapidly across the globe. The market for green products has experienced substantial growth, reflecting increasing demand for products that minimize environmental impacts and contribute to sustainable development (Barbu et al., 2022). Environmentally conscious consumers increasingly engage in behaviors such as purchasing organic and eco-labeled products, supporting renewable energy sources, conserving natural resources, and using recyclable products. These behaviors reflect a growing sense of shared responsibility for addressing environmental problems and promoting sustainability.

Previous research has identified a wide range of factors that influence green consumption behavior. These factors can generally be classified into three broad categories: individual factors, product and marketing-related factors, and sustainability-oriented factors. Individual factors include socio-demographic characteristics, environmental attitudes, values, beliefs, knowledge, and perceptions that shape consumers' environmental decision-making processes. Product and marketing-related factors encompass attributes such as product quality, price, packaging, eco-labels, brand reputation, and marketing communications, all of which may influence consumers' willingness to purchase environmentally friendly products. Finally, sustainability-oriented factors refer to consumers' broader concerns regarding environmental protection, resource conservation, social responsibility, and sustainable development. Together, these factors influence the extent to which consumers adopt green consumption behaviors and support environmentally responsible consumption practices.

Accordingly, the literature suggests that green consumption is a multidimensional phenomenon influenced by both internal and external determinants. Understanding these determinants is essential for developing effective strategies aimed at encouraging sustainable consumption and fostering environmentally responsible consumer behavior. The main factorsidentified in theliteraturearesummarized in Table 1.

Table 1
Factors Influencing Green Consumption Behavior

Main Factors	Sub-Dimensions	Variables	Yazarlar
Individual Factors	Psychological Factors	o Attitudes toward the environment and green products o Environmental and green product awareness o Eco-literacy o Environmental concern/responsibility	Ghazali et al., 2018; Cheung et al., 2019; Wang et al., 2019a; Hansmann et al., 2020; Caniëls et al., 2021; Kamalanon et al., 2022; Shabnam et al., 2021; Zafar et al., 2021; Al-Kumaim et al., 2021; Irfan et al., 2021; Sharma, 2021; Wasaya et al., 2021; Dutta and Hsin, 2021; Akyüz and Çetinkaya, 2025; Pirimov and Sofyalıoğlu, 2025.
	Socio-demographic Characteristics	o Age, gender, education level	Çetinkaya and Özceylan, 2017; Candamioet al., 2018; Nayır and Yıldırım, 2024
Product Attributes and Marketing Factors	Product Attributes: • Availability • Product quality • Packaging • Country of origin	o Availability o Material, packaging, product price, country of origin o Perceived risk and trust	Ricci et al., 2018; Wang et al., 2019b; Ahmad and Zhang, 2020; Dekhili and Nguyen, 2021; Ansu-Mensah, 2021; Dangelico, 2021; Han et al., 2022
	Marketing: • Eco-labels and certifications • Promotional activities (advertising, word-of-mouth) • Distribution and sales channels	o Eco-labels and green certification o Mass media, advertising, and word-of-mouth marketing	Riskos et al., 2021; Sousa et al., 2022; Tan et al., 2022; Kaytancı and Çuhadar, 2023
Sustainability	Sustainable Consumption Awareness	o Sustainable consumption o Recycling	Doğan et al., 2015; Brochado et al., 2017; Doan et al., 2025; Sharma and Sharma, 2025; Ebrahimi et al., 2026; Hu et al., 2026; Mehraban et al., 2026; Su et al., 2026

First, green purchasing behavior appears to be significantly influenced by individual factors such as personal attitudes, perceptions, moral patterns, and socio-demographic characteristics. In this regard, Han et al. (2022) found a positive relationship between consumer trust and green purchase intention, with environmental consciousness and status consciousness partially mediating this relationship. According to the authors, consumer trust increases awareness and knowledge of national environmental issues alongside economic growth. This, in turn, enhances individuals' environmental consciousness and encourages them to prioritize environmental protection in their purchasing decisions. Furthermore, consumer awareness stimulates status consciousness, strengthening the perceived social value of green products and thereby motivating green purchase intentions (Han et al., 2022). Similarly, Tan et al. (2022) argued that consumers are influenced by green marketing elements, which help increase environmental awareness and strengthen their willingness to purchase green products. According to Shabnam et al. (2021), consumers' enduring beliefs constitute the foundation upon which environmentally friendly behaviors are evaluated. From the perspective of purchasing environmentally friendly products, individuals' attitudes toward such products shape the perceived desirability of achieving environmental well-being through green purchasing.

Second, when advertising, marketing, and other communication activities are integrated with green marketing practices, consumers become more likely to purchase green products. The provision of abundant green information about products enables firms to reach their target audiences more effectively, raising consumer awareness and stimulating green purchase intentions (Ahmad and Zhang, 2020). Companies and marketers seek to enhance perceived green quality by launching promotional campaigns that disseminate information about the benefits of green products. Such campaigns improve consumers' knowledge and understanding of green products and encourage positive purchasing attitudes (Mensah, 2021). However, because the relationship between environmental attitudes and green purchasing behavior is not always linear, green marketing has been criticized for exaggerating environmental claims and overlooking actual consumer behavior. To bridge the gap between green consumer attitudes and actual purchasing behavior, Sharma (2021) proposed a green purchasing model in which green consciousness, green awareness, and green knowledge collectively form the personal factors leading to favorable attitudes toward green purchasing. While green marketing activities play a crucial role in shaping consumers' purchase intentions by emphasizing the sustainable environmental and social impacts of green products, marketers must also ensure the accuracy of information presented in advertisements and avoid misleading practices such as greenwashing. Otherwise, consumer trust in green products and engagement in green consumption activities may decline (Zhang and Dong, 2020).

Another important factor influencing green product purchases is the extent to which products align with consumers' values. Consumers increasingly seek products that reflect their personal values rather than making purchasing decisions solely based on brand loyalty or price. As a result, they tend to favor products that are environmentally, ethically, and socially sustainable (Testa et al., 2021). Therefore, products should not only satisfy consumers' practical and economic needs but also provide the environmental benefits that consumers expect. Although green products are often more expensive than conventional alternatives, increasing concern about environmental issues and commitment to environmental protection have led many consumers to demonstrate a willingness to pay premium prices for green products (Zhang and Dong, 2020). Consequently, products and brands that address consumers' environmental concerns and sensitivities are more likely to be preferred by green consumers, regardless of price differences.

2.5. Theoretical and Psychological Foundations of Green Consumption Behavior

One of the most widely used approaches for explaining green consumption behavior is the Theory of Planned Behavior, developed by Icek Ajzen. According to this theory, human behavior is not random but emerges through a planned process based on specific cognitive evaluations. The central determinant of behavior is behavioral intention, which reflects an individual's willingness to perform a particular behavior and the effort exerted toward carrying it out (Ajzen, 1991). As the strength of intention increases, the likelihood of performing the behavior also increases.

According to the Theory of Planned Behavior, behavioral intention is shaped by three key factors: attitude toward the behavior, subjective norms, and perceived behavioral control. Attitude toward the behavior refers to an individual's positive or negative evaluations of environmentally friendly products and practices. For example, individuals who believe that recyclable packaging provides environmental benefits are more likely to prefer such products. Subjective norms represent individuals' perceptions of the expectations of their social environment. Support for sustainable consumption from family members, friends, and society can strengthen an individual's intention to purchase green products. Perceived behavioral control reflects an individual's perception of their capability to perform the behavior. Limited access to environmentally friendly products or the high cost of such products may reduce individuals' perceived ability to engage in the behavior (Ajzen, 2006; Mathieson, 1991; Huang and Chuang, 2007; Cheon et al., 2012; Cohen and Hanno, 1993; Lu et al., 2007; Hsu et al., 2006).

The green consumption behavior model derived from the Theory of Planned Behavior is presented in Fig. 2. The model illustrates that individuals' green consumption behaviors emerge through behavioral intentions shaped by attitudes

toward the behavior, subjective norms, and perceived behavioral control. As the strength of intention increases, the likelihood of engaging in environmentally friendly purchasing behavior also rises.

When behavior cannot be fully explained through rational evaluations alone, the Norm Activation Theory (NAT) becomes particularly relevant. NAT is an important theoretical framework that explains individuals' environmentally responsible behaviors in terms of moral norms and perceived personal responsibility. Previous studies have demonstrated that NAT possesses strong explanatory power, particularly in understanding sustainable and prosocial behaviors. For instance, increased awareness of environmental consequences has been shown to significantly influence behaviors such as recycling, energy conservation, and the preference for environmentally friendly products (Stern, 2000). Similarly, the effect of personal norms on pro-environmental behavior is closely associated with individuals' value systems and environmental sensitivity. The Value-Belief-Norm (VBN) model, developed within this framework, proposes that environmental values and beliefs shape personal norms, which in turn guide behavior (Stern et al., 1999).

The Value-Belief-Norm (VBN) Theory explains environmentally responsible behavior through individuals' value systems (Stern, 2000). According to this model, personal values shape environmental beliefs, which subsequently develop into personal norms that motivate behavior. Research indicates that pro-environmental behaviors are more prevalent among individuals who hold strong biospheric and altruistic values. In this context, green consumption is viewed not merely as a utility-driven choice but as a normative behavior shaped by individuals' values and their sense of moral responsibility (Fig. 3).

The model suggests that environmentally friendly behaviors emerge through a sequential process involving values, beliefs, and personal norms. Specifically, individuals' values influence their environmental beliefs; these beliefs, in turn, activate personal norms, which ultimately guide behavior.

Habits are defined as behavioral patterns that are triggered by specific contextual cues and maintained over time with minimal cognitive effort. For example, consumers may repeatedly choose the same brand during shopping or purchase certain products automatically without engaging in conscious deliberation. Such behaviors reflect the automatic nature of habitual actions. Accordingly, consumer behavior may be guided more by habits than by deliberate decision-making processes, highlighting the importance of transforming existing habits in order to promote sustainable consumption behaviors.

Similarly, Social Practice Theory conceptualizes consumption behavior not as a matter of individual choice but as a socially embedded practice. According to this perspective, behaviors are shaped through the interaction of materials (products and infrastructures), competences (knowledge and skills), and meanings (cultural values and social norms) (Shove et al., 2012). From this viewpoint, green consumption is regarded not merely as an individual choice but as a socially constructed practice. For instance, the widespread adoption of recycling behavior depends not only on individual environmental awareness but also on the availability of appropriate infrastructure and the support of cultural norms.

In conclusion, green consumption behavior is a multidimensional phenomenon that emerges through the interaction of cognitive evaluations, social influences, personal values, moral norms, habits, and social practices. Therefore, policies and strategies aimed at promoting green consumption should extend beyond increasing individual awareness and adopt a holistic approach that addresses the full range of psychological and social mechanisms shaping consumer behavior.

3. Materials and Methods

The research data were obtained through surveys conducted with students enrolled at Ondokuz Mayıs University, Samsun Vocational School. The sample size was determined using Cochran's sampling formula (Eq. 1) (Bartlett et al., 2001)

$$n = \frac{(t)^2 (p) (q)}{(d)^2}, \quad n = \frac{(1.96)^2 (0.5) (0.5)}{(0.05)^2} = 384$$

Where n represents the sample size, t is the table value corresponding to a 95% confidence level, p is the probability of occurrence of the event under investigation (0.5), q is the probability of non-occurrence of the event (q = 1 − p), and d denotes the acceptable margin of error (5%). Accordingly, the minimum required sample size was calculated as 384 students.

The questionnaire was developed by the researchers using Google Forms based on previous studies in the literature (Straughan and Roberts, 1999; Uzun and Sağlam, 2006; Koçoğlu and Koçoğlu, 2017; Acer and Karagöz Taşkın, 2020; Yeşil and Turan, 2020). The questionnaire consisted of two sections. The first section included questions regarding the respondents' socio-demographic characteristics, such as gender, age, and income level. The second section comprised five-point Likert-scale items designed to measure students' green consumer behaviors. Response categories were coded as follows: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Usually, and 5 = Always.

survey was administered online between August 30 and October 30, 2024, by distributing the survey link to students enrolled at OMU Samsun Vocational School. Data analysis was performed using IBM SPSS Statistics 21. Descriptive statistics, including means and percentages, were employed to evaluate the characteristics of the respondents. In addition, exploratory factor analysis (EFA) was conducted on the items measuring students' green consumer behaviors, and statements exhibiting similar characteristics were grouped under common factors. Factor analysis is a multivariate statistical technique used to examine the relationships among a large number of variables and to determine whether these variables can be explained by a smaller number of underlying latent factors (Henrica et al., 2005). Furthermore, Structural Equation Modeling (SEM) was employed to simultaneously test the relationships among the identified factors. Through the proposed model, the effects of eco-literacy, lifestyle, and environmental citizenship on sustainable consumption behavior were examined.

4. Results

The findings indicate that students most frequently engage in the behavior of turning off lights in unused rooms (M = 4.48). Similarly, avoiding noise levels that may disturb others (M = 4.23) and using water efficiently (M = 4.08) emerged as other prominent environmentally responsible behaviors. In contrast, the least emphasized behaviors were recycling practices (M = 2.66) and paying attention to whether product packaging is recyclable (M = 2.43) (Table 2).

These results suggest that environmentally responsible behaviors are more prevalent in routine daily activities that require minimal effort or financial cost. In contrast, behaviors related to recycling and sustainable purchasing decisions appear to be less firmly established among students. This finding is consistent with previous international evidence. A study conducted by the Organisation for Economic Co-operation and Development (OECD) reported that energy-saving behavior represented the most common form of environmental engagement among individuals aged 15 years and older, with a participation rate of 73% (OECD, 2022). The similarity between the present findings and OECD data suggests that young consumers are more likely to adopt environmental behaviors that can be easily integrated into their daily routines and that require relatively limited behavioral change.

Table 2
Descriptive Statistics On Green Consumer Trends

Item		Mean	SD
X1	I attach importance to recycling.	2,66	0.879
X2	I pay attention to whether product packaging is recyclable.	2,43	1.091
X3	I separate recyclable waste from general household waste.	3,22	1.183
X4	I make sure not to dispose of used batteries with household waste and instead place them in designated battery collection bins.	3,51	1.249
X5	I try to use water efficiently.	4,08	0.951
X6	I make sure to turn off lights in rooms that are not in use.	4,48	0.814
X7	I try to use both sides of paper.	4,06	1.028
X8	I avoid making noise at levels that may disturb other people.	4,23	1.016
X9	I try to use disposable products (e.g., paper towels, paper cups, wet wipes) sparingly.	3,99	0.998
X10	For short distances, I prefer walking or public transportation instead of using a private vehicle.	3,84	1.278
X11	I remind family members to unplug electronic devices after charging.	3,80	1.153
X12	If I see someone littering, I warn them.	3,12	1.124
X13	I like receiving recommendations from people close to me about environmentally friendly products.	3,16	1.209
X14	When purchasing a product, I check whether it contains environmentally harmful ingredients.	2,89	0.857
X15	When product characteristics are similar, I prefer recyclable products over non-recyclable ones.	3,19	0.808
X16	I avoid purchasing products that may harm the environment.	3,02	0.814
X17	I consider it important that products are environmentally friendly.	2,81	0.882
X18	I do not purchase brands that exploit animals.	3,79	0.873
X19	I am willing to pay more for environmentally friendly products.	2,73	0.859

The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy is an indicator used to assess the suitability of data for factor analysis, with values above 0.50 generally considered acceptable. Higher KMO values indicate a stronger degree of shared variance among variables and greater suitability for factor analysis (Kalaycı, 2010). The KMO value obtained in this study was 0.885, indicating that the sample size was adequate for factor analysis. Furthermore, Bartlett's Test of Sphericity revealed that the correlations among the variables were sufficiently large to justify the application of factor analysis ($p < 0.001$). In addition, the Cronbach's alpha coefficient was calculated as 0.873, demonstrating a high level of internal consistency and reliability of the measurement scale ($\alpha > 0.80$) (Table 3).

Table 3
KMO Measure of Sampling Adequacy, Bartlett's Test of Sphericity, and Reliability Statistics

Kaiser–Meyer–Olkin (KMO) Measure of SamplingAdequacy0.885		
Bartlett's Test of Sphericity	Chi-Square (χ^2)	2674.148
	Significance Level (p)	171
		0.000
Cronbach's Alpha (α) 0.873		

Exploratory factor analysis conducted on the items presented in Table 1 revealed four underlying dimensions of green consumer behavior. These dimensions were labeled as eco-literacy, lifestyle, sustainable consumption, and environmental citizenship, respectively.The eco-literacy factor is associated with preferences for environmentally friendly, recyclable, and animal welfare-oriented products. This dimension reflects individuals' tendency to demonstrate environmentally responsible behavior through their consumption choices.

The lifestyle factor encompasses behaviors aimed at preventing the waste of resources such as energy and water. It represents one of the primary domains in which individuals can directly translate their environmental responsibilities into everyday practices.

The sustainable consumption factor is related to the inclusion of packaging materials and waste in recycling processes. This dimension represents the behavioral aspect of sustainable waste management and environmental awareness. The findings indicate that students place less emphasis on recycling-related activities compared to purchasing and resource-conservation behaviors (Table 4). Previous studies conducted in Türkiye have similarly reported relatively low levels of recycling awareness among young people. In a review of existing research, Taşan (2024) concluded that students at nearly all levels of the Turkish education system possess insufficient knowledge regarding waste management and recycling practices.

The environmental citizenship factor reflects attitudes toward monitoring others' environmental behaviors, informing them about environmental issues, and encouraging environmentally responsible actions. This dimension highlights the social sensitivity and community-oriented aspects of environmental responsibility (Table 4).

Table 4
Results of the Exploratory Factor Analysis

Factors	Items	F1	F2	F3	F4
F1: Eco-Literacy	I consider it important that products are environmentally friendly (X17).	0.835			
	When purchasing a product, I check whether it contains environmentally harmful ingredients (X14).	0.789			
	I avoid purchasing products that may harm the environment (X16).	0.788			
	I am willing to pay more for environmentally friendly products (X19).	0.757			
	When product characteristics are similar, I prefer recyclable products over non-recyclable ones (X15).	0.706			
	I do not purchase brands that exploit animals (X18).	0.664			
F2: Lifestyle	I make sure to turn off lights in rooms that are not in use (X6).		0.803		
	I try to use both sides of paper (X7).		0.729		
	I try to use water efficiently (X5).		0.680		
	For short distances, I prefer walking or public transportation instead of using a private vehicle (X10).		0.592		
	I avoid making noise at levels that may disturb others (X8).		0.569		
	I try to use disposable products (e.g., paper towels, paper cups, wet wipes) sparingly (X9).		0.555		
F3: Sustainable Consumption	I separate recyclable waste from general household waste (X3).			0.767	
	I pay attention to whether product packaging is recyclable (X2).			0.698	
	I attach importance to recycling (X1).			0.638	
	I make sure not to dispose of used batteries with household waste and instead place them in designated battery collection bins (X4).			0.601	
F4: Environmental Citizenship	I remind family members to unplug electronic devices after charging (X11).				0.690
	If I see someone littering, I warn them (X12).				0.653
	I like receiving recommendations from people close to me about environmentally friendly products (X13).				0.538

Overall, the four-dimensional structure identified through factor analysis (eco-literacy, lifestyle, sustainable consumption, and environmental citizenship) demonstrates that gren consumption behavior is a multidimensional and dynamic phenomenon. This finding is consistent with previous research suggesting that gren consumption is not merely the outcome of individual preferences but is shaped by the interaction of cognitive, social, and behavioral processes (Barbu et al., 2022).

As shown in Table 5, the four-factor structure explains 57.255% of the total variance. Among the explained variance, eco-literacy accounts for 20.184%, lifestyle for 16.450%, sustainable consumption for 12.197%, and environmental citizenship for 8.424%. These findings indicate that eco-literacy represents the most influential dimension of green consumer behavior within the proposed factor structure, followed by lifestyle, sustainable consumption, and environmental citizenship

Table 5
Total Variance Explained

Factors	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
F1	6.065	31.922	31.922	6.065	31.922	31.922	3.835	20.184	20.184
F2	2.367	12.459	44.381	2.367	12.459	44.381	3.126	16.450	36.634
F3	1.442	7.591	51.972	1.442	7.591	51.972	2.317	12.197	48.831
F4	1.004	5.283	57.255	1.004	5.283	57.255	1.601	8.424	57.255

As presented in Table 6, positive and statistically significant relationships were found among all dimensions of young consumers' green consumption tendencies. The strongest relationship was observed between lifestyle and environmental citizenship (r = 0.508), whereas eco-literacy demonstrated moderate positive correlations with the other dimensions. These findings suggest that individuals with higher levels of environmental awareness are more likely to exhibit environmentally responsible behavioral tendencies (Table 6).

Table 6
Correlations Among the Factors

Factors	F1	F2	F3	F4
F1. Eco-Literacy	1			
F2. Lifestyle	.338*	1		
F3. Sustainable Consumption	.387*	.413*	1	
F4. Environmental Citizenship	.338*	.508*	.321*	1

All correlations are statistically significant at $p < .001$.

As presented in Table 7, the factor loadings in the research model were generally found to be at acceptable levels. The Cronbach's alpha and Composite Reliability (CR) values exceeded the recommended threshold levels, indicating a high degree of internal consistency and reliability for the measurement scales. Furthermore, the Average Variance Extracted (AVE) values were generally close to or above the recommended threshold of 0.50, providing evidence of the model's convergent validity (Table 7).

Table 7
Confirmatory Factor Analysis (CFA) Results of the Measurement Model

Factors	Factor Loading Range	Cronbach's α	CR	AVE
F1 (Eco-Literacy)	0.62–0.88	0.875	0.892	0.584
F2 (Lifestyle)	0.58–0.81	0.787	0.815	0.512
F3 (Sustainable Consumption)	0.61–0.74	0.647	0.712	0.485
F4 (Environmental Citizenship)	0.65–0.79	0.671	0.738	0.501

According to the structural model results, eco-literacy had a positive and statistically significant effect on sustainable consumption (β = 0.354, p < 0.001). Similarly, environmental citizenship was found to exert a positive and significant influence on sustainable consumption (β = 0.231, p = 0.026). The effect of lifestyle on sustainable consumption was marginally significant (β = 0.162, p = 0.055). Furthermore, the independent variables included in the model explained 21.8% of the variance in sustainable consumption (R^2 = 0.218). These findings indicate that the proposed model possesses a moderate level of explanatory power (Table 8).

Table 8
Structural Model Results

Hypotheses	Path	β	t-value	p-value	Result
H1	F1 → F3	0.354	4.022	< .001	Supported
H2	F2 → F3	0.162	1.928	.055	Partially Supported
H3	F4 → F3	0.231	2.242	.026	Supported
Note: The coefficient of determination for the model was R^2 = 0.218.					

5. Discussion

Overall, the findings indicate that students have developed a certain degree of environmental awareness and sensitivity; however, this awareness is not consistently reflected in their sustainable consumption behaviors. This finding suggests that the gap between environmental attitudes and actual behavior, which has been widely emphasized in the green consumption literature, is also evident within the present sample. Although individuals may possess positive attitudes and strong intentions, they may fail to translate these intentions into actual behavior due to barriers such as economic constraints, difficulties in accessing environmentally friendly products, or insufficient information.

Furthermore, the findings demonstrate that green consumption behavior is not merely the result of individual preferences but rather a multidimensional construct shaped by the interaction of environmental knowledge, lifestyle, sustainable consumption habits, and environmental responsibility. Accordingly, environmentally responsible behavior cannot be explained solely by environmental awareness, as psychological, social, and cultural factors also play a significant role in shaping consumer behavior. Similarly, Hu et al. (2026) reported that green consumption behavior is not a unidimensional construct but is influenced by the combined effects of environmental knowledge, lifestyle, and environmental responsibility.

One of the most notable findings of the research is that students tend to engage in environmentally friendly behaviors primarily within the context of daily routines and low-cost actions. The high mean scores associated with behaviors such as turning off lights in unused rooms, conserving water, and using resources carefully suggest that environmental behaviors are largely habit-based. This finding is consistent with Habit Theory, which argues that a substantial

proportion of human behavior is guided by automated routines developed through repeated experiences (Verplanken and Aarts, 1999). Likewise, Vita et al. (2019) emphasized that sustainable lifestyles often emerge through the gradual transformation of existing habits rather than through radical behavioral changes.

In contrast, behaviors requiring greater cognitive evaluation and conscious decision-making, such as recycling and purchasing environmentally friendly products, were found to be less prevalent. In particular, limited attention to recyclable packaging, low participation in recycling activities, and a low willingness to pay premium prices for environmentally friendly products suggest that students experience difficulties in translating environmental attitudes into actual behavior. This finding is closely aligned with the concept of the attitude–behavior gap, which has been widely discussed in the literature. Although individuals express concern for environmental issues, they often fail to act accordingly due to factors such as economic costs, established habits, insufficient knowledge, and accessibility barriers (Carrington et al., 2010). Similarly, Connolly and Prothero (2008) argued that sustainable consumption reflects an inherent tension between environmental ideals and practical realities.

The strong explanatory power of the eco-literacy dimension indicates that environmental knowledge and awareness play an important role in shaping green consumption behavior. However, despite relatively high levels of environmental awareness, the limited behavioral outcomes observed in this research suggest that the relationship between knowledge, attitudes, and behavior is not linear. This finding implies that environmental awareness alone is insufficient to generate behavioral change and that additional motivational and structural mechanisms are necessary to encourage sustainable consumption practices.

The emergence of lifestyle as a strong factor suggests that environmentally responsible behaviors become more sustainable when they are integrated into individuals' daily practices. This finding is consistent with Social Practice Theory, which argues that behaviors are shaped not only by individual preferences but also by social practices, infrastructure, and cultural meanings (Shove et al., 2012).

The relatively low level of the sustainable consumption dimension indicates that students have not developed sufficient behaviors, particularly with regard to recycling and waste management. This finding is consistent with previous studies reporting limited levels of knowledge and practical engagement in recycling among young people in Türkiye (Taşan, 2024). Furthermore, when interpreted within the framework of the Theory of Planned Behavior, this result suggests that low perceived behavioral control may hinder the performance of environmentally responsible behaviors (Ajzen, 1991).

The environmental citizenship dimension further demonstrates that environmental behavior is not independent of its social context. Individuals' tendency to monitor, advise, or influence others regarding environmental issues suggests that environmentally responsible behaviors are shaped through social norms and interpersonal interactions. This finding is consistent with both the concept of subjective norms within the Theory of Planned Behavior and the Norm Activation Theory (Schwartz, 1977).

The structural model results provide further support for these findings. According to the analysis, eco-literacy and environmental citizenship exert positive and significant effects on sustainable consumption. This suggests that individuals with higher levels of environmental knowledge and a stronger sense of environmental responsibility are more likely to adopt sustainable consumption behaviors. The effect of lifestyle on sustainable consumption was found to be marginally significant. Similarly, Yadav and Pathak (2017) reported that individuals with greater environmental awareness tend to develop more favorable attitudes toward environmentally responsible behavior and exhibit stronger purchase intentions when supported by their social environment.

However, the relationship between intention and behavior is not always direct. In the present study, although students demonstrated environmentally responsible behaviors in their daily lives, such as turning off unused lights, avoiding

unnecessary vehicle use for short distances, and conserving water, they exhibited lower levels of consistency in behaviors that require greater organization and effort, such as recycling. This finding suggests that behavior cannot be explained solely through conscious and rational decision-making processes. According to Habit Theory, many consumption behaviors performed in everyday life are guided by automated routines developed through repeated experiences rather than deliberate evaluations (Verplanken and Aarts, 1999).

Conclusions and Recommendations

The findings of this research indicate that although students generally exhibit positive attitudes toward environmental issues, these attitudes are not reflected to the same extent in sustainable consumption behaviors. In particular, behaviors embedded in daily routines, such as energy conservation and water saving, were found to be highly prevalent, whereas behaviors such as recycling, purchasing environmentally friendly products, and willingness to pay a premium for green products remained at relatively low levels. These findings support the attitude–behavior gap frequently highlighted in the green consumption literature. They further suggest that green consumption behavior cannot be explained solely by individual environmental awareness but is also influenced by economic, social, and structural factors. Similarly, Doan et al. (2025) emphasized that environmentally responsible behaviors are shaped not only by individual awareness but also by social learning processes, environmental norms, and social interactions.

The four-dimensional structure identified in this research eco-literacy, lifestyle, sustainable consumption, and environmental citizenship demonstrates that green consumption behavior is a multidimensional and dynamic phenomenon. The findings indicate that environmentally responsible behavior is influenced not only by individual awareness but also by social norms, habits, economic conditions, and the feasibility of behavioral implementation. In this respect, the research is consistent with previous research suggesting that green consumption behavior emerges through the interaction of cognitive, social, and behavioral processes.

The structural model results revealed that eco-literacy and environmental citizenship exert significant positive effects on sustainable consumption. This finding suggests that individuals with higher levels of environmental knowledge and stronger senses of social and environmental responsibility are more likely to adopt sustainable consumption behaviors. The marginal significance of the lifestyle dimension further indicates that environmentally responsible behavior is associated not only with conscious decision-making processes but also with everyday routines and habitual practices. This finding is consistent with both Habit Theory and Social Practice Theory.

Based on the findings, several practical implications can be proposed. Environmental education provided at universities should move beyond the transmission of theoretical knowledge and incorporate more practice-oriented activities. In addition, strengthening recycling infrastructure, improving the accessibility of environmentally friendly products, and promoting social campaigns that encourage environmentally responsible behaviors among students may contribute to the wider adoption of sustainable consumption practices.

Declarations

Ethical Approval

and accordance: This study was approved by the Social Sciences and Humanities Research Ethics Committee of Ondokuz Mayıs University, Türkiye (Decision No. 2024 – 762). The study was conducted in accordance with the OMÜ Social Sciences and Humanities Research Ethics Committee Directive and applicable ethical principles and regulations.

Consent to Participate:

Informed consent was obtained from all participants prior to their participation in the study. Participation was voluntary, and the confidentiality and anonymity of the participants were ensured throughout the research process.

Consent to Publish:

Not applicable.

Clinical Trial Number

Not Applicable

Funding:

No funding was received for this research.

Author Contribution

Gamze Aydın Eryılmaz conceived the study, prepared the main manuscript, and performed the data analysis. Şadiye Nur Güleç contributed to the writing of the manuscript and assisted with the preparation and organization of the figures. Halil İbrahim Ertuğ reviewed the final version of the manuscript, revised the text, and contributed to the English translation. All authors read and approved the final version of the manuscript.

Acknowledgement:

All the authors have been agreed to the published version of this manuscript.

Data Availability

The data sets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

References

1. Acer A, Karagöz Taşkın İB. Ecofriendly and green consumer: A survey on university students. Acad Rev Econ Administrative Sci. 2020;13(2):260–76.
2. Ahmad W, Zhang Q. Green Purchase Intention: Effects of Electronic Service Quality and Customer Green Psychology. J Clean Prod. 2020;267:122053.
3. Ajzen I. The theory of planned behavior. Organ Behav Hum Decis Process. 1991;50(2):179–211.
4. Ajzen I. Constructing a theory of planned behavior questionnaire. University of Massachusetts Amherst; 2006.
5. Akyüz M, Çetinkaya FF. A study to determine the factors affecting renewable energy consumption. SIAD. 2025;4(1):36–57.
6. Al-Kumaim NH, Shabbir MS, Alfarisi S, Hassan SH, Alhazmi AK, Hishan SS, Al-Shami S, Gazem NA, Mohammed F, Al-Rejal A. H.M. (2021), Fostering a Clean and Sustainable Environment Through Green Product Purchasing Behavior: Insights From Malaysian Consumers' Perspective, *Sustainability*, Vol. 13 No. 22, 12585.

7. Ansu-Mensah P. Green Product Awareness Effect On Green Purchase İntentions of University Students': An Emerging Market's Perspective. Future Bus J. 2021;7(1):48.
8. Barbu A, Catană ȘA, Deselnicu DC, Cioca LI, Ioanid A. Factors influencing consumer behavior toward green products: A systematic literature review. Int J Environ Res Public Health. 2022;19:24, 16568.
9. Bartlett JE, Kotrlik JW, Higgins CC. Organizational Research: Determining Appropriate Sample Size in Survey Research. Inform Technol Learn Perform J. 2001;19(1):43–50.
10. Başol O, Dülgeroğlu İ, Öztürk Başol R. Green Purchase Behavior Of Young Consumers: International Perception Differences. Mehmet Akif Ersoy Univ J Social Sci Inst. 2016;8(15):1–16.
11. Beatson A, Gottlieb U, Pleming K. Green Consumption Practices For Sustainability: An Exploration Through Social Practice Theory. J Social Mark. 2020;10(2):197–213.
12. Bian T. (2020), A Review On Green Consumption, *In IOP Conference Series: Earth and Environmental Science*, Vol. 615 No. 1, 012029.
13. Bilge H. (2015). Investigation of Students' Environmental Sensitivity in Terms of Various Variables (Master's Thesis). Department of Primary Education, Institute of Educational Sciences, Atatürk University.
14. Bozlağan R. (2010). Sürdürülebilir Gelişme Düşüncesinin Tarihsel Arka Planı. *Journal of Social Policy Conferences*, Vol. *50*, pp. 1011–1028.
15. Brochado A, Teiga N, Oliveira-Brochado F. The Ecological Conscious Consumer Behaviour: Are The Activists Different? Int J Consumer Stud. 2017;41(2):138–46.
16. Caniëls MC, Lambrechts W, Platje JJ, Motylska-Kuźma A, Fortuński B. Impressing My Friends: The Role Of Social Value in Green Purchasing Attitude For Youthful Consumers. J Clean Prod. 2021;303:126993.
17. Carrington MJ, Neville BA, Whitwell GJ. Why Ethical Consumers Don't Walk Their Talk: Towards A Framework For Understanding The Gap Between The Ethical Purchase İntentions And Actual Buying Behaviour Of Ethically Minded Consumers. J Bus Ethics. 2010;97(1):139–58.
18. Cheon J, Lee S, Crooks SM, Song J. An investigation of mobile learning readiness in higher education based on the theory of planned behavior. Comput Educ. 2012;59(3):1054–64.
19. Cheung MF, To WM. An extended Model of Value-Attitude-Behavior To Explain Chinese Consumers' Green Purchase Behavior. J Retailing Consumer Serv. 2019;50:145–53.
20. Cohen J, Hanno DM. An analysis of underlying constructs affecting the choice of accounting as a major. Issues Acc Educ. 1993;8(2):219–38.
21. Connolly J, Prothero A. Green Consumption: Life-Politics, Risk and Contradictions. J Consumer Cult. 2008;8(1):117–45.
22. Çetinkaya C, Özceylan E. A Survey On University Students' Attitudes On Green Products: A Case Study in Gaziantep University. Gaziantep Univ J Social Sci. 2017;16(1):289–302.
23. Dangelico RM, Nonino F, Pompei A. Which are the Determinants of Green Purchase Behaviour? A Study of Italian Consumers. Bus Strategy Environ. 2021;30(5):2600–20.
24. Dekhili S, Nguyen TP. Green Consumption in Vietnam: Effects of Eco-Certification, Brand, and Moderate Incongruity of Their Origins on Purchase Intent. Recherche et Appl en Mark (English Edition). 2021;36(3):25–49.
25. Delmas MA, Burbano VC. The Drivers of Greenwashing. Calif Manag Rev. 2011;54(1):64–87.
26. Doan MH, Drossel AL, Sassen R. Sustainable food consumption behaviors of generations Y and Z: A comparison study. Clean Responsible Consum. 2025;17:100272.
27. Doğan O, Bulut Z, Kökalan Çımrın F. A scale development study to measure individuals' sustainable consumption behavior. Trends Bus Econ. 2015;29(4):659–78.

28. Dutta B, Hwang HG. Consumers Purchase İntentions of Green Electric Vehicles: The İnfluence of Consumers Technological and Environmental Considerations. Sustainability. 2021;13:21, 12025.
29. Ebrahimi P, Hoffmann S, Schneider J. Opening the black box: How reasoning-enabled AI agents influence user perceptions and behavior in sustainable consumption. Int J Inf Manag. 2026;90:103075.
30. Ellen PS, Wiener JL, Cobb-Walgren C. The Role of Perceived Consumer Effectiveness in Motivating Environmentally Conscious Behaviors. J Public Policy Mark. 1991;10(2):102–17.
31. Farhadi Andarabi F, Hassan A. Measuring environmentally sensitive behavior of hospitality managers in slow cities on the basis of the value belief norm theory. Anatolia: J Tourism Res. 2022;33(1):81–93.
32. Ghazali EM, Mutum DS, Ariswibowo N. Impact of Religious Values And Habit on An Extended Green Purchase Behaviour Model. Int J Consumer Stud. 2018;42(6):639–54.
33. Greene WH. (2011). Econometric Analysis. Seventh Edition. Prentice Hall, ISBN-10: 0131395386, New Jersey.
34. Gujarati DN. Basic Econometrics. U.S.A.: Mc Graw-Hill Inc; 1995.
35. Güler AU. A Dynamic Profile of Green Consumers. Pazarlama ve Pazarlama Araştırmaları Dergisi. 2023;16(2):279–96.
36. Gültekin MC. An investigation into university students' environmental sensitivity: The sample of Mardin Artuklu University. J Social Tech Researches. 2017;14:172–85.
37. Han MS, Hampson DP, Wang Y, Wang H. Consumer Confidence and Green Purchase Intention: An Application of The Stimulus-Organism-Response Model. J Retailing Consumer Serv. 2022;68:103061.
38. Hansmann R, Laurenti R, Mehdi T, Binder CR. Determinants of Pro-Environmental Behavior: A Comparison Of University Students And Staff From Diverse Faculties at a Swiss University. J Clean Prod. 2020;268:121864.
39. Henrica CW, de Vet HCD, Adèr HJ, Terwee CB, Pouwer F. Are Factor Analytical Techniques Used Appropriately in The Validation if Health Status Questionnaires? A Systematic Review on The Quality Of Factor Analysis of the SF36. Qual Life Res. 2005;14:1203–18.
40. Hsu MH, Yen CH, Chiu CM, Chang CM. A longitudinal investigation of continued online shopping behavior: An extension of the theory of planned behavior. Int J Hum Comput Stud. 2006;64(9):889–904.
41. Hu D, Samad S, Mahmood S. Sustainable marketing and tourists' sustainable behavior in South Korea: The roles of emotional value, connectedness to nature, and green consumption values. Acta Psychol. 2026;262:106129.
42. Huang MH, Rust RT. Sustainability and Consumption. J Acad Mark Sci. 2011;39(1):40–54.
43. Huang YC, Chuang ST. Using the theory of planned behavior to predict consumer behavior in green products. J Consumer Behav. 2007;6(5):377–89.
44. Irfan H, Zeeshan H, Imran M, Kashif S. Greenwash and Green Purchase Behavior: An Environmentally Sustainable Perspective. Environ Dev Sustain. 2021;23(9):13113–34.
45. İbadullayeva J, Jumaniyazova K, Azimzadeh S, Canıgür S, Esen F. The effects of environmental pollution on human health. Turkish Med Student Res J. 2019;1(3):52–8.
46. Kamalanon P, Chen J-S, Tran-Thien -Y, Le. Why do we buy green products? An extended theory of the planned behavior model for green product purchase behavior. Sustainability. 2022;14:2, 689.
47. Kaya M, Demirtaş MC. Determination of Consumer Trends towards Green Consumption: A Research on Generation Z. Stud Mark Insights. 2023;7(1):86–102.
48. Kaytancı M, Çuhadar M. Determining the Factors Influencing Consumers' Green Product Purchasing Behaviors. Turkish J Agricultural Nat Sci. 2023;10(4):1129–36.
49. Kızılkaya O, Mike F. The Impact of Climate Change on Economic Growth: An Empirical Evaluation. Pamukkale Univ J Social Sci Inst. 2023;57:403–11.

50. Kiper T, Korkut A, Topal TÜ. A Research on Environmental Sensitivity of University Students: In the Example of Namık Kemal University. Inonu Univ J Art Des. 2017;7(16):112–24.
51. Koçoğlu CM, Koçoğlu Y. The Tendency to Purchase Environmentally Sensetive Products Within the Scope of Green Marketing: A Research on Students Studying Tourism Education at Undergraduate Level. Int J Manage Econ Bus. 2017;13(13):417–27.
52. Lu HP, Hsu CL, Hsu HY. An empirical study of the effect of perceived risk upon intention to use online applications. Inform Manage Comput Secur. 2007;15(2):97–114.
53. Mathieson K. Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. Inform Syst Res. 1991;2(3):173–91.
54. Mehraban R, Rezaei R, Safa L. Towards sustainable consumption in rural Iran: Insights from an extended Theory of Planned Behavior. Sustainable Futures. 2026;11:101658.
55. Meshram KK. The Circular Economy, 5R Framework, and Green Organic Practices: Pillars of Sustainable Development and Zero-Waste Living. Discover Environ. 2024;2(1):147.
56. Nayır C, Yıldırım F. The factors affecting green product consumption. Istanbul Ticaret Univ J Foreign Trade. 2024;2(4):1–13.
57. Ottman J. (2011), The New Rules of Green Marketing: Strategies, Tools, and Inspiration for Sustainable Branding (1st edition), Routledge.
58. Özkurt İC. The Relationship Between Climate Change and Consumer Inflation in Türkiye: VAR and Causality Analysisi. J Disaster Risk. 2025;8(3):1099–115.
59. Peattie K. Green Consumption: Behavior and Norms. Annu Rev Environ Resour. 2010;35:195–228.
60. Pirimov S, Sofyalıoğlu Ç. The impact of innovation on planned green purchasing behavior: The case of Russia. Turkuaz Int J Socio-Economic Strategic Res. 2025;7(2):99–138.
61. Ricci EC, Banterle A, Stranieri S. Trust to go Green: An Exploration of Consumer Intentions for Eco-Friendly Convenience Food. Ecological Economics. 2018;148:54–65.
62. Riskos K, Dekoulou, Paraskevi, Mylonas N, Tsourvakas G. Ecolabels and the Attitude–Behavior Relationship Towards Green Product Purchase: A Multiple Mediation Model. Sustainability. 2021;13(12):6867.
63. Schwartz SH. Normative influences on altruism. In: Berkowitz L, editor. Advances in experimental social psychology. Volume 10. Academic; 1977. pp. 221–79.
64. Shabnam S, Quaddus M, Roy SK, Quazi A. Consumer Belief System and Pro-Environmental Purchase Intention: Does Psychological Distance Intervene? J Clean Prod. 2021;327(1):129403.
65. Sharma AK, Sharma R. Assessing the influence of artificial intelligence on sustainable consumption behavior and lifestyle choices. Young Consumers. 2025;26(5):702–27.
66. Sharma AP. Consumers' Purchase Behaviour and Green Marketing: A Synthesis, Review and Agenda. Int J Consumer Stud. 2021;45(6):1217–38.
67. Shove E, Pantzar M, Watson M. The dynamics of social practice: Everyday life and how it changes. Sage; 2012.
68. Sousa S, Correia E, Viseu C, Larguinho M. Analysing the Influence of Companies' Green Communication İn College Students' Green Purchase Behaviour: An Application of The Extended Theory of Planned Behaviour Model. Administrative Sci. 2022;12(3):80.
69. Straughan R, Roberts J. Environmental Segmentation Alternatives: A Look at Green Consumer Behavior in the New Millennium. J Consumer Mark. 1999;16:558–75.
70. Stern PC. Toward a coherent theory of environmentally significant behavior. J Soc Issues. 2000;56(3):407–24.

71. Stern PC, Dietz T, Abel T, Guagnano GA, Kalof L. A value-belief-norm theory of support for social movements: The case of environmentalism. Hum Ecol Rev. 1999;6(2):81–97.
72. Su S, Yavuz M, Dalbudak O. A cross-sectional survey of climate change worry and sustainable consumption behaviours in Turkish nursing students. Nurse Educ Today. 2026;161:107020.
73. Tan Z, Sadiq B, Bashir T, Mahmood H, Rasool Y. (2022), Investigating the impact of green marketing components on purchase intention: The mediating role of brand image and brand trust, *Sustainability*, Vol. 14 No. 10, 5939.
74. Taşan M. Waste and Recycling Literacy in The Turkish Education System and Examination of Educational Studies in this Field. Hakkari Fac Educ J. 2024;3(2):58–79.
75. Testa F, Pretner G, Iovino R, Bianchi G, Tessitore S, Iraldo F. Drivers to Green Consumption: A Systematic Review: F. Testa Et Al. Environ Dev Sustain. 2021;23(4):4826–80.
76. United Nations Conference on Environment and Development. (UNCED), Rio de Janeiro, Brazil, 3–14 June 1992.
77. Uzun N, Sağlam N. Development and Validation of an Environmental Attitudes Scale for High School Students. Hacettepe Univ J Educ. 2006;30:240–50.
78. Üstündağlı E, Güzeloğlu E. Young Green Consumer Profile: An Analysis of Awareness, Attitudes and Behaviour. Global Media Journal: Turkish Ed. 2015;5(10):341–62.
79. Varela-Candamio L, Novo-Corti I, García-Álvarez MT. The Importance of Environmental Education in The Determinants of Green Behavior: A Meta-Analysis Approach. J Clean Prod. 2018;170:1565–78.
80. Vita G, Lundström JR, Hertwich EG, Quist J, Ivanova D, Stadler K, Wood R. The Environmental Impact Of Green Consumption and Sufficiency Lifestyles Scenarios in Europe: Connecting Local Sustainability Visions to Global Consequences. Ecol Econ. 2019;164:106322.
81. Wang B, Li J, Sun A, Wang Y, Wu D. (2019a), Residents' Green Purchasing Intentions in A Developing-Country Context: Integrating PLS-SEM and MGA methods, *Sustainability*, Vol. 12 No. 1, 30.
82. Wang H, Ma B, Bai R. (2019b), How Does Green Product Knowledge Effectively Promote Green Purchase İntention? *Sustainability*, Vol. 11 No. 4, 1193.
83. Wasaya A, Saleem MA, Ahmad J, Nazam M, Khan MMA, Ishfaq M. Impact of Green Trust and Green Perceived Quality on Green Purchase Intentions: A Moderation Study. Environ Dev Sustain. 2021;23(9):13418–35.
84. WCED (World Commission on Environment and Development). Our Common Future. Oxford: Oxford University Press; 1987.
85. Yadav R, Pathak GS. Determinants of consumers' green purchase behavior in a developing nation: Applying and extending the theory of planned behavior. Ecol Econ. 2017;134:114–22.
86. Yeşil M, Turan Y. A Scale Development Study on Environmental Sensitivity. ODU J Social Sci Res. 2020;10(2):418–35.
87. Zafar AU, Shen J, Ashfaq M, Shahzad M. Social Media and Sustainable Purchasing Attitude: Role of Trust İn Social Media and Environmental Effectiveness. J Retailing Consumer Serv. 2021;63:102751.
88. Zhang X, Dong F. Why do Consumers Make Green Purchase Decisions? Insights From a Systematic Review. Int J Environ Res Public Health. 2020;17:18, 6607.

Figures


green
consumption
environmental
consumers
products
purchase
behavior
research
intention
attitude
attitudes
norms
social
journal
marketing
consumer
influence
factors
effects
concern
awareness
values
media
government
education
climate
sustainable
international
responsibility
variables
considered
relationship
pro-environmental
energy
carbon
technologies
students
urban
applied
behaviors
reducing
value
provide
positively
electricity
household
world
intentions
means
sustainability
purchasing
management
culture
cleaner
image
tüketim
hypotheses
human
strongly
innovation
industry
framework
motivation
information
business
design
behavioural
society
future
effective
by
çevre
impacts
based
positive
reliability
economic
participants
important
awareness
actions
often
impact
strong
norms
attitudes
place
friendly
control
çevreye
variance
example
promoting
effect
low
their
research
measure
brand
recycling
trust
standard
cities
emissions
eco-friendly
change
production
sustainable
behavior
intentions
means
purchase
sustainability
electricity
household
positively
value
reducing
provide
considered
relationship
çevresel
technologies
present
one
energy
sensitivity
issues
consumer
influence
university
pazarlama
buying
promote
policy
yeşil
risk
air
natural
significant
behavioral
organic
environment
many
development
increase
individuals
affect
global
all
concern
people
social
ise
types
çevre
effective
future
by
design
behavioural
life
impact
often
actions
strong
norms
friendly
prod

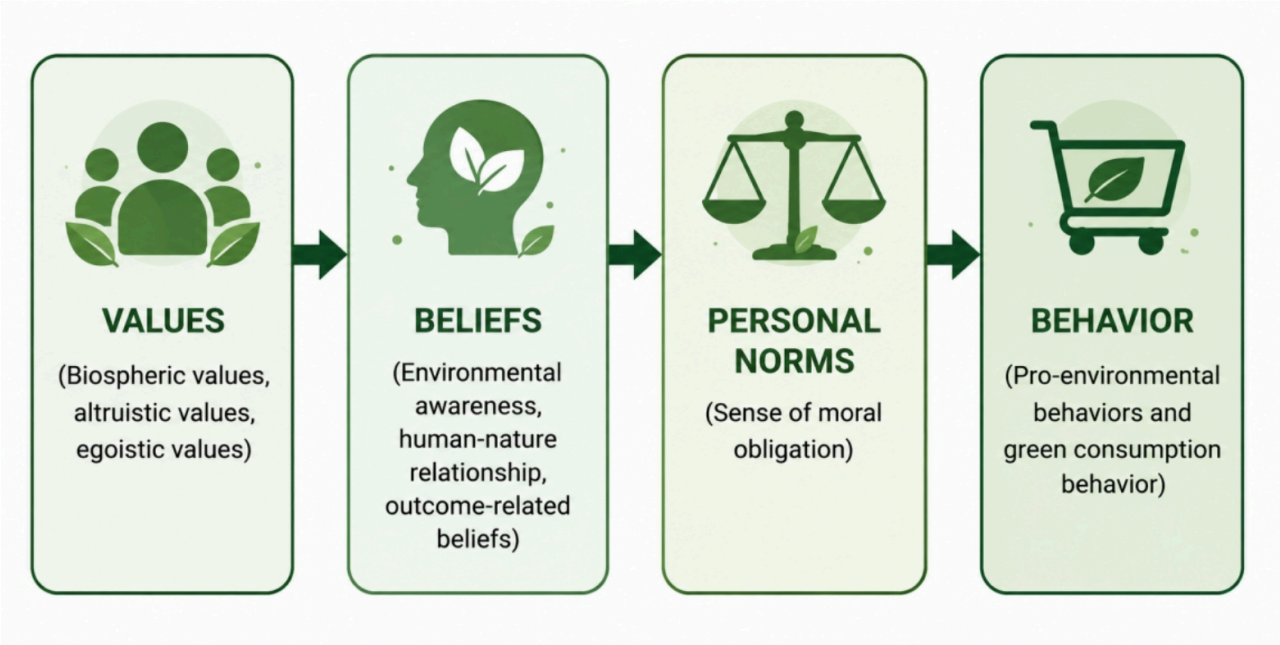


Figure 3

Value-Belief-Norm Theory (Green Consumption Behavior Model)