Turkish Journal of Agriculture - Food Science and Technology, 13(8): 2213-2223, 2025
DOI: https://doi.org/10.24925/turjaf.v13i8.v.7848

Turkish Journal of Agriculture - Food Science and Technology

Available online, ISSN: 2148-127X | www.agrifoodscience.com | Turkish Science and Technology Publishing (TURSTEP)

Factors Affecting Consumers' Green Product Preferences: The Case of Kırşehir Province

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ARTICLE INFO

Research Article

Received : 11/05/2025
Accepted : 19/05/2025

Keywords:
Green Product
Consumption
Consumer Behaviors
Consumer Awareness
Kırşehir-Türkiye

ABSTRACT

This study aims to identify the factors influencing green product consumption preferences among consumers residing in the central district of Kırşehir Province, in terms of various demographic characteristics. Data were collected from 581 participants through questionnaire and analyzed using descriptive statistics, frequency tables, and Chi-square tests. Findings revealed that 87.8% of the respondents reported consuming green products (female = 267; male = 314). Results from the Chi-square analysis indicated that marital status, level of education, presence of chronic illness, and awareness of environmentally friendly products were statistically significantly associated with green product consumption ($p<0.05$). Participants commonly defined green products as those with restricted use of chemicals and hormones and cited this attribute as a primary reason for their preference. The majority of respondents stated that green products differ from organic products and reported the internet as their main source of information. Most participants stated that they typically accessed green products at local bazaars, with fruits and vegetables, as well as grains and legumes, being the most frequently consumed product groups. The results indicate that, according to consumer opinions, the most significant barriers to purchasing green products are price, difficulties in access, and consumption habits. In response to a question regarding factors that could potentially increase green product consumption, the majority of participants selected "raising consumer awareness" and "reasonable pricing" as the most influential options. The results contribute to businesses and policy makers in developing strategies to raise consumer awareness and facilitate access to green products, with the aim of disseminating sustainable consumption behaviors and increasing environmental awareness.

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Introduction

Environmental issues such as global warming, climate change, biodiversity loss, and the depletion of natural resources are currently at the center of environmental sustainability efforts and are among the policy priorities of many countries. These environmental developments have led to a tendency among individuals to adopt more responsible consumption habits. This situation, which has been the subject of numerous scientific studies, also contributes to the widespread adoption of environmentally conscious production and consumption approaches at the societal level. In this context, 'green products'—which are involved in environmentally friendly production processes, provide energy savings, and minimize environmental harm with their recyclable packaging—are considered critical tools for achieving sustainable development goals (Peattie, 2001; Ottman, 2011). The consumption of green products is regarded not only as an indicator of environmental responsibility at the individual level but also as a source of competitive advantage for companies engaged in environmentally friendly production, contributing positively to the development of environmental policy processes (Chen & Chai, 2010).

In recent years, an increase has been observed in studies examining the factors affecting consumers' attitudes and purchasing behaviors toward green products. Within the literature, several key factors have been identified as influential in shaping consumer behavior related to green product consumption, including environmental awareness and knowledge levels (Joshi & Rahman, 2015), environmental concerns (Laroche et al., 2001), individual values and lifestyle (Thøgersen & Ölander, 2002; Yılmaz & Aytekin, 2020), perceived product quality (Chen & Chang, 2012), green trust (Chen, 2009), green product labeling (D'Souza et al., 2007), and purchase intention

(Yadav & Pathak, 2016). It has been stated that, in addition to motivations for environmental protection, factors such as personal health concerns and social influences are also involved in consumers' preference for green products (Şahin et al., 2016; Onurlubaş, 2019). One of the primary motivations for green product consumption is consumers' desire to protect their health. In this regard, various scientific studies have revealed that products free from chemical content, natural, and healthy are preferred by consumers (Şahin et al., 2016; Yıldız & Kelleci, 2022; Yemez & Delice Akca, 2024). Demographic characteristics such as gender, age, education level, and income have been found to play a significant role in green product consumption (Tilikidou, 2007; Çabuk et al., 2008). It has been reported in the literature that women tend to prefer environmentally friendly products more than men (Karahan et al., 2017), and that the use of green products increases in parallel with rising levels of education and income (Dong & Fuller, 2010; Tait et al., 2016; Lee, 2009; Dangelico & Vocalelli, 2017). Although young consumers are known to develop environmentally conscious attitudes, their rate of behavioral transformation has been reported to be relatively lower (Vermeir & Verbeke, 2006). In addition, some studies have reported that preferences for green products may vary locally and may differ depending on cultural and socio-economic structures, regional characteristics, and local market conditions (Biswas & Roy, 2015). Green marketing is utilized as a strategic tool by businesses to convey that they offer environmentally compatible products (Karaman, 2021; Urkut & Cengiz, 2021). Identifying the factors that shape consumers' green product purchasing behavior is of great importance for businesses in developing their marketing strategies both academically and practically (Karaman, 2021; Mosavıchechaklou & Bozbay, 2018). For instance, green marketing activities and the environmental awareness generated by these activities have been found to positively influence consumers' purchase intentions, while platforms such as social media have also been noted to play a significant role in enhancing this perception (Çerasi et al., 2024; Özsaçmacı, 2018). Similar trends have also been observed in studies conducted in the context of Türkiye, where it has been reported that individuals with a high level of environmental awareness show greater inclination toward green products (Bulut, 2022), although consumers have been found to experience certain hesitations regarding the price and reliability of these products (Şahin et al., 2016; Ilgar & Köprülü, 2023). Another limitation arising in green product consumption is the occasional inability of consumers to distinguish between concepts such as "organic," "natural," and "green." This conceptual ambiguity may negatively affect purchasing behavior.

Various scientific studies addressing green product consumption have been presented in the literature. In the study conducted by Mostafa (2007), gender differences in green purchasing behavior among consumers in Egypt were examined, and the effects of cognitive and attitudinal factors such as environmental knowledge, concern, and attitude were investigated. In the study by Şahin et al. (2016), the factors affecting green product preferences among consumers in Kahramanmaraş were explored, and it was stated that consumers primarily preferred green products due to health concerns. In a study conducted by Çetinkaya and Özceylan (2017), the green product purchasing attitudes of university students were analyzed, and it was determined that the desire of the younger generation to prefer environmentally friendly products had increased. It was found that the green product purchasing attitudes and sensitivities of young consumers, as well as their perceptions of ethical and environmental responsibility, differed according to their demographic characteristics, and that gender, education level, and academic department particularly affected specific green purchasing factors. Yürük-Kayapınar et al. (2019) investigated the effects of different generations on green product purchasing behavior, and it was observed that there were distinct attitudes among Generations X, Y, and Z. For example, while Generation Y was reported to place more emphasis on environmental sustainability, the habits of Generation Z had become more pronounced in this regard. However, it was determined that Generation X was the most sensitive and willing generation in terms of green product purchasing. In the study by Yetkin and Güzel (2020), in which the effect of the level of economic development on green consumption attitudes was addressed, it was stated that green purchasing behavior depended on certain demographic characteristics and the economic status of countries. In the study carried out by Özsaçmacı and Özdemir (2020), the effects of variables such as price, design, perceived quality, environmental attitude, expected benefit, and knowledge accumulation of environmentally friendly packaged supermarket products on consumers' attitudes, awareness, and purchasing intentions were examined. The findings of the mentioned study indicated that these variables positively affected consumers' attitudes and purchasing intentions toward environmentally friendly packaged products; however, the price factor was not found to have a significant effect on purchasing intentions. In the study by Ilgar and Köprülü (2023), the attitudes and behaviors of current and potential consumers in the Silifke district of Mersin toward green marketing practices, their demographic characteristics, and the factors that may influence their preference for environmentally conscious products were examined. According to the findings of the study, green marketing activities implemented by businesses were found to be effective in influencing consumers' preferences for the products of those businesses. According to the extended value-attitude-behavior model proposed by Yılmaz and Aytekin (2020), environmental awareness and attitudes are important factors that affect consumers' intentions toward green products. The influence of different reference groups and the quality of green products were found to have a positive impact on consumers' purchasing decisions. In a study conducted by Karaman (2021), the effects of green marketing knowledge level and life satisfaction on green product purchasing behavior based on generational differences were sought to be determined. The results indicated that green marketing knowledge, life satisfaction, and certain demographic factors (generation, income, marital status) influenced consumers' green product purchasing behavior, while gender did not create a significant difference in this study. Bayaş and Berdibek (2020) investigated the effect of religious values on green product purchasing behavior and revealed its impact on individuals of Islamic faith. It was determined that

differences in education level influenced green product purchasing behavior (with lower education levels corresponding to lower green product consumption), while gender, age, and marital status did not create significant differences. In a study by Bulut (2022), the impact of teachers' green organizational behavior on sustainable consumption behavior was examined. Among demographic factors, education level and seniority were found to have statistically significant effects on sustainable consumption behaviors, while gender, age, and marital status were not found to have such an effect. Çerasi et al. (2024) conducted a text mining application examining the impact of social media on consumers' perceptions of green consumption. It was stated that, particularly due to the COVID-19 pandemic, people needed to pay more attention to their relationship with nature and the environment. In the study conducted by Villi and Bahar (2023), the websites and social media accounts of "cruelty-free" labeled brands operating in Türkiye's cosmetics sector were analyzed using content analysis. According to the findings of the study, it was observed that cruelty-free labeled brands did not sufficiently highlight themselves in terms of gaining a competitive advantage, and they did not adequately use social media—through which they could easily engage with consumers—for this purpose.

In this study, it has been aimed to examine the factors affecting the green product consumption preferences of individuals residing within the boundaries of the central district of Kırşehir province in terms of demographic variables.

Materials and Methods

The study population was defined as the Central District of Kırşehir Province. Within the scope of the research, primary data obtained through surveys conducted with 581 participants were analyzed. A quantitative research model was employed in the study. Fieldwork was carried out in 2024. The sample size in the research was determined using the simple random sampling method. In the agricultural economics literature, the mathematical representation used for finite populations in sampling methods is provided in Equation 1 (Yamane, 2010). In Equation 1, n= sample size, N= number of individuals constituting the study population (i.e., the consumer population residing in the central district of Kırşehir Province), t= indicates the table value at a 95% confidence level (1.96), d= accepted margin of sampling error (0.10), p= estimated proportion of individuals who consume green products (0.5), and q= denotes the complementary probability calculated as. 1-p

$$n = \frac{N*t^2*p*q}{d^2*(N-1)+t^2*p*q} \quad (1)$$

The data collection instrument used within the scope of the research was structured based on the relevant literature review and the existing scales in the academic field. The survey was administered by the researchers. The first section of the questionnaire consists of questions related to demographic characteristics. This section includes questions designed to measure participants' age, gender, education level, monthly food expenditure, and other basic demographic information. In the second section, questions related to green product consumption and consumer preferences were included. In this context, questions developed to evaluate participants' attitudes and behaviors regarding green product consumption and their consumption preferences were presented. The survey questions designed within the scope of the research were constructed based on comprehensive literature reviews on consumer behavior, with the aim of analyzing consumers' tendencies toward green products. The Ethics Committee approval was obtained from the Social and Humanities Scientific Research and Publication Ethics Committee of Kırşehir Ahi Evran University (Date: 26.12.2024 No:2024/03/04). Within the framework of the statistical analyses applied in the research, descriptive statistics, frequency tables, and graphical representations were used to summarize the data. The relationship between green product consumption status and other categorical variables, as well as its statistical significance, was tested using the Chi-Square analysis. The level of significance (Type I Error) was set at 0.05 ($p<0.05$) in the analyses. The analyses were conducted using the SPSS (Statistical Package for Social Sciences) version 29.0 statistical software.

Results and Discussion

In the results section of the research, tables and graphical representations generated from the responses to the demographic questions in the survey were first presented. Accordingly, Table 1 contains the frequency table of variables related to the demographic characteristics of consumer behavior.

Within the scope of demographic variables, expressions related to gender, marital status, educational level, employment status, place of upbringing, parental status, presence of chronic illness, household decision-making regarding grocery shopping, and preference for environmentally friendly products were included. As shown in Table 1, it was determined that 54% of the participants were male and 46% were female. It was observed that approximately half of the participants (49.2%) were single, and 41.8% were married. Regarding educational level, it was identified that 59% of the participants were university graduates, 14.5% held vocational school degrees, and 15.8% were high school graduates. The proportion of individuals with low literacy levels was found to be quite limited, remaining below 1%. When employment status was evaluated, it was determined that 33.6% of the participants were employed in the public sector, 32.4% in the private sector, and 20.7% were students. The proportion of non-working individuals was found to be 13.3%. It was observed that 35.6% of the participants were raised in city centers, followed by individuals raised in districts (21.0%), villages (17.6%), and metropolitan cities (17.0%). The findings presented in Table 1 indicate that the majority of participants were part of the active labor force and predominantly had an urban living background. It was determined that 41.1% of the participants had children, while 58.9% did not. In response to the question regarding chronic illness status, 10.2% of the individuals answered "yes," while 89.8% responded "no."

Table 1. Demographic Characteristics of Consumers

Variable		Frequency	%
Gender	Female	267	46.0
	Male	314	54.0
Marital Status	Married	243	41.8
	Single	286	49.2
	Divorced	52	6.2
	Widowed	16	2.8
Educational Status	Illiterate	3	0.5
	Literate	24	4.1
	Primary School	13	2.2
	Middle School	22	3.8
	High School	92	15.8
	Vocational School	84	14.5
	University	343	59.0
Employment Status	Not Working	77	13.3
	Public Sector	195	33.6
	Private Sector	188	32.4
	Student	121	20.7
Place of Upbringing	Village	102	17.6
	Town	50	8.6
	District	122	21.0
	City	207	35.6
	Metropolitan City	99	17.0
Parental Status	Yes	239	41.1
	No	342	58.9
Chronic Illness Status	Yes	59	10.2
	No	522	89.8
Who does the grocery shopping and decides what to buy at home?	Mother	173	29.8
	Father	95	16.4
	Myself	214	36.8
	Spouse	96	16.5
	Other	3	0.5
Do you pay attention to whether the products you buy are environmentally friendly?	Yes	445	76.6
	No	136	23.4

Table 2. Results on Green Product Consumer Behavior

Variable		Frequency	%
Do you consume green products?	Yes	510	87.8
	No	71	12.2
Since when have you been consuming green products?	Last 6 months	38	6.5
	6–12 months	48	8.3
	1–2 years	70	12.0
	More than three years	352	60.6
If you consume green products, in which season do you consume them the most?	Spring	83	14.3
	Summer	284	48.9
	Autumn	50	8.6
	Winter	93	16.0
Is there a difference between organic products and green products?	Yes	438	75.4
	No	143	24.6
How often do you consume green products?	Several times a month	122	21.0
	Several times a week	244	42.0
	When needed	90	15.5
	When discounted	32	5.5
	Several times a year	14	2.4

The answers given to the question about who makes decisions regarding food shopping at home revealed that the majority of decision-makers were the individuals themselves (36.8%) and their mothers (29.8%). These were followed by spouses (16.5%) and fathers (16.4%). Finally, it was observed that a significant majority of the participants (76.6%) stated that they prefer environmentally friendly products while shopping. Based on this finding presented in Table 1, it can be interpreted that consumers have relatively high levels of environmental awareness.

In Table 2, the results representing green product consumer behavior are presented. Accordingly, it is observed that the vast majority of participants (87.8%) consume green products, while 12.2% do not prefer such products. This finding, which constitutes the focal point of

the study, indicates that a significant portion of participants residing in the central district of Kırşehir Province generally exhibit a positive inclination toward environmentally friendly products. When the duration of green product consumption is evaluated, it has been identified that 60.6% of the participants have been consuming these products for more than three years. This is followed by individuals who have been consuming them for 1–2 years (12%), for 6–12 months (8.3%), and within the last 6 months (6.5%). The research findings indicate that environmentally conscious consumption habits have largely become an established behavior within the context of Kırşehir Province. In the evaluation regarding seasonal differences in consumption, it has been observed that nearly half of the participants (48.9%) consume green products mostly during the summer months, primarily due to increased availability; this is followed by the winter (16%), spring (14.3%), and autumn (8.6%) periods. When participant views regarding the distinction between organic and green products are evaluated, it has been determined that 75.4% distinguish between these two product categories, whereas 24.6% perceive no difference. An examination of the findings related to the frequency of green product consumption reveals that 42% of the participants consume green products several times a week; 21% consume them several times a month, 15.5% when needed, and 5.5% only during discount periods. In addition, the proportion of individuals who reported consuming green products several times a year has been found to be as low as 2.4%. The findings presented in Table 2 indicate that a majority of consumers consume these products regularly and have incorporated them into their shopping routines.

In Table 3, the results related to consumer preferences by green product categories are presented. Within this scope, a wide range of environmentally friendly product groups—including various food consumption items, cleaning and personal care products, recycled products, energy-saving products, and solar-powered devices—were evaluated. Consumers' inclinations toward these categories were measured using the options "Prefer," "Partially Prefer," and "Do Not Prefer." Frequency (%) values are presented in the table.

According to the results presented in Table 3, the most preferred green product category by consumers was identified as fresh fruits and vegetables produced without the use of chemical fertilizers and pesticides, with a rate of 74%. This category was followed by organic grains and legumes (71.6%), herbal oils and additive-free pastes (68.8%), and energy-saving products (67.6%). In line with findings in the literature, it has been determined that consumers primarily tend to make green choices in food and essential consumption areas, and that environmental sensitivity is directly associated with health (Peattie & Crane, 2005; Rana & Paul, 2017).

Table 3. Consumer Preferences by Green Product Categories

Product Category	Description	Prefer	Partially Prefer	Do Not Prefer
Fruits and Vegetables	Fresh fruits and vegetables grown without chemical fertilizers or pesticides.	430 (74)	95 (16.4)	56 (9.6)
Organic Grains and Legumes	Certified organic grains and legumes such as wheat, rice, lentils, and beans.	416 (71.6)	123 (21.2)	42 (7.2)
Dried Fruits and Vegetables	Dried and packaged fruits and vegetables without chemical additives.	383 (65.9)	143 (24.6)	55 (9.5)
Green Cleaning Products	Environmentally friendly cleaning products with biodegradable ingredients.	322 (55.4)	184 (31.7)	75 (12.9)
Natural Beauty and Skincare Products	Organic certified, chemical-free products such as soap, shampoo, and cream.	324 (55.8)	176 (30.3)	81 (13.9)
Herbal Beverages	Environmentally friendly beverages such as organic tea, coffee, and herbal infusions.	335 (57.7)	180 (31)	66 (11.4)
Green Snacks	Organic and natural snacks such as nuts, crackers, and bars.	311 (53.5)	197 (33.9)	73 (12.6)
Green Baby Products	Organic baby foods, chemical-free diapers, and baby care products.	335 (57.7)	146 (25.1)	100 (17.2)
Herbal Oils and Pastes	Additive-free food products such as cold-pressed organic olive oil and tomato paste.	400 (68.8)	145 (25)	36 (6.2)
Recycled Paper Products	Paper, napkins, and towels made from recycled materials.	317 (54.6)	179 (30.8)	85 (14.6)
Energy-Saving Products	Environmentally friendly energy products such as bulbs, sockets, and thermostats.	393 (67.6)	143 (24.6)	45 (7.7)
Eco-Friendly White Goods	White goods such as washing machines and refrigerators with low energy and water consumption.	390 (67.1)	154 (26.5)	37 (6.4)
Electric or Hybrid Vehicles	Environmentally friendly vehicles with fuel efficiency and low carbon emissions.	303 (52.2)	191 (32.9)	87 (15)
Organic or Recycled Clothing	Clothes and accessories made from organic cotton or recycled materials.	270 (46.5)	197 (33.9)	114 (19.6)
Solar-Powered Products	Solar-powered chargers, lamps, and other small electronic products.	337 (58)	180 (31)	64 (11)

Positive consumer preferences were also observed in household and personal care-oriented product groups such as green cleaning products (55.4%), natural beauty and skincare products (55.8%), and recycled paper products (54.6%). This finding indicates that the preference for environmentally friendly products with non-harmful ingredients is not limited to food, but can also extend to hygiene and personal care habits. Preferences for higher-cost or symbolically environmentally friendly products, such as electric or hybrid vehicles (52.2%) and organic/recycled clothing items (46.5%), were found to be relatively lower compared to other green product categories. Consistent with studies in the literature, the findings of this study align with statements regarding "the price disadvantage and perceived accessibility difficulty" of green products (Gupta & Ogden, 2009; Gleim et al., 2013). Additionally, the relatively high selection of the "Partially Prefer" option in non-food product categories that are not dependent on a specific season (e.g., green snacks 33.9%, organic clothing products 33.9%, solar-powered products 31%) may indicate that consumers are interested in these product groups but have not yet developed a regular consumption habit. Furthermore, purchasing behavior may have been negatively affected by factors such as limited accessibility and high prices. It has been stated by 75.4% of consumers that there is a distinction between organic products and green products (Table 2); however, the fact that these two concepts are considered intertwined in some category's points to the presence of conceptual ambiguity among consumers. In the literature, this situation is referred to as "green confusion," and it has been suggested that consumer awareness can be enhanced through clear information and labeling strategies (Chen & Chang, 2013).

The findings obtained within the scope of this study indicate that consumers generally exhibit a high inclination toward environmentally friendly products. It has been observed that especially in food and essential consumption product categories, environmentally conscious approaches are adopted more prominently. In contrast, it has been determined that a more limited attitude is displayed regarding green preferences in sectors such as technology, textiles, and automotive. Based on the evaluations made, this situation is thought to be related primarily to structural factors such as socio-economic conditions, the demographic structure of the city, and infrastructure opportunities. At this point, it can be stated that developmental efforts related to pricing, as well as information and accessibility policies, would make positive contributions to the widespread adoption of environmentally friendly products.

In Table 4, the results of the Chi-Square test conducted to examine the relationship between green product consumption status and various demographic variables are presented. The Chi-Square analysis is particularly used to test whether there is independence between two categorical variables. Within the scope of the present study, Chi-Square analyses were conducted to test the research hypothesis: "There is no statistically significant relationship between consumers' sociodemographic characteristics and green product consumption; these two variables are independent of each other." As can be seen in Table 4 and Figure 1(a), no statistically significant relationship was identified between the variable of gender and green product consumption; however, a value very close to the 5% Types I error level was calculated (χ^2=3.759; p=0.053). It was observed that 47.5% of female participants consumed green products, whereas this rate was 52.5% among male participants. The findings obtained in this study partially overlap with the results in the literature, which suggest that women tend to demonstrate sensitivity toward environmentally conscious behaviors and sustainable consumption (Çabuk et al., 2008; Lee, 2009; Yetkin & Güzel, 2020). A statistically significant relationship was identified between marital status and green product consumption (χ^2=13.344; p=0.004). It was determined that 43.9% of married individuals consumed green products, while this rate was 48.2% for single individuals, 5.1% for divorced individuals, and 2.7% for widowed individuals. The joint distribution of green product consumption and educational status is presented in Figure 1(b). A statistically significant relationship was found between the variable of educational status and green product consumption (χ^2=21.559; p=0.001). Among the participants, 60.8% of university graduates reported consuming green products, and this rate was observed to be considerably higher compared to other educational groups. The findings obtained are consistent with the results of studies in the literature that report a positive relationship between higher levels of education and environmental awareness and sustainable lifestyle consciousness (Çabuk et al., 2008; Şahin et al., 2016; Ilgar & Köprülü, 2021; Kaytancı, 2023; Çetinkaya & Özceylan, 2024).

Figure 1. Graphical Representation of the Relationship Between Green Product Consumption and Selected Demographic Variables: a- Gender, b- Educational Status, c- Chronic Illness Status, d- Attention to the Eco-Friendliness of Purchased Products.

A statistically significant relationship was found between the presence of chronic illness and green product consumption (χ^2=4.035; p=0.045). As shown in Figure 1(c), 16.9% of individuals with a chronic illness reported that they did not consume green products, whereas this rate was below 10% among individuals without such conditions. The results obtained reveal that individual characteristics such as health status may be among the important variables influencing green product preferences. According to the findings presented in Table 4, no statistically significant relationship was identified between the participants' place of upbringing and their green product consumption status (χ^2=10.596; p=0.06). Upon examining the findings, it has been observed that 25.4% of individuals who were raised in villages declared that they did not consume green products. This rate is noteworthy when compared to individuals who were raised in more urbanized locations such as cities (28.2%) and metropolitan areas (22.5%). Within the context of the factors influencing this preference, it has been suggested that limited access to natural products, high costs, and the perception of the "green product" concept as a commercialized and marketing-driven phenomenon may be among the underlying reasons. Variables such as parental status, decision-maker in household shopping, employment status, perception of the distinction between organic and green products, and perception of adequacy of promotion related to green products were not found to have a statistically significant relationship with green product consumption ($p > 0.05$).

Table 4. Relationship Between Green Product Consumption and Demographic Variables

Variable		Do You Consume Green Products?				x^2
		Yes		No		
Gender	Female	242	47.50%	25	35.20%	x^2=3.759 (df:1, p:0.053)
	Male	268	52.50%	46	64.80%	
	Total	510	100.00%	71	100.00%	
Marital Status	Married	224	43.90%	19	26.80%	x^2:13.344** (df:3, p:0.004)
	Single	246	48.20%	40	56.30%	
	Divorced	26	5.10%	10	14.10%	
	Widowed	14	2.70%	2	2.80%	
	Total	510	100.00%	71	100.00%	
Educational Status	Illiterate	1	0.20%	2	2.80%	x^2:21.559** (df:6, p:0.001)
	Literate	20	3.90%	4	5.60%	
	Primary School	12	2.40%	1	1.40%	
	Middle School	20	3.90%	2	2.80%	
	High School	71	13.90%	21	29.60%	
	Vocational School	76	14.90%	8	11.30%	
	University	310	60.80%	33	46.50%	
	Total	510	100.00%	71	100.00%	
Chronic Illness Status	Yes	47	9.20%	12	16.90%	x^2:4.035* (df:1, p:0.045)
	No	463	90.80%	59	83.10%	
	Total	510	100.00%	71	100.00%	
Place of Upbringing	Village	84	16.50%	18	25.40%	x^2:10.596 (df:5, p:0.06)
	Town	49	9.60%	1	1.40%	
	District	106	20.80%	16	22.50%	
	City	187	36.70%	20	28.20%	
	Metropolitan City	84	16.50%	16	22.50%	
	Total	510	100.00%	71	100.00%	
Parental Status	Yes	213	41.80%	26	36.60%	x^2:0.681 (df:1, p:0.409)
	No	297	58.20%	45	63.40%	
	Total	510	100.00%	71	100.00%	
Who does the grocery shopping and decides what to buy at home?	Mother	145	28.40%	28	39.40%	x^2:5.422 (df:4, p:0.247)
	Father	82	16.10%	13	18.30%	
	Myself	195	38.20%	19	26.80%	
	Spouse	85	16.70%	11	15.50%	
	Other	3	0.60%	0	0.00%	
	Total	510	100.00%	71	100.00%	
Employment Status	Employment Status	64	12.50%	13	18.30%	x^2:6.646 (df:4, p:0.156)
	Not Working	179	35.10%	16	22.50%	
	Public Sector	159	31.20%	29	40.80%	
	Private Sector	108	21.20%	13	18.30%	
	Student	510	100.00%	71	100.00%	
Do you pay attention to whether the products you buy are eco- friendly?	Yes	403	79.00%	42	59.20%	x^2:13.717** (df:1, p:0.001)
	No	107	21.00%	29	40.80%	
	Total	510	100.00%	71	100.00%	
Is there a difference between organic and green products?	Yes	387	75.90%	51	71.80%	x^2:0.551 (df:1, p:0.458)
	No	123	24.10%	20	28.20%	
	Total	510	100.00%	71	100.00%	
Do you think enough promotion is done about green products?	Yes	67	13.10%	9	12.70%	x^2:0.018 (df:2, p:0.991)
	No	288	56.50%	40	56.30%	
	Partially	155	30.40%	22	31.00%	
	Total	510	100.00%	71	100.00%	

** $p < 0.01$ indicates statistically significant at the 0.01 level, *$p < 0.05$ indicates statistically significant at the 0.05 level.

This situation suggests that these variables may not have a direct effect on green product consumption or that their effects may emerge through indirect pathways. On the other hand, a statistically significant relationship was found between the question "Do you pay attention to whether the products you buy are environmentally friendly?" and green product consumption (χ^2=13.717; p=0.001). As shown in Figure 1(d), 79% of individuals who reported being sensitive to environmentally friendly product preferences stated that they consumed green products. The findings of this study, which demonstrate that individual environmental awareness levels strongly influence sustainable consumption behaviors, are consistent with the results of previous research in the literature (Kaufmann et al., 2012; Yapraklı & Küçükoğlu, 2021; Bulut, 2022; Yılmaz & Aytekin, 2023).

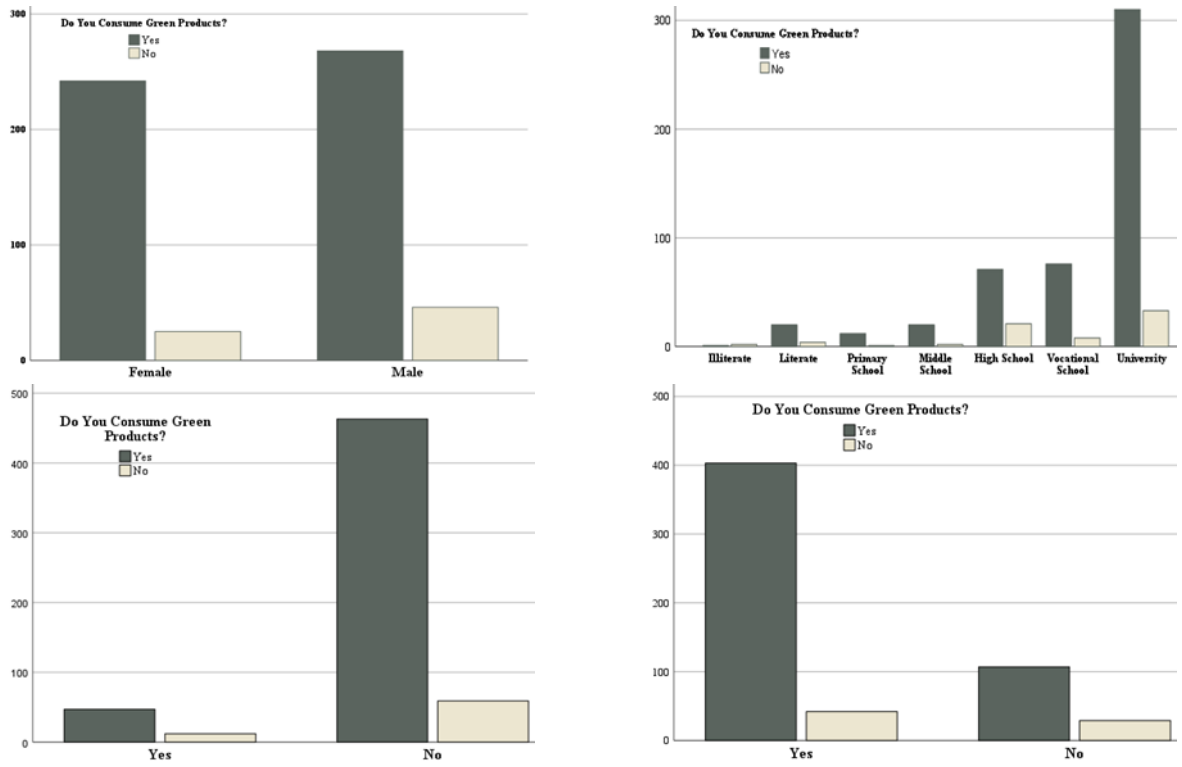

Figure 1. Graphical Representation of the Relationship Between Green Product Consumption and Selected Demographic Variables: a- Gender, b- Educational Status, c- Chronic Illness Status, d- Attention to the Eco-Friendliness of Purchased Products

Table 5. The Relationship Between Green Product Consumption and Sources of Information on Green Products

Where do you obtain information about green products?		Do You Consume Green Products? Yes		Yes		x^2
Internet	No	109	21.40%	15	21.10%	x^2:0.002 (df:1, p:0,962)
	Yes	401	78.60%	56	78.90%	
	Total	510	100.00%	71	100.00%	
TV	No	261	51.20%	33	46.50%	x^2:0.550 (df:1, p:0,458)
	Yes	249	48.80%	38	53.50%	
	Total	510	100.00%	71	100.00%	
Magazine/Newspaper	No	380	74.50%	46	64.80%	x^2:3.011 (df:1, p:0,083)
	Yes	130	25.50%	25	35.20%	
	Total	510	100.00%	71	100.00%	
Sales Personnel	No	476	93.30%	67	94.40%	x^2:0.109 (df:1, p:0,742)
	Yes	34	6.70%	4	5.60%	
	Total	510	100.00%	71	100.00%	
Recommendations	No	267	52.40%	39	54.90%	x^2:0.166 (df:1, p:0,684)
	Yes	243	47.60%	32	45.10%	
	Total	510	100.00%	71	100.00%	

** $p < 0.01$ indicates statistically significant at the 0.01 level, *$p < 0.05$ indicates statistically significant at the 0.05 level

In Table 5, the results of the Chi-Square test conducted to evaluate the relationship between the sources from which participants obtained information about green products and their green product consumption status are presented. Within the scope of the research, the information sources assessed included the internet, television, print media, sales personnel, and environmental recommendations. For each source, the statistical relationships with participants' green product consumption were analyzed using the Chi-Square test. Upon examination of the research findings presented in Table 5, it has been observed that no statistically significant relationship was found between any information source and green product consumption ($p > 0.05$). Accordingly, it is understood that green product consumption behavior does not differ depending on the source of information, indicating that the tendency to consume remains at similar levels regardless of the source from which the information is obtained. The internet has been identified as one of the most frequently used sources of information by participants, with 78.6% of individuals who reported consuming green products stating that they obtained their

information via the internet. Nevertheless, no statistically significant relationship was found between this variable and green product consumption (χ^2=0.002; p=0.962).

The research findings suggest that despite the widespread use of the internet as a source of information, its capacity to directly influence consumer behavior may be limited.

In the literature, consistent with the findings of this study, it has been explained that, within the abundance of digital information, consumers may be exposed to information while cognitive-social barriers may still hinder behavioral transformation (Vermeir & Verbeke, 2006; Biswas & Roy, 2015; Urkut & Cengiz, 2021). No statistically significant relationship was found between television as a source of information on green products and green product consumption (χ^2=0.550; p=0.458). Similarly, no statistically significant relationship was identified between recommendations as a source of information and green product consumption (χ^2=0.166; p=0.684). These findings regarding traditional and socially-based sources of information, consistent with studies in the literature, may indicate that green product awareness is shaped by more complex variables such as individual value systems, environmental sensitivity, and perceptions of health (Thøgersen, 2006).

The relationship between obtaining information through magazines/newspapers and green product consumption was found to be statistically insignificant (χ^2=3.011; p=0.083). The rate of green product consumption among participants who identified magazines and newspapers as a source of information (25.5%) was lower than that among those who did not consume green products (35.2%). It was determined that sales personnel were the least consulted source of information. No significant relationship was found between this source of information and green product consumption (χ^2=0.109; p=0.742). According to the findings obtained, it may be inferred that sales personnel are generally not perceived as reliable sources of information or are regarded by consumers as passive sources. The findings of this study are consistent with the results of other studies in the literature concerning the perception of green trust (Chen, 2009; Leonidou et al., 2011). Based on the findings presented in Table 5, it can be stated that consumers may tend to consume green products regardless of the source of information; however, this tendency appears to be more strongly associated with individual environmental awareness and intrinsic motivation. In this context, in addition to the nature of the information source, the way it addresses the consumer, the level of trust it inspires, and the alignment of values are considered to be highly important.

Conclusion

In this study, the demographic and attitudinal factors affecting green product consumption preferences of consumers residing in the central district of Kırşehir Province were analyzed. The findings regarding the micro-level evaluation of sustainable consumption behaviors indicate that the vast majority of consumers (87.8%) consume green products and possess a general level of awareness regarding environmentally friendly products. It has been identified that individuals who are university graduates, pay attention to the environmental friendliness of shopping products, and are part of the active labor force tend to consume green products at higher levels. The Chi-Square analyses conducted within the scope of the research revealed that statistically significant relationships exist between green product consumption and certain variables such as marital status, educational level, chronic illness status, and preference for environmentally friendly products. The results of the study demonstrate that green consumption behavior is shaped not only by individual tendencies but also by socio-demographic factors. On the other hand, no significant relationship was found between sources of information (internet, television, print publications, etc.) and green product consumption. Based on the research findings, it can be inferred that a cognitive gap exists between information acquisition and green product consumption behavior. In other words, it has been determined that there may be instances in which individuals gain access to information but do not translate it into green product consumption behavior. The present study was conducted as a field survey at the local level and has revealed the social variations in green consumption behavior through concrete data. It is known that original empirical data on sustainable consumption products are limited, especially in developing and less metropolitan regions. Furthermore, in this study, differences in preferences related to non-food product categories in green product consumption were also examined in detail. However, the research was limited to the central district of Kırşehir Province, which restricts the generalizability of the results. It was encountered that the definitions of green products were not perceived consistently by participants. Indeed, in some cases, perceived differences between the concepts of “organic product” and “green product” have been observed to cause conceptual ambiguity in consumer statements. In future studies, it is recommended that comparative analyses of different regional and urban profiles be conducted, and that psychological and cultural variables affecting green product consumption be examined in greater depth. It is also suggested that businesses develop integrated communication and labeling strategies not only to provide information to consumers but also to guide behavior, in order to contribute positively to sustainable consumption processes. In this study, empirical evidence with guiding characteristics has been provided for both policymakers and producer firms in line with the goals of sustainable development. The results obtained offer contributions capable of guiding marketing and policy development initiatives on a sectoral basis.

Declarations

Ethical Approval Certificate

The Ethics Committee approval was obtained from the Social and Humanities Scientific Research and Publication Ethics Committee of Kırşehir Ahi Evran University (Date: 26.12.2024 No:2024/03/04).

Author Contribution Statement

Concept –M.K. A.A. MÖ.; Design – M.K. A.A.; Supervision – M.K. A.A.; Resources – M.Ö. M.K. A.A.; Data Collection and/or Processing – M.Ö.; Analysis and/or

Interpretation – M.Ö. A.A.; Literature Search – M.Ö. A.A.M.K; Writing Manuscript – M.Ö. M.K. A.A.; Critical Review – M.K. A.A. M.Ö.

Fund Statement

The authors declared that this study has received no financial support.

Conflict of Interest

The authors declare that there is no conflict of interest.

Acknowledgments

This study is derived from the master's thesis titled "Investigation of Factors Affecting Consumers' Green Product Purchase Behavior with Artificial Neural Networks: The Case of Kirşehir Province", completed and accepted by Mehmet ÖNCÜ at Kırşehir Ahi Evran University, Graduate School of Science, Department of Agricultural Economics.

References

Baydaş, A., & Berdibek, U. (2020). Yeşil ürün satın alma davranışı ile dini değerlerin ilişkilendirilmesi: Bingöl ili örneği. *Kahramanmaraş Sütçü İmam Üniversitesi Sosyal Bilimler Dergisi*, *17*(2), 922–943. https://doi.org/10.33437/ksusbd.606222

Biswas, A., & Roy, M. (2015). Green products: An exploratory study on the consumer behaviour in emerging economies of the East. *Journal of Cleaner Production*, *87*(1), 463–468. https://doi.org/10.1016/j.jclepro.2014.09.075

Bozpolat, C. (2021). Çevresel kaygının ve algılanan pazar etkisinin yeşil ürün satın alma davranışındaki rolü. *KAÜİİBFD – Kafkas Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, *12*(24), 702–727. https://doi.org/10.36543/kauiibfd.2021.029

Bulut, M. (2022). Öğretmenlerin yeşil örgütsel davranışlarının sürdürülebilir tüketim davranışı üzerine etkisi. *Bandırma Onyedi Eylül Üniversitesi Sosyal Bilimler Araştırmaları Dergisi*, *5*(1), 27–49. https://doi.org/10.38120/banusad.1114078

Chen, Y.-S. (2009). The drivers of green brand equity: green brand image, green satisfaction, and green trust. *Journal of Business Ethics, 93*(3), 307–319. https://doi.org/10.1007/s10551-009-0223-9.

Chen, Y.-S., & Chang, C.-H. (2013). Towards green trust: The influences of green perceived quality, green perceived risk, and green satisfaction. *Management Decision, 51*(1), 63–82. https://doi.org/10.1108/00251741311291319.

Chen, T. B., & Chai, L. T. (2010). Attitude towards the environment and green products: Consumers' perspective. *Management Science and Engineering, 4*(2), 27–39.

Çabuk, S., Nakıboğlu, B., & Keleş, C. (2008). Tüketicilerin yeşil (ürün) satın alma davranışlarının sosyo-demografik değişkenler açısından incelenmesi. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 17*(1), 85–102.

Çerasi, C., Balcıoğlu, Y., Huseynov, F., & Kılıç, A. (2024). Sosyal medyanın tüketicilerin yeşil tüketim algısı üzerindeki etkisini anlamak için kapsamlı bir metin madenciliği uygulaması. *Bilim ve Bilgiye Multidisipliner Dergi, 17*(1), 28–37. https://doi.org/10.54525/bbmd.1454422.

Çetinkaya, C., & Özceylan, E. (2017). Üniversite öğrencilerinin yeşil satın alma tutumlarının incelenmesine yönelik bir araştırma: Gaziantep Üniversitesi örneği. *Gaziantep University Journal of Social Sciences, 16*(1), 289–302. https://doi.org/10.21547/jss.273091.

Dangelico, R. M., & Vocalelli, D. (2017). "Green Marketing": An analysis of definitions, strategy steps, and tools through a systematic review of the literature. *Journal of Cleaner Production, 165*, 1263–1279. https://doi.org/10.1016/j.jclepro.2017.07.184.

Dong, F., & Fuller, F. (2010). Dietary structural change in China's cities: Empirical fact or urban legend? *Canadian Journal of Agricultural Economics / Revue canadienne d'agroeconomie, 58*(1), 73–91. https://doi.org/10.1111/j.1744-7976.2009.01159.x.

D'Souza, C., Taghian, M., & Lamb, P. (2006). An empirical study on the influence of environmental labels on consumers. *Corporate Communications: An International Journal, 11*(2), 162–173.

Gleim, M. R., Smith, J. S., Andrews, D., & Cronin, J. J., Jr. (2013). Against the green: A multi-method examination of the barriers to green consumption. *Journal of Retailing, 89*(1), 44–61. https://doi.org/10.1016/j.jretai.2012.10.001.

Gupta, S., & Ogden, D. T. (2009). To buy or not to buy? A social dilemma perspective on green buying. *Journal of Consumer Marketing, 26*(6), 376–391. https://doi.org/10.1108/07363760910988201.

Ilgar, D., & Köprülü, O. (2023). Tüketicilerin yeşil pazarlama uygulamalarına yönelik tutum ve davranışları: Silifke örneği. *Fiscaoeconomia, 7*(1), 136–160. https://doi.org/10.25295/fsecon.1120388.

Joshi, Y., & Rahman, Z. (2015). Factors affecting green purchase behaviour and future research directions. *International Strategic Management Review, 3*(1–2), 128–143. https://doi.org/10.1016/j.ism.2015.04.001.

Karaman, D. (2021). Yeşil pazarlama bilgi düzeyi ve yaşam tatmininin yeşil ürün satın alma davranışına etkisi: Kuşaklararası bir araştırma. *Erciyes Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi* (58), 155–176.

Kaya, M., & Demirtaş, M. C. (2023). Yeşil tüketime yönelik tüketici eğilimlerinin belirlenmesi: Z kuşağı üzerine bir araştırma. *Pazarlama İçgörüsü Üzerine Çalışmalar, 7*(1), 86–102.

Kaytancı, M., & Çuhadar, M. (2023). Tüketicilerin yeşil ürün satın alma davranışlarında etkili olan faktörlerin belirlenmesi. *Türk Tarım ve Doğa Bilimleri Dergisi, 10*(4), 1129–1136.

Kaufmann, H. R., Panni, M. F. A. K., & Orphanidou, Y. (2012). Factors affecting consumers' green purchasing behavior: An integrated conceptual framework. *Amfiteatru Economic Journal, 14*(31), 50–69.

Korkmaz, M., Atay, L., & Yıldırım, H. M. (2017). Yeşil ürün satın alma davranışı, kişilerarası etkilenme eğilimi ve sosyal etki arasındaki ilişki: Üniversite öğrencileri üzerine bir araştırma. *Seyahat ve Otel İşletmeciliği Dergisi, 14*(3), 40–52.

Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing, 18*(6), 503–520.

Lee, K. (2009). Gender differences in Hong Kong adolescent consumers' green purchasing behavior. *Journal of Consumer Marketing, 26*(2), 87–96.

Leonidou, L. C., Leonidou, C. N., Palihawadana, D., & Hultman, M. (2011). Evaluating the green advertising practices of international firms: A trend analysis. *International Marketing Review, 28*(1), 6–33.

Mosavichechaklou, S., & Bozbay, Z. (2018). Türk ve İranlı tüketicilerin yeşil satın alma davranış öncüllerinin belirlenmesi. *İşletme Araştırmaları Dergisi, 10*(4), 25–45.

Mostafa, M. M. (2007). Gender differences in Egyptian consumers' green purchase behaviour: The effects of environmental knowledge, concern and attitude. *International Journal of Consumer Studies, 31*(3), 220–229.

Onurlubaş, E. (2016). Factors that affect green product purchasing behaviors of consumers. *Yalova Sosyal Bilimler Dergisi, 6*(1), 70–106.

Ottman, J. (2017). *The new rules of green marketing: Strategies, tools, and inspiration for sustainable branding*. Routledge.

Özsaçmacı, B. (2018). Yeşil pazarlama faaliyetlerinin yeşil marka farkındalığı ve tüketici satın alma niyeti üzerindeki aracılık etkisi. *Business and Economics Research Journal, 9*(4), 945–960.

Özsaçmacı, B., & Özdemir, H. (2020). Çevre dostu ambalajlı ürün özelliklerinin tüketici tutum ve satın alma niyetine etkisi. *İşletme Araştırmaları Dergisi, 12*(3), 2682–2701.

Peattie, K. (2001). Golden goose or wild goose? The hunt for the green consumer. *Business Strategy and the Environment, 10*(4), 187–199.

Peattie, K., & Crane, A. (2005). Green marketing: Legend, myth, farce or prophecy? *Qualitative Market Research: An International Journal, 8*(4), 357–370.

Rana, J., & Paul, J. (2017). Consumer behavior and purchase intention for organic food: A review and research agenda. *Journal of Retailing and Consumer Services, 38*, 157–165.

Singh, P. B., & Pandey, K. K. (2012). Green marketing: Policies and practices for sustainable development. Integral Review, 5(1), 22–30.

Şahin, A., Meral, H., & Aytop, Y. (2016). Yeşil pazarlamada tüketici algısı: Kahramanmaraş kent merkezi örneği. Anadolu Tarım Bilimleri Dergisi, 31(1), 60–71. https://doi.org/10.7161/anajas.2016.31.1.60-71.

Tait, P., Saunders, C., Guenther, M., & Rutherford, P. (2016). Emerging versus developed economy consumer willingness to pay for environmentally sustainable food production: A choice experiment approach comparing Indian, Chinese and United Kingdom lamb consumers. Journal of Cleaner Production, 124, 65–72.

Thøgersen, J., & Ölander, F. (2002). Human values and the emergence of a sustainable consumption pattern: A panel study. Journal of Economic Psychology, 23(5), 605–630.

Tilikidou, I. (2007). The effects of knowledge and attitudes upon Greeks' pro-environmental purchasing behaviour. Corporate Social Responsibility and Environmental Management, 14(3), 121–134.

Urkut, S., & Cengiz, E. (2021). Yeşil pazarlamanın tüketicilerin çevre dostu kozmetik ürünleri satın alma niyetine etkisi. Journal of Research in Business, 6(2), 470–492.

Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: Exploring the consumer "attitude–behavioral intention" gap. Journal of Agricultural and Environmental Ethics, 19, 169–194.

Villi, B., & Bahar, R. (2023). Cruelty-free etiketli kozmetik markalarının sosyal medya hesaplarının incelenmesine yönelik bir içerik analizi. Uluslararası İktisadi ve İdari İncelemeler Dergisi (C-iasoS 2022 Özel Sayısı), 219–233. https://doi.org/10.18092/ulikidince.1220000.

Yadav, R., & Pathak, G. S. (2016). Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior. Journal of Cleaner Production, 135, 732–739.

Yamane, T. (2010). Temel Örnekleme Yöntemleri (Çev: Esin, A., Bakır, M.A. Aydın, C., Gürbüzsel, E.). Literatür Yayıncılık-Akademik Kitaplar.

Yapraklı, T. Ş., & Küçükoğlu, U. (2021). Yeşil ürün satın alma davranışları ve ambalaja ilişkin tutumun çevreye karşı tutum üzerindeki etkileri. Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 25(1), 143–158.

Yemez, İ., & Akca, T. D. (2024). Yaşam tarzının sürdürülebilir ürün satın alma niyeti ve sürdürülebilir tüketim davranışı üzerindeki etkisinin incelenmesi. Alanya Akademik Bakış, 8(1), 282–299.

Yetkin, M., & Güzel, Ö. (2020). Yeşil tüketim tutumlarında ülkelerin ekonomik gelişmişlik düzeyinin rolü: Yeşil oteller üzerinde bir uygulama. Journal of Economy Culture and Society(62), 167–183.

Yıldız, O., & Kelleci, A. (2022). Z kuşağının sürdürülebilir tüketim davranışını etkileyen faktörlere yönelik keşifsel bir araştırma. *Business and Management Studies: An International Journal, 10*(4), 1474–1491. https://doi.org/10.15295/bmij.v10i4.2134.

Yılmaz, M., & Aytekin, R. (2020). Genişletilmiş değer-tutum-davranış modeli bağlamında yeşil ürün satın alma davranışının incelenmesi. Hitit Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 13(2), 439–465. https://doi.org/10.17218/hititsosbil.786220.

Yürük-Kayapınar, P., Kayapınar, Ö., & Ergan, S. (2019). Tüketicilerin yeşil ürün satın alma davranışlarının kuşaklar bakımından incelenmesi. Opus Uluslararası Toplum Araştırmaları Dergisi. https://doi.org/10.26466/opus.565155.