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CONSUMER AWARENESS, PERCEPTIONS AND PURCHASING PREFERENCES TOWARD GREEN PRODUCTS: EVIDENCE FROM KAHRAMANMARAŞ, TÜRKİYE

YEŞİL ÜRÜNLERE YÖNELİK TÜKETİCİ FARKINDALIĞI, ALGILARI VE SATIN ALMA TERCİHLERİ: KAHRAMANMARAŞ, TÜRKİYE ÖRNEĞİ

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Abstract

The aim of this research is to determine the level of awareness, knowledge, attitudes and purchasing behavior of consumers concerning green products in Kahramanmaraş, Turkey. Data were collected through face-to-face surveys applied to 270 consumers living in the center of Kahramanmaraş Province. Consumer perception and behavior towards green products was analyzed through descriptive statistics, chi-square analysis and Likert scale evaluations. Results showed that health, safety and quality related attributes were mainly considered by consumers in their purchase of products, while environmental friendliness was regarded as secondary but yet relevant. Although consumers generally associated green products with environmental protection and health benefits, the awareness and familiarity of the green product concept were still low. Education level was significantly related to correctly identifying the definition of green products, suggesting that education plays a role in developing environmental consciousness. Results also indicated that green product consumption significantly differs by gender, age, household size, income level and education level. Consumers had a generally positive attitude toward green labels, but the frequency of purchasing green-labelled products was still relatively low. Further many respondents found the information on product labels insufficient and relied mainly on familiar brands, trusted sellers and product ingredients in identifying green products. Overall, the findings suggest that lack of awareness is still one of the major barriers to a wider adoption of green products. Better consumer confidence and sustainable consumption may result from environmental education enhancement, public awareness raising and eco-labeling system strengthening.

Keywords: Green products, consumer awareness, green purchasing behavior, eco-labels,

Özet

Bu araştırmanın amacı, Türkiye'nin Kahramanmaraş ilindeki tüketicilerin yeşil ürünlere ilişkin farkındalık, bilgi düzeyi, tutumları ve satın alma davranışlarını belirlemektir. Araştırmanın verileri, Kahramanmaraş il merkezinde yaşayan 270 tüketici ile yüz yüze gerçekleştirilen anketlerden elde edilmiştir. Tüketicilerin yeşil ürünlere yönelik algı ve davranışları tanımlayıcı istatistikler, ki-kare analizi ve Likert ölçeği değerlendirmeleri kullanılarak analiz edilmiştir. Araştırma sonuçları, tüketicilerin ürün satın alırken öncelikli olarak sağlık, güvenlik ve kalite ile ilgili özellikleri dikkate aldıklarını, çevre dostu olma özelliğinin ise ikincil düzeyde ancak yine de önemli bir kriter olarak

değerlendirildiğini göstermiştir. Tüketiciler genel olarak yeşil ürünleri çevrenin korunması ve sağlık yararları ile ilişkilendirmelerine rağmen, yeşil ürün kavramına ilişkin farkındalık ve bilgi düzeylerinin hâlen düşük olduğu belirlenmiştir. Eğitim düzeyinin, yeşil ürün tanımını doğru bilme durumu ile anlamlı bir ilişki gösterdiği ve eğitimin çevresel bilinç gelişiminde önemli bir rol oynadığı saptanmıştır. Araştırma bulguları ayrıca yeşil ürün tüketiminin cinsiyet, yaş, hane halkı büyüklüğü, gelir düzeyi ve eğitim düzeyine göre anlamlı farklılıklar gösterdiğini ortaya koymuştur. Tüketiciler yeşil etiketlere karşı genel olarak olumlu bir tutum sergilemekle birlikte, yeşil etiketli ürün satın alma sıklığının nispeten düşük olduğu belirlenmiştir. Bunun yanında, katılımcıların önemli bir kısmı ürün etiketlerinde yer alan bilgileri yetersiz bulmakta ve yeşil ürünleri belirlerken daha çok tanıdıkları markalara, güvendikleri satıcılara ve ürün içeriklerine başvurmaktadır. Genel olarak sonuçlar, farkındalık eksikliğinin yeşil ürünlerin daha yaygın benimsenmesinin önündeki temel engellerden biri olduğunu göstermektedir. Çevre eğitiminin geliştirilmesi, toplumsal farkındalığın artırılması ve eko-etiketleme sistemlerinin güçlendirilmesi, tüketici güveninin ve sürdürülebilir tüketim davranışlarının artırılmasına katkı sağlayabilir.

Anahtar kelimeler: Yeşil ürün, tüketici farkındalığı, yeşil tüketim davranışı, eko-etiket.

1. INTRODUCTION

Environmental problems such as climate change, loss of biodiversity, depletion of resources and increasing levels of pollution have become major global issues in recent decades. These challenges have increased public consciousness of environmental sustainability and motivated consumers to think about the environmental impact of their purchasing decisions (Mahmoud et al., 2022; Zameer and Yasmeen, 2022; Balaskas et al., 2023; Lopes et al., 2024). This has resulted in increasing attention on sustainable consumption habits and environmentally friendly products (Zencir and Korkmaz, 2024; De et al., 2025; Ying et al., 2025).

Green products have become an integral part of sustainable consuming (Megha, 2024; Pathak et al., 2024). Different studies have provided various definitions of green products; however, they are typically defined as products that reduce negative environmental impact during their life cycle, including manufacturing, distribution, usage, and disposal (Kiyak and Grigoliene, 2023; Kerber et al., 2024; Orji et al., 2025). Green products are projected to use fewer natural resources, produce less waste, and encourage environmental preservation in comparison with traditional products (Ghazali et al., 2023; Prakash et al., 2024; Falkenberg, 2026). Thus, promoting green products is considered an important strategy in achieving sustainable development goals and reducing environmental degradation (Cheng et al., 2023; Inparaj and Withanaarachchi, 2024; Merabet, and Bouhabel, 2025).

The success of green products depends very much on consumer demand. However, the willingness of consumers to purchase environmentally friendly products is not only determined by the availability of products but also by their awareness, knowledge and perceptions of environmental issues (Zaidi et al., 2022; Huang, 2023; Puspitasari and Sekarsari, 2024; Janska et al., 2025). Consumers who are aware of green products and their environmental benefits are more likely to develop positive attitudes toward sustainable consumption (Apostolopoulos et al., 2025; Setiawan et al., 2025). Conversely, the lack of knowledge and awareness may hinder consumers from identifying eco-friendly products and decrease the possibility of their purchase (Pekerşen and Canöz, 2022; Sureshbabu and Visvanathan, 2025).

Another important factor that influences green product consumption is the availability of reliable information (Nittala and Moturu, 2023; Ibeama et al., 2024). To help consumers identify environmentally friendly products and make informed purchasing decisions, eco-labels and environmental certifications have been established (Hossain et al., 2022; Bartáková et al., 2024; Nagar and Verma, 2025). Yet, past studies have indicated that most consumers are poorly informed

about eco-labels and often have difficulty distinguishing between genuine green products and ordinary products (Yoruk et al., 2024; Nagar and Verma, 2025; Zai and Meiliana, 2026). Therefore, understanding the consumer awareness and perception of green products is important for the development of effective environmental policies and marketing strategies.

Previous studies have mainly focused on the determinants of green purchase behavior such as demographic characteristics (Değirmenci, 2022), environmental concern (Gökmen Şen and Darıcan, 2025), income (Tariq and Gill, 2024) and education (Değirmenci, 2022). While these studies have offered valuable insights into the factors that impact green consumption, less research has been done on consumers' awareness, knowledge and perceptions of green products especially in developing countries. Although sustainable consumption is becoming increasingly important, the empirical evidence about consumers' understanding of green products and eco-labels in Türkiye is limited.

Hence, the aim of this study is to evaluate the awareness, knowledge, attitude and purchasing behavior of consumers towards green products in Kahramanmaraş, Türkiye. In particular, the study examines consumers' understanding of the concept of green products, the factors that influence their attitudes towards green products, their perceptions of eco-labels and the socio-economic characteristics associated with green product consumption. This study contributes to the expanding literature on sustainable consumption by providing insights into the determinants of consumer preferences for green products and informs evidence-based policy and marketplace initiatives that support the transition to more sustainable consumption systems.

2. MATERIALS AND METHODS

2.1. Study Area and Data Collection

The primary data of this study were obtained through face-to-face surveys with consumers residing in the urban center of Kahramanmaraş Province, Türkiye, in 2021. The province was chosen as an area of study due to its high urban population and socio-economic diversity that allows to study consumer attitudes towards environmentally friendly products among various demographic groups.

The sample size was based on the proportional sampling method (Newbold, 1995; Miran, 2003).

$$n = \frac{Np(1-p)}{(N-1)\sigma_{p_x}^2 + p(1-p)} \quad (1)$$

Where n is the sample size, N is the population size, p is the population proportion (assumed to be 0.5), and $\sigma_{p_x}^2$ is the variance of the proportion.

The total population was divided by average household size to estimate the number of households in the central districts of Onikişubat and Dulkadiroğlu. The sample size was calculated to be 270 consumers from the population size of 171,380 households (TSI, 2021) with a confidence level of 90% and margin of error of 10%. So we selected 270 consumers randomly and conducted face to face interview.

The questionnaire had questions regarding the socio-economic characteristics of consumers, purchasing behavior, awareness and knowledge of green products, attitudes to green products, perception of eco-labels and green product consumption behavior.

2.2. Data Analysis

The survey data were analyzed using descriptive statistical methods and chi-square analysis. The socio-economic characteristics, awareness levels, attitude and purchasing preferences of consumers towards green products were summarized by calculating frequencies, percentages, means and standard deviations.

Chi-square analysis was used to test the relationships between green product consumption and the selected socio-economic variables such as gender, age, household size, income level and education level. Moreover, to analyze the relation between the level of education and the correct identification of the green product definition the chi-square test was used.

Five-point Likert scale statements were used to measure consumers' attitudes toward green products, purchasing criteria and perceptions of product information. Responses were rated on a five point scale from 1 (Not important) to 5 (Very important) and mean scores were used to assess the relative importance of each factor.

The results are presented in tables and interpreted to highlight the main factors associated with consumers' awareness, perceptions and purchasing behavior towards green products.

3. RESULTS AND DISCUSSION

3.1. Socio-economic Characteristics of Respondents

Table 1 contains the socio-economic characteristics of the respondents. The results show that the sample is predominantly middle-aged individuals. This suggests that the purchasing decisions for green products are mostly made by the consumers in their economically active years. The number of male respondents is slightly higher than female respondents and most of the respondents are married. The education profile indicates that a large number of respondents have secondary or higher education, suggesting a relatively educated consumer group. In terms of income, the respondents are spread across different income groups, making it a heterogeneous sample with different purchasing power. This variation in demographic and socio-economic features increases the representativeness of the study and enables a more complete evaluation of consumer attitudes and behaviors toward green products.

Table 1. Socio-economic characteristics of respondents

Variables	Category	N	%
Age (Mean: 39.05)	≤30	76	28.2
	31-45	107	39.6
	≥46	87	32.2
Gender	Male	164	60.7
	Female	106	39.3
Marital status	Married	188	69.6
	Single	82	30.4
Education level	Primary school or below	35	13.0
	High school	85	31.5
	Associate degree	28	10.4
	Bachelor's degree	91	33.7
	Master's and PhD	31	11.4
Monthly household income ($)	≤400	83	30.8

(Mean: $672.7)	401-800	110	40.7
	≥801	77	28.5

3.2. Factors Influencing Product Purchase Decisions

Table 2 displays the factors consumers consider when buying products and the importance of product information. The results show that consumers mostly consider attributes relating to health, safety and quality when deciding on purchasing. Environmental friendliness was also considered important but apparently less so than attributes directly related to personal well-being. With respect to product labels, consumers were more interested in the information on product safety and composition than certification information, showing that awareness of certification systems is still low.

Table 2. Factors considered when purchasing products

Variables	Respons	Mean	Std. Dev.
*Factors considered when purchasing products	Cleanliness	4.90	0.35
	Healthiness	4.86	0.40
	Quality	4.73	0.64
	Free from additives	4.39	1.17
	Environmentally friendly nature	4.25	1.19
	Price	4.17	1.23
	Color	3.84	1.27
*Importance of information displayed on purchased products	Expiration date	4.84	0.45
	Ingredients	4.39	1.02
	Brand	4.08	1.10
	Nutritional value	3.96	1.27
	Shelf life	3.92	1.30
	Storage conditions	3.89	1.23
	Certification	3.34	1.40

*1.Not important 2.Slightly important 3.Moderately important 4.Important 5.Very important

3.3. Consumer Awareness and Knowledge of Green Products

Table 3 presents consumers' awareness and knowledge of green products. The findings show a low level of awareness of the green product concept although more than half of the respondents correctly identified the definition of a green product. This means that consumers have a limited knowledge of the concept of green products, but they have a general knowledge of green products.

Consumers primarily regarded green products as environmental protection, safety and the lack of harm. Positive perceptions were also found for concepts related to recyclability, reduction of waste

and efficient use of resources. Overall, these results suggest that consumers are likely to interpret green products in terms of their benefits for the environment and health.

Table 3. Consumer awareness and knowledge of green products

	Responses	N	%
Awareness of the Green Product Concept	Yes	103	38.1
	No	167	61.9
Knowledge of the Green Product Concept	Yes	85	31.5
	No	185	68.5
Correct Knowledge of the Green Product Definition	Yes	151	55.9
	No	119	44.1
	Responses	Mean	Std. Dev.
* Concepts Associated with Green Products	Eco-friendly products	3.98	1.15
	Non-harmful products	3.89	1.24
	Safe products	3.86	1.15
	Recyclable products	3.67	1.29
	Waste-free products		
	Resource-efficient products	3.54	1.33
	Green fruits and vegetables		
		3.46	1.38
		3.20	1.56

*1.Strongly disagree 2.Slightly agree 3.Moderately agree 4.Largely agree 5.Strongly agree.

3.4. Effect of Education Level on the Correct Identification of Green Product Definitions

Table 4 shows the relationship between level of education and correct identification of the green product definition. The results show a strong correlation between the educational level and the awareness of green products. The findings showed that consumers with a higher level of education were more likely to identify the definition of a green product correctly. This suggests that education is an important factor in improving environmental awareness and understanding of concepts related to sustainability. Similar findings have been reported in previous studies that higher levels of education are associated with greater environmental awareness, environmental knowledge and more environmentally responsible consumer behavior (Alan and Zakaria, 2021; Lee et al., 2024).

Table 4. Relationship between correct knowledge of the green product definition and education level

Correct Knowledge of the Green Product Definition	Education Group 1 (associate degree and below)		Education Group 2 (bachelor's degree and above)	
	N	%	N	%
Correct	64	43.2	87	71.3
Incorrect	84	56.8	35	28.7

Pearson Chi-square = 21.374, $p < 0.01$

3.5. Attitudes Toward Green Products

As shown in Table 5, green products are not yet playing a decisive role in the purchasing decisions of most consumers. However, the most important driving factors for those who prefer green products are environmental protection, environmental friendliness, health benefits and product safety. The result indicates consumers associate green products with both environmental responsibility and personal well-being. On the other hand, lack of awareness is the main barrier to green product adoption while other factors such as distrust of eco-labels, lack of trust and perceived product differences seem to have less impact. These results indicate that consumer awareness enhancement could be a possible tool for promoting green product consumption.

Table 5. Consumer motivations and barriers regarding green product purchases

	Responses	N	%
Influence of Green Products on Purchase Decisions	Yes	117	43.3
	No	153	56.7
	Responses	Mean	Std. Dev.
*Reasons for Preferring Green Products	Environmental protection	4.71	0.59
	Environmental friendliness	4.69	0.58
	Health benefits	4.65	0.65
	Product safety	4.61	0.67
	Protection of living organisms	4.38	0.96
	Mitigation of global warming	3.98	1.24
	Better taste	3.56	1.38
	Lower price	2.47	1.51
*Reasons for not Preferring Green Products	Lack of awareness	4.03	1.51
	Limited availability	2.80	1.31
	High price	2.64	1.22
	Failure to meet needs	2.48	1.14
	Lack of trust	2.31	1.09

	Distrust of eco-labels	2.30	1.06
	No perceived difference	2.25	1.18
	Preference mismatch	2.24	1.05

*1.Strongly disagree 2.Slightly agree 3.Moderately agree 4.Largely agree 5.Strongly agree.

3.6. Green Label Preferences and Purchasing Behavior

As can be seen in Table 6, green-label product purchase is still not a common practice for consumers. The results further show that many consumers believe the information on product labels is insufficient, which may signal problems of understanding or evaluating environmental claims. When trying to judge if a product is environmentally friendly consumers mostly depend on the known brand and trusted seller, product ingredients and local origin. Direct verification by companies or public institutions, on the other hand, is rather rare. These results suggest that consumers rely less on formal environmental information sources and more on personal experience and trust-based cues to make decisions about green products.

Table 6. Consumers' purchasing behavior and evaluation of green-labeled products

	Responses	N	%
Green-Labeled Product Purchase Frequency	Never purchased	173	64.1
	Purchased a few times	38	14.1
	Purchased occasionally	41	15.2
	Frequently purchased	16	5.9
	Purchase only green-labeled products	2	0.7
Adequacy of Product Label Information	Completely inadequate	156	57.8
	Very adequate	27	10.0
	Moderately adequate	65	24.1
	Fairly adequate	8	3.0
	Completely adequate	14	5.2
	Responses	Mean	Std. Dev.
*Actions taken to determine whether a product is environmentally friendly	Purchase familiar brands	4.38	0.88
	Buy from familiar sellers		
	Check product ingredients	4.31	0.96
	Consider local origin		
	Ask the seller	4.11	1.11
	Check labels and certifications		
	Contact the company	4.02	1.20
	Contact the Ministry of Health		
		3.93	1.23
		3.87	1.27
		2.06	1.34

	1.84	1.23

*1. Not important. 2. Slightly important. 3. Moderately important. 4. Important. 5. Very important.

3.7. Socio-economic Factors Associated with Green Product Consumption

Table 7 presents the association of selected socio-economic characteristics and green product consumption (No=never purchased, Yes=purchased a few times, purchased occasionally, frequently purchased, purchase only green-labeled products). The results of chi-square show that the consumption of the green product is significantly different in terms of gender, age, household size, income level and education level. Female consumers had more tendency to consume green products than male consumers. Moreover, younger and middle-aged consumers were more likely to purchase green products than older consumers.

Findings also show that consumers from smaller households, higher income groups and higher educational levels were more likely to consume green products. The highest association with green product consumption was found to be education level and then income level among the variables studied. These findings suggest that socio-economic resources and educational attainment are important determinants of environmentally responsible consumption behavior.

Table 7. Relationship between green product consumption and selected socio-economic characteristics

Variables	Green Product Consumption		
	Yes (%)	No (%)	Chi-square Test
	35.9	64.1	
Gender			
Male	31.1	69.9	4.231*
Female	43.4	56.8	
Age groups			
≤30	38.2	61.8	5.314*
31-45	42.1	57.9	
≥46	26.4	73.3	
Household Size			
1. Group ≤3 persons	41.3	58.7	7.816**
2. Group 4 persons	41.2	58.8	
3. Group ≥5 persons	23.5	76.5	
Income Groups ($)			
1. Group ≤400	22.9	77.1	9.185***
2. Group 401-800	40.0	60.0	

3. Group ≥801	44.2	55.8	
Education Level			
1. Primary and below	15.0	85.0	15.604***
2. Secondary and high school	25.0	75.0	
3. Above high school	46.0	54.0	

*$p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4. CONCLUSIONS AND RECOMMENDATIONS

This study examined the awareness, knowledge, attitudes and purchasing behavior of consumers toward green products in Kahramanmaraş, Türkiye. Results showed that health, safety and quality related attributes are the most important factors for consumers in the purchasing of products. While the environmental friendliness of a product was considered an important product characteristic, it was usually a secondary attribute to other attributes more directly related to personal well-being.

The results also indicated that consumers have a limited awareness and knowledge of green products. A large percentage of the respondents were able to correctly define a green product, but their level of familiarity with the concept was quite low. Consumers mainly associate green products with environmental protection, environmental friendliness and health-related benefits, indicating that perceptions of green products are co-determined by environmental and personal motivations.

Education was found to be a significant factor influencing both green product knowledge and green consumption behavior. Consumers who were educated at a higher level were more likely to correctly identify the meaning of a green product and consume green products as well. Similarly, green product consumption increased with the increase in income level. We also found that male consumers and consumers in larger households were less likely to consume green products.

Green labels were generally viewed favorably and thought to be influential in purchasing decisions, but the purchase frequency of green-labeled products was relatively low. Consumers also expressed concerns about the adequacy of information provided on product labels and relied mainly on familiar brands, trusted sellers and product ingredients to identify green products. This finding indicates that consumers have not yet made full use of formal certification and labelling systems.

It overall shows that the lack of awareness continues to be one of the main barriers for wider adoption of green products. Raising consumer awareness through environmental education programs, public information campaigns and more effective eco-labelling systems may help to improve consumer knowledge and to encourage sustainable consumption practices. More transparent, credible and visible environmental labels could further enhance consumer confidence in green products and contribute to the development of sustainable markets.

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