



A Causal Analysis of Consumers' Awareness Towards Eco-Friendly Green Products

Najah Hassan Salamah ^{a 1}

^a Department of Marketing, Faculty of Economics and Administration, King Abdulaziz University, Jeddah, Saudi Arabia

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Abstract

Background: The awareness of green products is a major constant that boosts the green market and guides consumers' purchasing decisions.

Objective: This study investigates the causal relationship of awareness regarding green products in Saudi Arabian consumers.

Method: A descriptive study was conducted, and data were collected from 205 participants using a closed-ended questionnaire designed after reviewing the literature of previous studies. The data gathered through the survey was analysed using a statistical package for the social sciences (SPSS), and a partial least squares structural equation modelling (PLS-SEM) technique was used to verify the constructed model in two steps: first, to evaluate the reliability and validity of the measured model, and second, to evaluate the predictive. All items were appropriately loaded to particular constructs. Factor loadings were examined to assess construct validity, with acceptable loadings higher than 0.60.

Results: The study's results provided that marketing and loyalty have statistically significant and positive influences on awareness of green products. However, pricing has a positive but statistically insignificant impact on awareness of green products. Furthermore, benefits have a significant positive relationship with awareness of green products. At the same time, promotional strategies have a statistically significant positive effect, and availability is also positively influenced by green product awareness.

Conclusion: This study concluded that marketing's effect on product awareness was the highest because it enhances marketing strategies and the tendency towards green products. In the Saudi population, effective marketing will have a significant impact on promoting consumers' attitudes towards buying green products.

Keywords: Awareness; Consumers; Eco-friendly; Green products; Saudi Arabia

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¹ Corresponding author.

E-mail address: nsalamah@kau.edu.sa / almdnm@yahoo.com

1. Introduction

Recently, the environment has become a mainstream issue with unsustainable consumption patterns such as environmental pollution and natural resource depletion in today's competitive world (Ansu-Mensah & Bein, 2019; Seegebarth, Peyer, Balderjahn, & Wiedmann, 2016; Shittu, 2020). Global economic growth results in increased consumption of natural resources, leading to environmental destruction. Climate change caused by burning fossil fuels and anthropogenic greenhouse gases presents significant global challenges (Pillai, 2016). The above-mentioned environmental complex leads to this "green" process, which ultimately leads to people's awareness and green product consumption (Pagliacci, Manolică, Roman, and Boldureanu, 2019; Sreen, Purbey, and Sadarangani, 2018). Therefore, the "green" concept is associated with responsible consumption, eco-friendly marketing, environmentally conscious consumers, social concern, and sustainability. Hence, these terms have formulated a platform for green consumption globally (Pagliacci, Manolică, Roman, and Boldureanu, 2019; Suki, Suki, and Azman, 2016).

This green approach aims to increase sustainability, reduce operating costs, protect residents' health, and save energy (Zhang, Shen, Tam, and Lee, 2012). Ottman, Stafford, and Hartman suggest that green products are designed to save energy and protect the environment by eliminating toxic waste and pollution (Ottman, Stafford, and Hartman, 2006). In developed countries, consumers are conscious and willing to buy green products (Berger, 2019; Wei, Ang, and Jancenelle, 2018). Competing business organizations have observed this tendency in the consumer's attitude toward evolving the potential in the green industry and market (Sima, 2018). Moreover, the consciousness of these green products in markets remains low in developed countries due to a lack of awareness (Shittu, 2020). According to the investigation, most consumers are unaware of green products due to a lack of information and less awareness about environmental issues (Arseculeratne & Yazdanifard, 2014; Golkonda, 2013). Hence, the consumers' awareness of green products promotes the green market and guides consumers' purchasing decisions (Suki, 2013).

Studies regarding consumer awareness of green products have been conducted in many countries, such as India, Bangladesh, Malaysia, and Saudi Arabia (Bhatia & Jain, 2014; Siddique & Hossain, 2018; Suki, 2013; Georage, S., 2017). However, in the Saudi Arabian region, green marketing has become essential to the corporate strategy for increasing consumer loyalty and market share. George (2017) suggested that by determining the level of awareness in Saudi Arabian regions, the green markets have the potential to increase environmental product demand, and they present numerous opportunities and challenges. The purchasers in Saudi Arabia are reasonably aware of green marketing (Georage, 2017). In Saudi Arabia, university students conducted studies (Rehman, 2018) with a minimal sample size of 100 participants. There is a lack of research regarding green product awareness among Saudi consumers, so this study analyzes green product awareness in the Saudi population. Also, it helps to understand the marketing strategy terms and enhances the tendency toward green products in Saudi Arabia. The current study aims to develop awareness in urban and rural people about the eco-friendly consumption of green products in Saudi Arabia. Consumer awareness towards eco-friendly products is essential for promoting a sustainable future by informing consumers about the benefits of eco-friendly products, labelling them clearly, pricing them competitively, and providing easy access to them. The research questions addressed by the study are as follows:

- How does green product awareness influence green marketing efforts?
- What is the effect of green product awareness on consumer loyalty?
- How does awareness of green products impact consumer concerns about pricing?
- How does awareness of green products affect consumer concerns about benefits?

- In what ways does green product awareness affect the effectiveness of promotional strategies?
- How does green product awareness impact the availability of green products?

The findings of this study have significant implications for policy, practice, and future research. From a policy perspective, enhancing green product awareness can drive more robust environmental regulations and incentives encouraging businesses to adopt sustainable practices. Practitioners can use these insights to design more effective marketing and promotional strategies that resonate with consumer concerns and improve product availability. For future research, this study highlights the need for further investigation into the factors influencing green product awareness in different cultural contexts and market segments, especially in under-researched regions like Saudi Arabia.

2. Literature Review

2.1. Marketing

Green marketing is a management practice that plans, implements, and controls the development, pricing, promotion, and distribution of green products in a way that meets the customer needs and organizational goals to prevent adverse effects on the environment, which integrates sustainability into marketing (Dangelico & Vocalelli, 2017; Gelderman, Schijns, Lambrechts, and Vijgen, 2021; Kumar, Rahman, and Kazmi, 2013). The environmental concern in marketing practice is an extension of the societal marketing concept to understand the green marketing concept to expand its ideas embedded in the ecological and societal marketing concepts (Amoako, Dzogbenuku, Doe, and Adjaison, 2022). Shabbir, Bait Ali Sulaiman, Hasan Al-Kumaim, Mahmood, and Abbas (2020) suggested providing guidelines about green marketing to boost positive attitudes towards society and help organizations with green product promotion. Because green product erudition is a direct predictor of green purchase intentions, which implies consumers will buy green products (Wang, Ma, and Bai, 2019). Scott and Vigar-Ellis (2014) suggested that green knowledge affects an individual's attitude towards environmental consumption and buying behavior. A more environmentally friendly demeanour is developed when awareness regarding the environment increases and purchasing intention inclines more toward ecological products (Peattie, 2010; Wang, Ma, and Bai, 2019). Hence, Green marketing is positively influenced by Green product awareness.

H1= Green Marketing is influenced by Green Product Awareness

2.2. Loyalty

Loyalty is a customer's inferred emotional attachment to a product and a favourable attitude towards reliably repurchasing the product in the future (Chikosha & Potwana, 2021). This depends on people's socio-demographic characteristics, knowledge, values, experiences, attitudes, and behaviours. Informed people are concerned about the adverse effects of environmental effluence and care about environmental protection, making them more likely to accept the premium (Dabija & Bejan, 2017). Chrisjatmiko (2018) suggested that customer loyalty allows organizations to exceed their competitors and fulfil customer requirements. Recently, consumers have been interested in buying green products to mitigate the environment and their resources. These key elements of sustainability are critical in retailers' plans to reach consumer satisfaction, including well-structured communications and offers of eco-friendly products to win consumer loyalty and assist them in adopting environmentally friendly practices (Chrisjatmiko, 2018). Hence, loyalty is positively influenced by Green product awareness.

H2 = loyalty is positively influenced by Green product awareness.

2.3. Concern about pricing

Price is a primary factor in green product purchases because green consumers buy these products if they recognize that their qualities, designs, and functions benefit them. As suggested by Zhu & He (2016), there are two types, i.e., marginal cost-intensive green products (MIGPs) and development-intensive green products (DIGPs). For the added factor of being eco-friendly, companies in the

automobile industry, like Chrysler, install specific devices (catalytic converters) in their vehicle, which improves the green effect by being a vehicle that emits less carbon (Zhu & He, 2016). The cost of manufacturing a catalytic converter depends on the cost of the device; this is called 'production intent technology'. The cost varies with the type and volume of production and is not fixed, hence it is called MIGPs. At the same time, companies like Tesla have matured and invested enough (Mehta & Bhavani, 2018) to improve product properties, such as developing cars that utilize clean energy, biodegradable plastic products, and eco-friendly battery materials. The cost required to produce these products is primarily fixed and regarded as DIGPs (Gao et al., 2018). Sharaf and Perumal (2018) posited that an essential factor influencing consumers' behaviour toward green products is their price and easy availability. The marketing of green products has been inadequate in providing awareness about the benefits of green products and their quality. However, the unavailability of green products poses a significant barrier to their sales. Despite consumers' intention, positive attitude, and willingness, they cannot buy those (Sharaf & Perumal, 2018). Hence, the concern about pricing is positively influenced by Green product awareness

H3 = Concern about pricing is positively influenced by Green products awareness.

2.4. *Concern about benefit*

Green products benefit health, society, and economics because green products provide incentives for green technology development and products. The developed products and services meet the green purchasing demand and can become popular with consumers (Chrisjatkiko, 2018). This improves public services and the quality of life, such as reducing air emissions through green buying support (through its activities). Green product applications are cost-effective in terms of purchase price and product costs associated with their operation and disposal (Sana, 2020). In contrast, Harris and Roach (2017) suggested that this green purchase mitigates numerous environmental concerns, such as climate change, inefficient use of primary resources, deforestation, air, water, soil pollution, waste generation, and waste packing (Harris & Roach, 2017). Hence, concern about benefits is positively influenced by Green product awareness

H4 = Concern about benefits is positively influenced by Green products awareness.

2.5. *Promotional strategies*

Promotional approaches are important in consumers' adoption of green products through marketers' communication methods. Consequently, communication is an indispensable part of green promotion (Papadas & Avlonitis, 2014). This increases the consumer's awareness, knowledge, and concern, and motivates them to become green consumers through eco-friendly products due to environmental alterations in raw materials, production processes, and distribution approaches (Lee & Lam, 2012). According to Sikandar (2021), the organization should take drastic measures for green product promotions through wide advertising campaigns and ensure their availability. Hence, the consumers will be more motivated to buy and use the green products. Previous studies state that consumers can be encouraged to alter their usual purchasing practices through promotional approaches (Kaur, Gangwar, and Dash, 2022). Poh Kiong, Lim, Ng, and Wong (2022) suggested that the best strategy to promote environmental products is to provide truthful information and realistic claims regarding environmental benefits so as not to exploit consumers' motives and trust in green products. So, the Promotional strategies are positively influenced by Green product awareness.

H5 = Promotional strategies are positively influenced by Green product awareness.

2.6. *Availability*

The green products availability rate is higher than the green products awareness (GPs) because consumers' decision to purchase the GPs depends on their availability (Sharaf & Perumal, 2018; Thakur & Aurora, 2015). Consumers are motivated by the availability of green products, thus reducing environmental risk (Biswas, 2016). Green product production needs to be increased and made accessible in the markets. Jaiswal (2012) studied the most popular green products bought by families in the stores,

but green fruits and vegetables were in short supply due to their demand. The availability of green products is at the initial stage since most consumers are unaware of their existence. This unavailability significantly hinders the sales of green products. Despite consumers' intention, positive attitude, and willingness, they cannot buy those (Sharaf & Perumal, 2018). This could be due to limited production of green products, or the wrong location in the markets or shops. In a previous study, it was seen that half of the respondents do not buy green products due to the inconvenience in finding them (Wijekoon & Sabri, 2021). Hence, Availability is positively impacted by Green product awareness.

H6 = Availability is positively influenced by Green product awareness.

As a result, Figure 1 depicts a conceptual model proposed in the context of the above-stated literature.

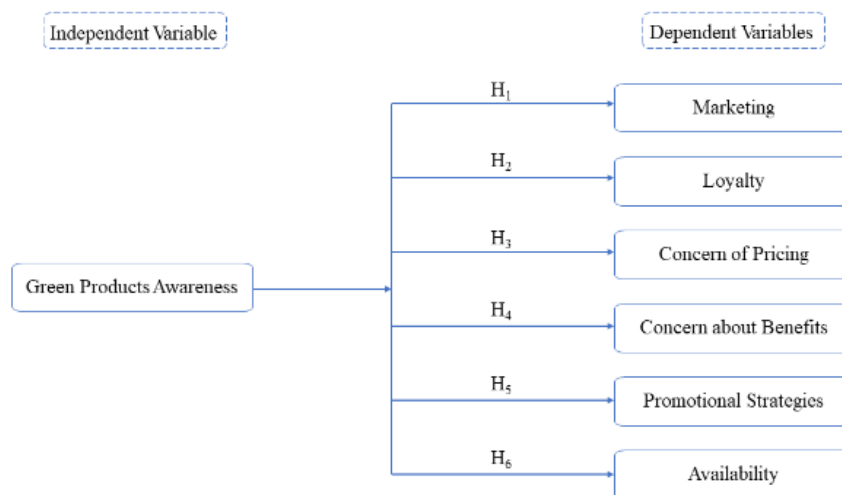


Figure 1. Research Model

3. Method

3.1. Study design and sampling

This study adopts a descriptive design to investigate consumer awareness of green products and their implications. A self-designed questionnaire was developed to capture specific variables pertinent to the research questions. The survey was distributed online via SurveyMonkey, a widely used platform for online surveys. SurveyMonkey was chosen due to its user-friendly interface, advanced analytics capabilities, and robust security features, which facilitate the collection and management of survey data efficiently.

3.2. Instrument(s)

The close-ended questionnaire was designed after reviewing the literature of previous studies on different populations (Akter, 2012; Babu, 2020; Thapa, 2019). These questionnaires were segmented into two sections. The first section displays demographics regarding age, gender, educational status, employability, and income. In contrast, the second section includes questions about whether participants knew about green products and from which sources.

3.3. Data collection procedures

Before participating in the study, each participant consented to participate in the survey, with an average time of 10 to 15 minutes to complete the questionnaire. Participants were given eight weeks to fill out the questionnaire, then they were asked to respond to the awareness statements regarding the following categories: knowledge about green products, green products that the consumers would use,

and their reasons for using those products. These questions had multiple nominal scale options such as 'yes', 'no', and 'not sure'. Similarly, statements regarding factors such as the effect of marketing green products, green products, loyalty towards green products, concern about its prices and benefits, and opinions about the promotional strategies and availability of green products were designed to be answered on a Likert scale, where, 1 = strongly agree, 2 = disagree, 3 = neutral agree, and 4 = Strongly agree. The response to all these statements will help understand green product awareness and its causal relationship with Saudi consumers.

3.4. Data analysis

The present study used the Statistical Package for the Social Sciences (SPSS) software version 25 to analyze data. A Partial Least Squares Structural Equation Modelling (PLS-SEM) method was used to verify the constructed model in two steps: first, to evaluate the reliability and validity of the measured model using the Fornell-Lacker and HTMT value, and second, to evaluate the predictive validity. PLS-SEM was selected for its suitability in exploratory research where the primary goal is to identify key relationships between variables and assess the theoretical model's validity. PLS-SEM is particularly advantageous in this study because it handles complex models with multiple constructs and indicators. It evaluates the relationship between latent constructs (also called factors) and their observed indicators (also called manifest variables) (Ali, Javed, and Danish, 2021).

4. Results

The results section presents the findings from the survey analysis, which aim to address the research questions concerning green product awareness. The survey findings were examined using quantitative data analysis techniques, with 205 consumers actively answering the survey. Table 1 provides an overview of the reliability of various variables measured by a survey, as assessed using Cronbach's Alpha. The overall instrument's alpha of 0.773 suggests that the entire survey has good internal consistency, making it a reliable tool for measuring the intended constructs.

Table 1. Reliability statistics

Variables	Total No. of items (N)	Cronbach's Alpha
Marketing	5	0.808
Loyalty	4	0.741
Concern about pricing	9	0.736
Concern about the benefit	5	0.784
Promotional strategies	5	0.776
Availability	5	0.793
Overall Instrument	33	0.773

According to the analysis in Table 2, 64% were women, and only 26% were males. The highest number of participants, 64 (31.2%), ranged from 25 to less than 35 years, whereas only 16 (7.8%) were equal to or more than 55 years. Most respondents, i.e., 65 (31.7%), were from the government sector. Around 98 (47.8%) of the participants had a medium salary range (6000 to < 9000 SAR/month), whereas 175 (85.4%) graduated and 16 (7.8%) are post-graduated, as shown in Table 2.

The demographic data reveal that women (64%) show significant interest in green product awareness. The majority age group (25 to less than 35 years) indicates that younger adults are more engaged with green products. Many respondents work in the government sector (31.7%), suggesting public sector influence. Most participants are in the middle-income range (47.8%), indicating green awareness spans across income levels. The high education level (85.4% graduates) suggests that educated consumers are more inclined towards eco-friendly products, impacting future educational and marketing strategies.

Table 2. Demographic profile of respondents

	Parameters	Frequency	Percent
Age	18 to < 25	26	12.7
	25 to < 35	64	31.2
	35 to < 45	58	28.3
	45 to < 55	41	20.0
	>55	16	7.8
Gender	Male	73	35.6
	Female	132	64.4
Employability	Student	61	29.8
	Employed in the government sector	65	31.7
	Employed in the private sector	45	22.0
	Self-employed	34	16.6
Monthly Income	<3000	5	2.4
	3000 to < 6000	98	47.8
	6000 to < 9000	71	34.6
	>9000	31	15.1
Education Level	Secondary	14	6.8
	Graduation	175	85.4
	Post-graduation	16	7.8

The convergent validity results were evaluated using two key measurement parameters: Average Variance Extracted (AVE) and composite reliability. According to Hair Jr et al. (2021) and Hair, Sarstedt, Ringle, and Mena (2012), the convergent validity of each variable should meet the thresholds of at least 0.50 for AVE and 0.80 for composite reliability. Additionally, Cronbach's Alpha reliability should be at least 0.70. Hair (2009) noted that a slightly lower AVE coefficient can be acceptable if the composite reliability is sufficient. Table 3 presents the convergent validity results, showing that all constructs meet the required criteria.

Table 3. Convergent validity

Constructs	CA	CR	AVE
Marketing	0.918	0.941	0.799
Loyalty	0.864	0.916	0.785
Concern about pricing	0.870	0.911	0.719
Concern about the benefit	0.903	0.933	0.776
Promotional strategies	0.776	0.856	0.598
Availability	0.837	0.891	0.672

Construct validity evaluates the development of constructs with their measures in the PLS-SEM technique, as highlighted by Hair Jr et al. (2021). This is crucial in ensuring that the survey items accurately reflect green marketing, loyalty, pricing concerns, benefit concerns, promotional strategies, and availability. Factor loadings were examined to assess construct validity, with acceptable loadings higher than 0.60. Table 4 displays the factor loadings for each construct, confirming that all loadings are above the acceptable threshold, indicating adequate construct formation. For example, Marketing 1 (MAR1) has a factor loading of 0.841, well above the 0.60 threshold.

Table 4. Construct validity

Factors	MAR	LOY	PR	BENE	PS	AV
Marketing 1 (MAR1)	0.841					
Marketing 2 (MAR2)	0.924					
Marketing 3 (MAR3)	0.925					
Marketing 4 (MAR4)	0.882					
Loyalty 1 (LOY1)		0.904				
Loyalty 2 (LOY2)		0.848				
Loyalty 3 (LOY3)		0.904				
Concern about pricing 1 (PRI1)			0.900			
Concern about pricing 2 (PRI2)			0.857			
Concern about pricing 3 (PRI3)			0.839			
Concern about benefit 1 (BENE1)				0.901		
Concern about benefit 2 (BENE2)				0.906		
Concern about benefit 3 (BENE3)				0.892		
Concern about benefit 4 (BENE4)				0.823		
Promotional Strategies 1 (PS1)					0.783	
Promotional Strategies 2 (PS2)					0.759	
Promotional Strategies 3 (PS3)					0.785	
Promotional Strategies 4 (PS4)					0.765	
Availability 1 (AV1)						0.843
Availability 2 (AV2)						0.824
Availability 3 (AV3)						0.795

To ensure discriminant validity, we applied the Fornell-Larcker criterion, which requires that the square root of the AVE for each construct be greater than its highest correlation with any other construct. Table 5 shows that all constructs have met this criterion, indicating adequate discriminant validity. The values were as follows: Marketing (0.894), Loyalty (0.886), Concern about pricing (0.848), Concern about benefit (0.881), Promotional strategies (0.773), and Availability (0.82). Hence, discriminant validity was obtained per the Fornell and Larcker (1981) criterion.

Construct, convergent, and discriminant validity are essential for the study because they provide a rigorous assessment of the measurement model's quality. Ensuring construct, convergent, and discriminant validity allows for confidence that the constructs are accurately and reliably measured, which is crucial for the integrity of the data analysis and the validity of the study's conclusions.

Table 5. Discriminant validity–Fornell-Larcker criterion

Constructs	MAR	LOY	PR	BENE	PS	AV
Marketing	0.894					
Loyalty	-0.411	0.886				
Concern about pricing	-0.197	0.548	0.848			
Concern about the benefit	-0.433	0.567	0.408	0.881		
Promotional strategies	-0.324	0.500	0.504	0.518	0.773	
Availability	-0.254	0.528	0.519	0.584	0.657	0.820

Heterotrait-Monotrait (HTMT) ratio was used for an additional discriminant validity criterion, which suggests that all HTMT values should be less than 0.85 (Henseler, Ringle, and Sarstedt, 2015; Kline, 2023). As shown in Table 6, all constructs met the HTMT criterion, confirming discriminant validity. For example, the HTMT ratio between Marketing and Loyalty is 0.445, below the 0.85 threshold.

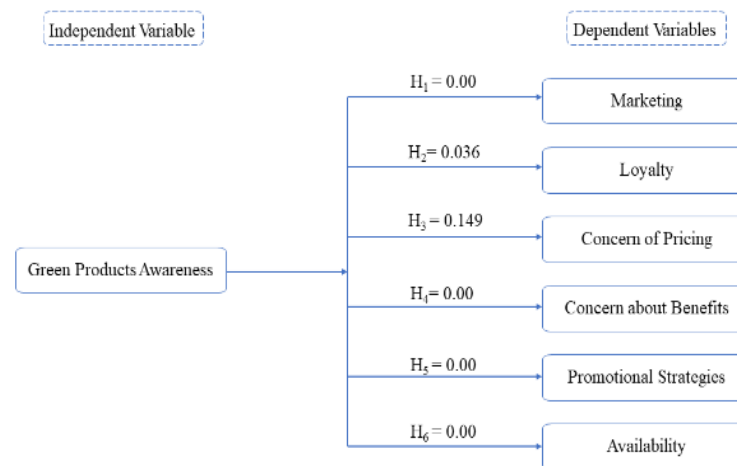
Table 6. Discriminant validity using Heterotrait-Monotrait (HTMT) ratio

Constructs	MAR	LOY	PR	BENE	PS	AV
Marketing						
Loyalty	0.445					
Concern about pricing	0.215	0.616				
Concern about the benefit	0.470	0.634	0.456			
Promotional strategies	0.375	0.606	0.614	0.615		
Availability	0.275	0.612	0.602	0.665	0.810	

The hypothesis analysis results in Table 7 and Figure 2 demonstrate the relationships between independent and dependent variables in the PLS-SEM model. The results show that marketing (0.509, $p < 0.05$), loyalty (0.109, $p < 0.05$), benefits (0.318, $p < 0.05$), and promotional strategies (0.379, $p < 0.05$) have a statistically significant and positive influence on the awareness of green products. Pricing (0.067, $p > 0.10$) has a positive but statistically insignificant impact on green product awareness.

Table 7. Hypothesis analysis

Path	Estimates	Std. Error	T-Statistics	P Values
Green Marketing → Green Products Awareness	0.509	0.060	8.454	0.000
Loyalty → Green Products Awareness	0.109	0.052	2.099	0.036
Pricing → Green Products Awareness	0.067	0.046	1.443	0.149
Benefits → Green Products Awareness	0.318	0.061	5.255	0.000
Promotional strategies → Green Products Awareness	0.379	0.057	6.638	0.000
Availability → Green Products Awareness	0.339	0.061	5.571	0.000

**Figure 2.** Path analysis

The regression analysis presented in Table 8 investigates the awareness of green products. The results reveal that the constant (intercept) is 3.639, indicating the baseline level of green awareness when green marketing is zero, and this coefficient is highly significant ($p < 0.001$). The marketing of green products has a negative unstandardized coefficient of -0.019, suggesting that green awareness slightly decreases. This inverse relationship is statistically significant ($p < 0.001$). The model explains 28.2% of the variance in green awareness, as indicated by the R^2 value of 0.282, and the overall model is statistically significant with an F-statistic of 19.911 ($p < 0.001$).

Table 8. Regression analysis on Green Awareness

Model	Unstandardized coefficients		t-statistics	Significance
	B	Std. Error		
Constant	3.639	0.173	13.485	0.000
Green Products Awareness	-0.019	0.007	-3.564	0.000
R ² = 0.282		F = 19.911		Sig = 0.000

5. Discussion

This study aims to analyze the awareness of green products among the Saudi population to understand and enhance marketing strategies that promote eco-friendly consumption. This research seeks to inform consumers about the benefits of eco-friendly products, ensure clear labelling and competitive pricing, and improve accessibility to these products. The first hypothesis, stating that green marketing is influenced by green product awareness, is supported by our findings. The results indicate that heightened awareness of green products leads to an increase in green marketing efforts. This relationship is crucial as it helps marketers develop effective strategies to promote environmentally friendly products. As Alamsyah, Othman, and Mohammed (2020) noted, increased green product awareness drives green marketing trends, motivating consumers to purchase these products. Alhamad, Akyürek, Mohamed, and Baadhem (2023) further emphasized that green marketing practices significantly shape consumer decisions, enhancing their perceptions through initiatives like using recycled materials, reducing energy consumption, and minimizing environmental impacts.

The second hypothesis, which posits that loyalty is positively influenced by green product awareness, is also supported ($P = 0.036$). González-Viralta, Veas-González, Egaña-Bruna, Vidal-Silva, Delgado-Bello et al. (2023) suggested that green practices foster consumer loyalty by building a trust-based relationship. When consumers recognize a brand's commitment to environmental responsibility, they develop confidence in it, reducing perceived risks associated with future purchases. This loyalty is critical for businesses aiming to maintain a competitive edge in the growing green market.

The third hypothesis, stating that concern about pricing is positively influenced by green product awareness, is not supported ($p\text{-value} = 0.149$). This finding aligns with Adrita (2020), who highlighted consumer sensitivity to the high prices often associated with green products. To maintain market acceptance, the Saudi green market must consider consumer values and potentially implement more affordable pricing strategies. Kaadoor (2020) suggested that if green products are priced too high, they may lose their appeal, despite their environmental benefits. Hasnain, Raza, and Qureshi (2020) recommended that green brands in Saudi Arabia create pricing strategies that reflect consumers' willingness to pay for green goods and services.

The fourth hypothesis, that concern about benefits is positively influenced by green product awareness, is accepted. The study indicates that consumers recognize the benefits of green products for themselves and the environment. Klabi and Binzafrab (2022) highlighted the importance of companies providing detailed information about the benefits of green practices. By understanding these benefits, consumers are more likely to support green products, reinforcing the positive impact of green product awareness on perceived benefits.

The fifth hypothesis, which states that promotional strategies are positively influenced by green product awareness, is accepted. Tekeli and Kasap (2023) found that green awareness can be effectively raised through targeted promotions that provide accurate information about a company's environmental initiatives and products. Alhamad (2019) noted that effective promotional strategies include various

activities designed to increase consumer awareness and create a positive impression of environmentally friendly businesses. These strategies are vital for promoting green products and enhancing their market presence.

The sixth hypothesis, asserting that availability is positively influenced by green product awareness, is also supported. The study shows that consumers are more likely to purchase green products when they are readily available. However, Ansu-Mensah (2021) noted that availability had a minimal influence on university students' intentions to purchase green products. Nonetheless, this study underscores the importance of green product availability in influencing consumer behavior, highlighting the need for increased market presence to meet consumer demand.

6. Conclusions

The results showed that marketing, loyalty, benefits, promotional strategies, and availability all play important roles in the awareness of green products, whereas pricing is not statistically significant. The awareness of green products among the Saudi population has increased over time, driven by health concerns, as people trust more in green diet intake, which is less harmful. As reported by the present study, marketing's effect on product awareness was the highest because it enhances marketing strategies and the tendency towards green products. In the Saudi population, effective marketing will have a significant impact on promoting consumers' attitudes towards buying green products. Green product marketing should be consumer-friendly and economical to increase production and consumption.

Promoting green products is essential for raising public consciousness about their environmental benefits, and consumer awareness plays a crucial role in driving purchase decisions. Awareness should be spread across different societies to bridge the gap between educated and uneducated individuals, with green marketing business partners maintaining tolerance and persistence in their cost impacts. Proper awareness leads to consumer loyalty, which is a vital factor. As the world faces extreme globalization and pandemic threats, consumers are becoming more aware of chemical hazards that have long-term effects on nature and the health of living organisms. Consequently, beneficial and attractive marketing of green products is increasingly important.

Green products have gained significance since research and development efforts have been implemented to strengthen health foundations. Thus, health and socio-economic conditions positively influence the awareness of green products, highlighting the need for honesty and commitment to environmental betterment.

7. Practical implications

The findings of this study offer several practical implications for marketers, customers, and manufacturers aiming to enhance the awareness and adoption of green products. For marketers, the study emphasizes the crucial role of awareness in promoting green products. One of the primary strategies should be the development of targeted advertising campaigns that highlight their products' environmental benefits and sustainability aspects. By showcasing how green products contribute to reducing pollution and conserving resources, marketers can appeal to environmentally conscious consumers. Beyond traditional advertising, educational campaigns can be implemented to inform the public about the broader environmental issues and how green products can help mitigate these problems. Workshops, webinars, and collaborations with environmental organizations can effectively spread this knowledge. Leveraging social media platforms to share information about green products and their benefits can increase engagement and reach a wider audience. Interactive content such as infographics, videos, and testimonials can make the information more accessible and relatable.

Increased awareness allows customers to make more informed decisions about their purchases. Understanding the environmental impact of their consumption choices can motivate consumers to opt for green products, contributing to a more sustainable lifestyle. Informed consumers can also advocate for green products, influencing their peers and promoting environmentally friendly choices within their

communities. This consumer advocacy can further drive demand for green products, encouraging manufacturers to prioritize sustainability in their production processes.

The study's findings suggest that addressing the lack of awareness is critical in increasing the market share of green products. Manufacturers should focus not only on product promotion but also on distributing knowledge about environmental protection to consumers. This can be achieved through transparent labelling that communicates the environmental benefits of the products and through partnerships with environmental organizations to support broader educational initiatives. By aligning their marketing strategies with sustainability goals, manufacturers can build consumer trust and strengthen their brand reputation.

8. Study Limitations and Future Research

While this study provides valuable insights into the factors influencing green product awareness and its subsequent impact on marketing, loyalty, pricing concerns, perceived benefits, promotional strategies, and product availability, several limitations should be acknowledged.

Firstly, the study's sample size, though adequate for initial insights, is relatively small and limited to specific regions within Saudi Arabia. This limits the generalizability of the findings to other regions and populations. A larger, more diverse sample could provide a more comprehensive understanding of green product awareness and its impacts.

Secondly, relying on self-reported data through online surveys may introduce response bias. Participants may have provided socially desirable responses rather than their accurate perceptions and behaviors. Future studies could benefit from incorporating mixed methods, including qualitative interviews or focus groups, to gain deeper insights into consumer attitudes and behaviors.

Thirdly, the study focuses primarily on consumers' awareness and perceptions without delving into purchasing behaviors. Understanding the gap between awareness and actual purchase actions would provide a more complete picture of consumer behavior in the green product market. Longitudinal studies tracking changes in behavior over time would be particularly valuable.

Future research should expand the geographic scope to include diverse regions and countries, focusing on actual purchasing behaviors rather than just awareness. Longitudinal studies tracking changes over time and qualitative methods such as interviews and focus groups can provide deeper insights into consumer motivations and barriers. Additionally, examining the effectiveness of various educational and awareness programs and exploring the intersection between health and environmental consciousness can offer valuable perspectives for promoting sustainable consumption.

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