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Transforming Consumers' Attitude to Green Purchase Behavior The Moderating Role of Healthy Lifestyle A survey study of a sample of consumer opinions in the Kurdistan Region of Iraq*

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Abstract:

This study aims to examine the factors that influencing green purchase behavior among consumers in the Kurdistan Region of Iraq. Specifically, it investigates the relationships between environmental attitude, environmentally conscious consumer behavior, social norms, and green brand equity, while also considering the moderating role of a healthy Lifestyle. A cross-sectional survey was conducted with 397 consumers of organic food residing in the Kurdistan region of Iraq. The collected data were analyzed using Smart-PLS Structural Equation Modeling (SEM) to rigorously test the hypothesized relationship. The findings revealed that environmental attitude, environmentally conscious consumer behavior, social norms, and green brand equity significantly influence consumers' willingness to purchase green products. Moreover, the results confirmed that a healthy lifestyle positively moderates the relationship between environmental attitude and green purchase behavior, suggesting that individuals who prioritize health and wellness are more likely to act on their pro-environmental attitudes. This study contributes to the growing body of literature on green consumer behavior by providing empirical evidence from a developing regional context. The results offer valuable theoretical and practical implications for policymakers, marketers, and practitioners seeking to promote sustainable consumption through awareness campaigns, green branding strategies, and lifestyle-based marketing initiatives that align personal well-being with environmental responsibility.

*The research is extracted from a master's thesis of the first researcher.

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التوجه البيئي وسلوك المشتري الاخضر: الدور المعدل لنمط الحياة الصحي دراسة استطلاعية لعينة من آراء المستهلكين في اقليم كوردستان العراق*

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المستخلص

تهدف هذه الدراسة الى تحليل العوامل المؤثرة في سلوك الشراء الاخضر لدى المستهلكين في إقليم كردستان العراق. وتبحث الدراسة تحديدًا في العلاقة بين الموقف البيئي، وسلوك المستهلك الواعي بيئيًا، والأعراف الاجتماعية، وقيمة العلامة التجارية الخضراء، مع الأخذ في الاعتبار الدور المُعدل لنمط الحياة الصحي. أُجري مسح مقطعي على 397 مستهلكا للاغذية العضوية من سكان إقليم كردستان العراق. وحُللت البيانات المُجمعة باستخدام نمذجة المعادلات الهيكلية Smart-PLS (SEM) لاختبار العلاقة المُفترضة بدقة. وكشفت النتائج أن الموقف البيئي، وسلوك المستهلك الواعي بيئيًا، والأعراف الاجتماعية، وقيمة العلامة التجارية الخضراء تؤثر بشكل كبير على رغبة المستهلكين في شراء المنتجات الخضراء. علاوة على ذلك، أكدت النتائج أن نمط الحياة الصحي يُعدل بشكل معنوي العلاقة بين الموقف البيئي وسلوك الشراء الأخضر، مما يُشير إلى أن الأفراد الذين يُعطون الأولوية للصحة هم أكثر ميلًا للتصرف بناءً على مواقفهم المؤيدة للبيئة. تُساهم هذه الدراسة في إثراء الأدبيات المُتنامية حول سلوك المستهلك الأخضر من خلال توفير أدلة تجريبية من سياق إقليمي ناشئ. وتقدم النتائج آثارًا نظرية وعملية قيمة لصناع السياسات والمسوقين والممارسين الذين يسعون إلى تعزيز الاستهلاك المستدام من خلال حملات التوعية واستراتيجيات العلامات التجارية الخضراء ومبادرات التسويق القائمة على نمط الحياة والتي تربط بين الرفاهية الشخصية والمسؤولية البيئية.

الكلمات المفتاحية: الموقف البيئي، سلوك المستهلك الواعي بيئيًا، سلوك الشراء الأخضر، قيمة العلامة التجارية، نمط الحياة الصحي، المعايير الاجتماعية، نمذجة المعادلات الهيكلية، إقليم كوردستان.

1. Introduction

The escalating global emphasis on environmental sustainability has driven green purchasing, with consumers favoring eco-friendly alternatives (Aljanabi & AL-Hadban, 2023; Rusyani et al., 2021). Green purchase behavior involves choosing products that reduce environmental harm, including organic, recyclable, and energy efficient items produced sustainably, with organic foods reflecting lifestyle preferences and altruistic chemicals and alignment with health awareness (Anisimova et al., 2019; Sdrolia & Zarotiadis, 2019; Wu & Long, 2024). These shifts in consumers' attitudes are influenced by range of factors including individual and social values, environmental impacts, and marketing factors (Huang et al., 2022; Tan et al., 2022; Xu et al., 2020). However, Prior research has largely

* البحث مستل من رسالة ماجستير للباحث الأول.

examined either product-centric factors, such as environmental certification and eco-labeling (Potter et al., 2021), or consumer-centric factors such as environmental awareness and values (Song et al., 2019), often neglecting the interplay between social environment, individual consumers, and product influence. While environmentally conscious consumer behavior (ECCB) promotes positive environmental attitudes (Cheung & To, 2019; Kautish & Sharma, 2020; Laheri et al., 2024), attitudes alone do not guarantee environmentally friendly behavior (Sharma & Bansal, 2013). Individuals are fundamentally social beings, and their behavior is significantly influenced by social norms, which play a crucial role in promoting behavioral change (Kim & Seock, 2019; Miller et al., 2022). Yet, the interaction between social norms, individual attitudes, and behaviors in green purchasing remains underexplored (Farrow et al., 2017). As environmental concerns intensify, green purchasing become more prominent, driven by consumers' environmental attitudes and their valuation of environmentally responsible (Laheri et al., 2024; Liang et al., 2024). Nevertheless, previous studies have not adequately explored how green brand equity (GBE) impact environmental attitude (Ha et al., 2022; Khan et al., 2022).

Green purchasing is specially strong among individuals with a healthy lifestyle, who link personal health to environmental sustainability (Hernández Medina et al., 2020). A healthy lifestyle may moderate the link between environmental attitude and green purchase behavior (Liang et al., 2024), though this relationship needs further study (García-Salirrosas et al., 2025).

Guided by Stimulus-Organism-Response model (Mehrabian & Russell, 1974), this study explore how environmental and social stimuli influence attitudes and behaviors. In the Kurdistan region of Iraq, organic products are limited but demand for imports is growing (United Nations Development Programme, 2024; World Bank, 2022). Thus, the prior research fails to comprehensively integrate product, consumer (e.g., ECCB), and social factors (norms) in green purchasing. A major gap exists in understanding how green brand equity (GBE) influences environmental attitudes, despite its growing. Furthermore, while a healthy lifestyle is linked to green buying, its role as a moderator between attitude and behavior requires clarification. Guided by the S-O-R model, this study explores these relationships, focusing on GBE and social norms as stimuli in a developing market context like Iraq. This approach addresses the limitations of attitude-only models by incorporating multi-source influences on sustainable consumption.

Research in Iraq indicates that consumers with greater knowledge about environmental choices and sustainable products process green product

information more effectively, fostering positive attitudes (Aljanabi & AL-Hadban, 2023), and that social class comparisons significantly influence organic purchasing choices (Aljanabi & Ghafour, 2024). Nevertheless, further research is needed to understand how a healthy lifestyle influences the development of consumers' attitudes towards green products and whether it directly affects their purchasing decisions. Based on the above, it can be concluded that the existing research in Iraq indicates that heightened consumer knowledge about environmental choices and sustainable products facilitates more effective processing of green product information, thereby fostering positive attitudes, and demonstrates that social class comparisons significantly influence organic purchasing choices. However, a crucial practical gap remains, as further research is needed to determine the specific role of a healthy lifestyle in shaping consumers' attitudes toward green products and whether this factor directly influences their purchasing decisions, which is vital for developing targeted green consumption strategies in the Iraqi market.

This research offers three key contributions to the understanding of green purchase behaviour. First, it emphasizes the potential to promote green purchasing behavior by understanding the factors that influence consumer attitudes toward green products. Second, it highlights the role of a healthy lifestyle as a moderating variable that influences the link between EA and GPB. Third, by employing the Stimulus-Organism-Response (S-O-R) model, it provides a conceptual framework that integrates factors influencing green consumer behaviour, paving the way for future research and practical applications in green marketing strategies. Consequently, the current study aims to answer the following research questions:

RQ1. What is the relationship between environmental attitude and green purchase behavior?

RQ2. What is the relationship between environmentally conscious consumer behaviour, social norms, green brand equity, and environmental attitude?

RQ3. Does a healthy lifestyle moderate the relationship between environmental attitude and green purchase behavior?

2. Literature review and hypotheses development

2.1 The relationship between environmental attitude and green purchase behavior

Rapid population growth, climate change, and resource depletion have increased the need for sustainable consumption (Siddique et al., 2021; Zheng et al., 2020). Green purchase behavior has thus emerged as an effective means to mitigate environmental problems and promote sustainability (Ogiemwonyi et al., 2023). For example, increased

environmental awareness and health consciousness have underscored the negative consequences of non-recyclable materials, stressing the need to adopt eco-friendly products for improved well-being and sustainable environmental practices (Liang et al., 2024; Ogiemwonyi et al., 2023). This shift reflects the growing tendency toward responsible consumption driven by consumers' environmental attitudes and awareness. Environmental attitude, representing an individual's cognitive and emotional evaluation (" organism" in the S-O-R model), plays a critical role in predicting pro-environmental intentions and behaviors (Ogiemwonyi et al., 2023; Siddique et al., 2021). Individuals with strong pro-environmental attitudes are more likely to purchase eco-friendly products and contribute to environmental protection and these attitudes may lead consumers to prioritize environmentally responsible goods and services (Cheung & To, 2019; Woo & Kim, 2019).

However, the link between environmental attitude and behavior is complex, as concern for the environment does not always lead to green purchasing especially when it involves personal costs or effort (Zheng et al., 2020). Therefore, this study hypothesizes the following:

H1. There is a positive impact of environmental attitude on green purchase behavior.

2.2 The relationship between environmentally conscious consumer behavior and environmental attitude

Environmentally conscious consumer behavior reflects a growing awareness of how purchasing decisions impact the environment, including choices such as eco-friendly products and sustainable consumption patterns (Cheung & To, 2019; Kautish & Sharma, 2020). Consumers who engage in environmentally conscious behavior often exhibit socio-psychological traits and progress through attitudinal phases, developing altruistic values that influence personal norms, environmental attitudes, and subjective norms (Kautish & Sharma, 2020, 2021). These values create a sense of moral obligation and shape attitudes toward eco-friendly products (Cheung & To, 2019). Environmental consciousness is a situational cue that affects an individual' internal states (organism), driving green purchasing behavior. It can motivate choosing organic products, influencing consumer attitudes toward organic foods and potentially leading to increased organic food consumption (Chen, 2009).

Importantly, environmentally conscious behavior extends beyond organic foods to area such as energy-efficient appliances and eco-friendly vacations (Schlegelmilch et al., 1996). Nonetheless, factors like price, trust, and consumer cynicism can create a gap between attitudes and actual behavior, showing that positive environmental attitudes alone do not always translate

into pro-environmental actions (Johnstone & Tan, 2015; Sharma & Bansal, 2013). Therefore, this study proposes the following:

H2: There is a positive impact of environmentally conscious consumer behavior on environmental attitude.

2.3 The relationship between social norms and environmental attitudes

The urgency of addressing environmental challenges has highlighted the fundamental role that social dynamics play in shaping individual and collective behaviors (Wang et al., 2018).

Social norms—shared expectations within a community—can influence environmental attitudes, which reflect individuals' beliefs and values about nature (Niu et al., 2023). When individuals adopt pro-environmental behaviors due to social norms, their attitudes often become more favorable, creating a feedback loop that reinforces commitment to environmental causes (Cheung & To, 2019; Kim & Seock, 2019).

The S-O-R model shows that receiving information about environmental issues triggers emotional reactions (e.g., guilt or anxiety) and cognitive evaluations (e.g., recognizing the need for change), shaping attitudes toward sustainable actions (Ullah et al., 2024). Support or approval from family, friends, community members, and the public, can motivate pro-environmental behavior, fostering a sense of collective responsibility. Social interactions help individuals gain knowledge about environmental concerns, and social norms encourage actions like reducing waste or buying eco-friendly products, though their effects can vary across contexts (Kim & Seock, 2019; Liang et al., 2024).

Cultural factors also influence the strength of this relationship. In cultures emphasizing collective well-being, social norms more strongly promote environmentally consciousness (Liang et al., 2024). However, some studies report non-significant effects of social norms on environmental attitude Farrow *et al.* (2017). Therefore, this study hypothesizes the following:

H3: There is a positive impact of social norms on environmental attitude.

2.4 The relationship between green brand equity and environmental attitude

Increasing concerns about environmental issues and the depletion of nonrenewable resources have encouraged companies to adopt green marketing strategies, demonstrating social responsibility (Khandelwal et al., 2019) and responding to consumers' increasing environmental expectations (Sdrolia & Zarotiadis, 2019). This shift has led to the development of green brand equity — a brand's value linked to its environmental practices and commitments —serving as a stimulus (S) that influences consumer emotional and cognitive processes, leading to shifts in environmental attitudes and behaviors (Ha et al., 2022). Consumers who feel emotionally connected to green brands often exhibit greater loyalty and satisfaction and

this influence is especially pronounced for environmentally conscious consumers and their commitments to green practices; it reinforces their attachment to these brands (Khan et al., 2022). Ha (2022) points out that consumer who perceive a brand as have high green equity are likely to have preferential attitudes toward the brand and engage in environmentally friendly behaviors. This positive relationship is essential for companies that aim to build sustainable consumer loyalty through green marketing strategies (Mehdikhani & Valmohammadi, 2022). However, when consumers perceive green marketing efforts as insincere or misleading— through practices such as greenwashing or excessive packaging— they may develop a negative attitude toward the brand. This skepticism can reduce trust, loyalty, and the overall perceptions of environmental issues, weakening the potential impact of green brand equity (Ghali-Zinoubi, 2022). Therefore, this study hypothesizes the following:

H4. There is a positive impact of green brand equity on environmental attitude.

2.5 The relationship between healthy lifestyle and green purchase behavior

A healthy lifestyle promotes and maintains good physical and mental health. It encompasses a variety of choices and habits that contribute to overall well-being (Mohd Suki, 2016). This is not merely the absence of disease but a positive approach that can also influence consumer behavior by explaining how consumers' internal processes ("Organism") affect their decision-making and purchasing perceptions (Anisimova et al., 2019). Health-conscious individuals who pursue balanced diets tend to have a positive attitude toward organic products because a healthy lifestyle is driven by consumers' desire to improve their well-being through actions such as eating organic food, engaging in regular physical activity, and making informed purchasing decisions (Tan et al., 2017). Consequently, scholars argue that consumers with a healthy lifestyle are more likely to demonstrate green consumption behavior, as they perceive eco-friendly products to be aligned with their values of health and sustainability (Alagarsamy et al., 2021).

Individuals who prioritize their well-being through healthy lifestyle choices often prefer products that are both environmentally friendly and contribute to their overall sense of well-being (Mohd Suki & Mohd Suki, 2015). However, while health-conscious consumers tend to purchase green products, health consciousness does not universally drive green purchases (Singh & Gupta, 2021; Tan et al., 2017). Therefore, this study hypothesizes the following:

H5. There is a positive impact of healthy lifestyle on green purchasing behavior.

2.6 The moderating role of healthy lifestyle

The relationship between environmental attitude (EA) and green purchase behavior (GPB) is strongly supported in the related literature research (Cheung & To, 2019; Zheng et al., 2020). However, various contextual factors can either strengthen or weaken the influence of environmental attitudes on purchasing decisions (Liang et al., 2024; Nguyen et al., 2023). This underscores the complexity of consumer behavior within the sustainability context (Chen, 2009; Song et al., 2019; Woo & Kim, 2019). One potentially influential individual characteristic is a healthy lifestyle. Given that individuals with a healthy lifestyle prioritize long-term benefits, they are more likely to engage in behavior that promotes both personal health and environmental sustainability, making them more inclined to adopt dietary habits that benefit both health and environmental well-being (Tan et al., 2017). However, it is also essential to recognize that people who prioritize a healthy lifestyle often have a strong focus on personal well-being and immediate benefits (Alhosseini Almodarresi et al., 2019; García-Salirrosas et al., 2025). While self-interest likely underlies most purchasing decisions, the degree of altruism can vary significantly in long-term recurring purchases (Hui & Wenan, 2022). Consequently, choosing a green product might sometimes be perceived as a trade-off against personal benefits. For instance, an organic option might be more expensive, a sustainable product might be less convenient, or a vegan choice might feel less satisfying in terms of personal taste preferences (Sun & Wang, 2020). The egoistic drive for personal well-being might then lead individuals to choose the option that best serves them in that moment, even if it's less environmentally friendly (De Dominicis et al., 2017). Therefore, the "healthy" lens introduces another layer of criteria that can weaken the direct link between simply caring about the environment and actually purchasing green products. Therefore, this study assumes the following:

H6: A Healthy lifestyle moderates the relationship between environmental attitude and green purchase behavior.

Based on the theoretical discussion above, Figure 1 presents the theoretical model and proposed hypotheses.

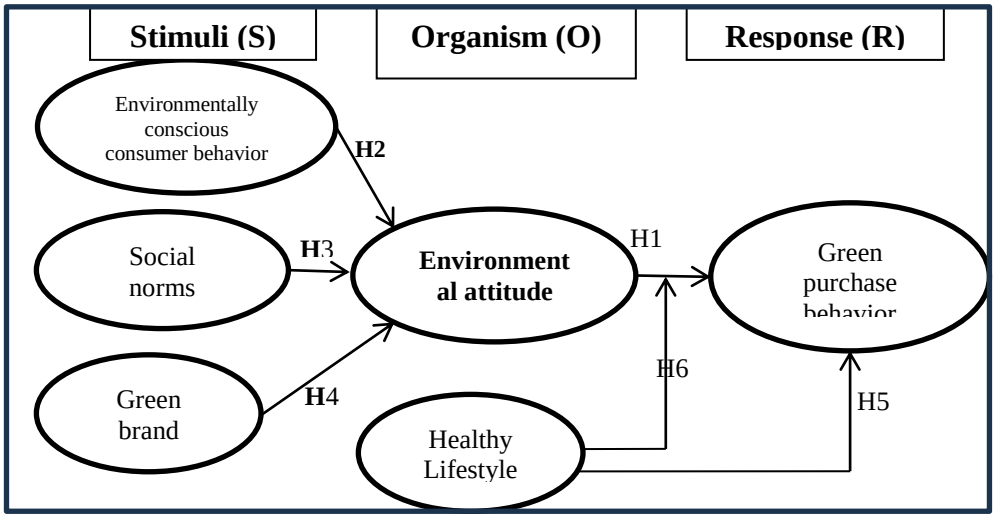

Figure 1. Research framework

Source: The figure was prepared by the researchers based on the results of the statistical analysis

3. Methodology

3.1 Data collection

Data were collected through an online questionnaire targeting regular green product consumers in the Kurdistan Region of Iraq. Filtering questions ensured respondents had experience purchasing green products. The survey was conducted from December 2024 to February 2025, using convenience sampling, a common method in marketing research when random sampling frames are unavailable (Andrade, 2021). Based on Krejcie and Morgan (1970), a sample above 384 is suitable for population over one million, and 397 valid responses exceeded the 5:1 participant-to-item ratio recommended by Hair *et al.* (2014) for the 42- item questionnaire. The survey was translated into Kurdish following Brislin (1970) method, reviewed by two bilingual experts and back-translated by a third expert to ensure accuracy and cultural equivalence. Facebook was used to reach respondents effectively, particularly adults with independent purchasing decisions (Ozimek & Bierhoff, 2016).

Demographics, including age, gender, and purchase frequency, are summarized in in Table 1.

Table 1. Respondents 'demographic information, n= 397

Items	Rate	Percentage
1.Gender		
Female	219	55.17%
Male	178	44.83%
2. Age		
20-24	46	11.59%

25-29	149	37.53%
30-34	115	28.97%
35-39	54	13.60%
40-44	19	4.78%
45-49	12	3.02%
50-54	2	0.50%
3. Budget		
I buy products that can be described as:		
Economical products	51	12.85%
Mid-range products	207	52.14%
Premium products	139	35.01%
4. Frequency of purchase		
Daily	43	10.83%
Weekly	112	28.21%
monthly	222	55.92%
Every few months	20	5.04%
5. Academic Level		
High school	29	7.30%
Diploma	94	23.68%
Bachler	230	57.94%
Master	38	9.57%
Doctorate	6	1.51%

Source: The table was prepared by the researchers based on the results of the statistical analysis

3.2 Measurement

A seven-point Likert scale (1 = strongly disagree, 7 = strongly agree) was used in the questionnaire, based on previously published research. Specifically, seven items adopted from Lee (2009) measured green purchase behavior (GPB), which has demonstrated robust reliability (Cronbach's α = 0.838), as reported by Amit Kumar (2021). Environmentally conscious consumer behavior (ECCB) was measured using twelve items adopted from instruments developed by Roberts (1996) and Taufique & Vaithianathan (2018). This measure exhibited excellent reliability (Cronbach's α = 0.928) as evidenced in the work of Alagarsamy *et al.* (2021). The five dimensions of social norms were adopted from Kim & Seock (2019) and Park & Smith (2007), with Ullah *et al.* (2024) reporting acceptable reliability for this measure (Cronbach's α = 0.85). Green brand equity was measured using a four-item scale adopted from Ha *et al.* (2022). Ha (2022) found that the Cronbach's alpha for this scale was 0.868. Environmental attitude was measured using three-item scale adopted from Taylor & Todd (1995), with Alam *et al.* (2023) reporting a composite reliability of 0.925. Finally, healthy lifestyle (HL) was measured using an eleven-item scale adopted

from José M *et al.*, (2000), for which Chen (2009) reported a Cronbach's alpha of 0.90.

4. Analysis and results

4.1 Measurement model

The partial least squares (PLS) approach was used to analyze the research models in two phases: the measurement model and the structural model, as suggested by Hair *et al.* (2019) . Table 2 presents the results of the construct validity and reliability tests. All latent variables were assessed for convergent validity, with factor loadings ranging from 0.731 to 0.935, demonstrating strong indicator reliability. However, some items with low factor loadings were excluded from the analysis, namely, healthy lifestyle (HL2, HL4, and HL6). The average variance extracted (AVE) for each construct was greater than 0.5, and the composite reliability (CR) values for all the latent variables were greater than 0.7, confirming the stability and reliability of the constructs. Additionally, the Cronbach's Alpha coefficients for all constructs were above 0.6, further affirming the reliability of the measuring scales. These findings indicate that the measuring scales. These finding indicate that the measurement model employed in this study is both appropriate and reliable. Furthermore, the Fornell & Larcker (1981) criterion was used to assess discriminant validity, which is the extent to which one construct is distinct from others. As shown in Table 3, the square root of the AVE for all significant constructs was sufficiently high compared to their inter-correlations.

Table 2. *Convergent Validity Analysis*

Constructs	Items	Factor Loadings	Convergent Validity		
			Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Environmental Attitude	**EA1**	0.935	0.921	0.950	0.864
	EA2	0.923			
	EA3	0.930			
Environmentally conscious consumer behavior	**ECCB 1**	0.894	0.966	0.969	0.721
	ECCB 2	0.829			
	ECCB 3	0.831			
	ECCB 4	0.834			
	ECCB 5	0.894			
	ECCB	0.897			

	6				
	ECCB 7	0.895			
	ECCB 8	0.789			
	ECCB 9	0.801			
	ECCB 10	0.837			
	ECCB 11	0.824			
	ECCB 12	0.852			
Green Brand Equity	**GBE1**	0.893	0.903	0.931	0.772
	GBE2	0.882			
	GBE3	0.871			
	GBE4	0.868			
Green Purchase Behavior	**GPB1**	0.748	0.892	0.915	0.606
	GPB2	0.776			
	GPB3	0.777			
	GPB4	0.771			
	GPB5	0.821			
	GPB6	0.770			
	GPB7	0.784			
Healthy Lifestyle	**HL1**	0.768	0.919	0.933	0.637
	HL3	0.770			
	HL5	0.731			
	HL7	0.760			
	HL8	0.788			
	HL9	0.866			
	HL10	0.862			
	HL11	0.829			
Social Norms	**SN1**	0.853	0.895	0.921	0.700
	SN2	0.901			
	SN3	0.851			
	SN4	0.833			
	SN5	0.737			

Source: The table was prepared by the researchers based on the results of the statistical analysis

Table 3. Results of discriminant validity assessment

Items	**1**	**2**	**3**	**4**	**5**	**6**
1. Environmental Attitude	0.929					

2. Environmentally conscious consumer behavior	0.087	0.849				
3. Green Brand Equity	0.167	0.086	0.879			
4. Green Purchase Behavior	0.223	0.063	0.079	0.779		
5. Healthy Lifestyle	0.144	-0.026	0.095	0.221	0.798	
6. Social Norms	0.149	-0.013	0.111	0.171	0.656	0.837

Source: The table was prepared by the researchers based on the results of the statistical analysis

4.2 Structural model

The evaluation of the structural model in this research was conducted using several key criteria, including path coefficients (β), the coefficient of determination (R^2) for endogenous variables, predictive relevance (Q^2), and multicollinearity (inner VIF). As shown in Table 4, EA positively and significantly affects GPB at a significance level of 0.05 (β= 0.212, t= 4.195, $p < 0.05$). This result supports hypothesis H1 of the study. Similarly, SN significantly influences EA (β= 0.134, t= 3.342, $p < 0.05$), thus supporting H3. In addition, GBE has a significant effect on EA (β= 0.146, t= 3.127, $p < 0.01$), supporting H4. Furthermore, Healthy lifestyle significantly influences GPB (β= 0.143, t= 2.765, $p < 0.001$), thus confirming H5. However, the results do not show a significant effect of ECCB on EA (β= 0.076, t= 0.998, p>.05), and therefore, H2 is not supported.

Table 4. Outcomes of the Structural Model

No.	Relationships	Path Coefficient	Standard Error	T-score	P-score	Decision
H1.	EA → GPB	0.212***	0.051	4.195	0.000	Supported
H2.	ECCB → EA	0.076	0.076	0.998	0.319	Not supported
H3.	SN → EA	0.134**	0.040	3.342	0.001	Supported
H4.	GBE → EA	0.146**	0.047	3.127	0.002	Supported
H5.	HL → GPB	0.143**	0.052	2.765	0.006	Supported
H6.	EA * HL → GPB	-0.119*	0.051	2.337	0.020	Supported

Notes: *p<0.05; p<0.01, *p<0.001

Source: The table was prepared by the researchers based on the results of the statistical analysis

4.4 Moderation analyses

To further explore the relationships between variables, the moderating effect of the healthy lifestyle dimension on the relationship between environmental

attitude and green purchase behavior was evaluated. The interaction term (environmental attitude × healthy lifestyle) was included in the analysis to assess this moderation. The results indicate that healthy lifestyle negatively moderates the association between environmental attitudes and green purchase behavior ($\beta = -0.119$, $t = 2.337$, $p < 0.05$), which supports H6. This result reflects the egoistic nature of the healthy lifestyle, where the primary driver is an individual's desire for improved health, longevity, and personal satisfaction. The benefits are directly experienced by the individual through feeling better, having more energy, and potentially avoiding illness. Figure 2 illustrates the simple slope of healthy lifestyle with standard deviation (+1SD/-1SD).

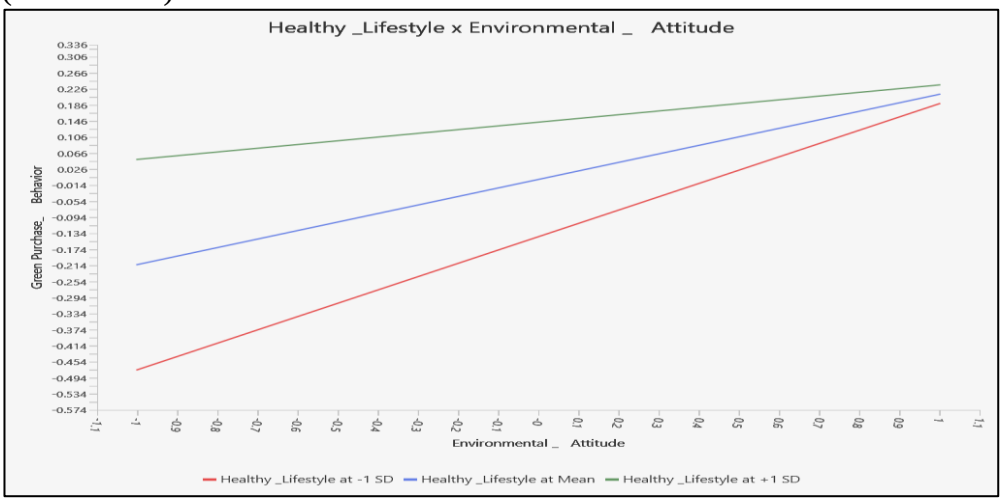

Figure 2. Interactive effects of healthy lifestyle and environmental attitude on green purchase behavior

Source: The figure was prepared by the researchers based on the results of the statistical analysis

5. Discussion and conclusion

This study, guided by the Stimulus–Organism–Response (S-O-R) framework, provides empirical evidence on the factors influencing green purchase behaviour in Kurdistan Region of Iraq.

Addressing RQ1, the results show a strong positive relationship between environmental attitude and green purchase behaviour. Participants with higher environmental concern and sustainability values were significantly more likely to engage in eco-friendly purchasing. This confirms that environmental attitude acts as a direct predictor of green purchase behaviour. This finding aligns with previous studies showing that pro-environmental beliefs actively influence consumer behaviour (Cheung & To, 2019; Ogiemwonyi et al., 2023; Siddique et al., 2021).

For RQ2, the findings indicate that perceived brand equity and social norms significantly influence environmental attitudes. Respondents who viewed brands as trustworthy, high-quality, and environmentally responsible reported a stronger pro-environmental attitudes, consistent with prior research (Chen, 2010; Ha et al., 2022; Mehdikhani & Valmohammadi, 2022). Similarly, the presence of social expectations encouraging green behaviour reinforced these attitudes (Kim & Seock, 2019). In contrast, environmentally conscious consumer behaviour did not significantly affect environmental attitude, suggesting an attitude-behavior gap (Chekima et al., 2019), likely due to situational constraints such as affordability or product availability (Wu & Long, 2024).

Regarding RQ3, the analysis of the moderating effect of a healthy lifestyle shows that it reduces the impact of environmental attitude on green purchase behaviour. Health-focused individuals may prioritize personal well-being over environmental considerations, particularly when green products are perceived as costly or less beneficial to health, confirming findings by (Tan et al., 2017).

In conclusions, this study offers a comprehensive, evidence-based understanding of green purchase behaviour in the Kurdistan Region of Iraq. The most notable theoritical contribution is the emprical integration of the healthy lifestyle priority as a significant negative moderator within the S-O-R framework. The results confirm the green purchase behaviour is primarily driven by environmental attitude, which is positively shaped by green brand equity and social norms. In contrast, environmentally conscious consumer behaviour did not significantly influence environmental attitude, indicating that awareness alone may not translate into stronger pro-environmental attitudes. These findings highlight the importance of strengthening environmental attitudes, leveraging brand reputation, and considering consumers' health priorities when designing strategies to promote green consumption and overcome the persistent attitude-behaviour gap.

6. Managerial Implications

This study offers valuable insights for marketers and policymakers. Marketers should highlight the dual benefits of green products—environmental protection and personal health—through messages emphasizing well-being (e.g., organic foods, non-toxic products). Educational campaigns should raise awareness of environmental issues and target health-conscious consumers with information aligned to their values. As healthy lifestyles often stem from personal well-being, marketers should stress the direct health benefits of green products while addressing trade-offs like cost and convenience by showcasing long-term value.

For policymakers, this study suggests incentivizing green choices through subsidies or tax breaks and discouraging unsustainable products via regulations or taxes. Integrating environmental education into school curricula and supporting community sustainability programs can foster pro-environmental attitudes. Lastly, policies that promote healthy lifestyle—such as encouraging walking and cycling—can indirectly enhance green consumption, achieving both health and environmental goals.

7. Limitations and avenues for future research

The current study faced several limitations. Thematic Limitations: These include the variables specific to the current study, namely [environmentally conscious consumer behaviour (ECCB), social norms (SN), and green brand equity (GBE)], as independent variable. The dependent variables are [green purchase behaviour (GPB), environmental attitude (EA)], in addition to the healthy lifestyle as a moderating variable. Spatial boundaries: The questionnaire was distributed to customers who made green purchases within the boundaries of the cities of the Kurdistan Region of Iraq. The timeframe for preparing the study, including both theoretical and practical aspects, was between October 2024 to October 2025, while the fieldwork requirements were completed in 3 months December 2024 to February 2025, and the analysis and interpretation of the results were completed within four months. Although this study provides valuable insights into green purchase behavior, several limitations should be acknowledged, offering directions for future investigation.

First, the exclusive focus on consumers in Kurdistan, Iraq, constrains the generalizability of the findings. Future studies could broaden the scope to other regions or undertake across-cultural comparisons to examine regional variations in green purchasing behavior. Second, the cross-sectional design and reliance on convenience sampling limit the ability to establish causality or observe temporal changes. Longitudinal approaches could capture how influencing factors evolve over time. Third, while this study examined the moderating effect of a healthy lifestyle, other potential determinants—such as environmental knowledge or financial constraints—should be incorporated to enhance the explanatory power of the model. Additionally, future research may investigate product-specific attributes, including price, quality, and brand, which likely influence green purchasing decisions. Finally, although this study was grounded in the Stimulus-Organism-Response (S-O-R) model, integrating additional cognitive and emotional perspectives could yield a more comprehensive understanding of consumer decision-making within green markets.

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