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A Study on Factors Influencing Environmental-Friendly Home Purchasing Behavior and Corresponding Strategies

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Abstract The rapid economic development, coupled with accelerated industrialization and urbanization, has brought significant challenges to sustainable development due to environmental pollution and climate change. Promoting the adoption of eco-friendly home products is essential for mitigating household pollution and advancing green, low-carbon, and sustainable consumption. This study investigates the key factors influencing consumers' purchasing behavior of eco-friendly home products and proposes targeted strategies. Grounded in the Theory of Planned Behavior (TPB) and the "Attitude-Intention-Behavior" model, the research constructs a theoretical framework for understanding green consumption behavioral intentions. Data were collected through an online survey of 397 consumers of home products in the Sichuan-Chongqing region, and Structural Equation Modeling (SEM) was employed to empirically examine the determinants of consumers' eco-friendly purchasing behavior. The results demonstrate that the proposed model effectively explains and predicts consumers' purchasing decisions regarding eco-friendly home products. Among the identified factors, attitude toward green products is the most significant determinant, while environmental concern and environmental awareness are the strongest antecedents influencing purchase intentions. Perceived behavioral control also exhibits a positive and significant effect on purchase intentions, whereas perceived environmental knowledge shows no significant impact. These findings offer valuable theoretical insights for manufacturers and market practitioners aiming to better align with and influence consumer decision-making in the eco-friendly home products sector. Additionally, the study provides practical recommendations for policymakers focused on fostering green consumption and promoting the sustainable development of eco-friendly home products.

Index Terms Green consumption, Environmentally friendly home, Purchase intention, Theory of Planned Behavior, "Attitude-Intention-Behavior" Model

I. Introduction

The issues of environmental pollution and climate change have become pressing global challenges, largely driven by unsustainable consumption behaviors that have caused severe ecological damage. The rising demand for consumption has not only fueled industrial production but also exacerbated environmental degradation and climate change during the production process [1]. To achieve sustainable economic growth, countries worldwide are implementing measures to tackle these challenges. For example, the Chinese government has introduced the "Action Plan for Carbon Peak Before 2030," which incorporates the dual goals of carbon peak and carbon neutrality into the national economic and social development strategy.

In this context, green consumption is receiving increasing attention. Green consumption promotes the purchase of environmentally friendly products and services to minimize adverse environmental impacts. This approach is not only a crucial strategy for achieving the dual-carbon goals but also an essential means of advancing the green economy from the consumption side. Understanding green consumption patterns is vital for facilitating green consumption upgrades, assisting businesses in achieving green and low-carbon transitions, and fostering high-quality development. Therefore, exploring consumer green consumption behavior under the dual-carbon framework holds significant theoretical value and practical relevance for promoting sustainable development and fostering a green consumption society. This research direction has far-reaching implications for environmental protection and the balanced development of economic and social systems.

With the rapid growth of the global economy and continuous improvements in living standards, the home furnishings industry has expanded significantly. Data show that global home furnishings sales reached $1.11 trillion in 2022, with projections estimating an increase to $1.89 trillion by 2030 [2]. However, the industry's rapid expansion has also led to heightened energy consumption, environmental pollution, and resource wastage. In response, eco-friendly home furnishings have emerged as a new concept in the market. These products incorporate natural elements and materials, minimize energy

and resource use, prioritize renewable resources, and focus on sustainable production processes. Eco-friendly home products have minimal environmental impact during manufacturing, are non-toxic to human health during use, and are easy to recycle.

As concerns about resource depletion and environmental pollution grow, the market for eco-friendly home products is rapidly expanding. In the United States, the eco-friendly home market emphasizes sustainability and energy efficiency; in countries like Germany, Sweden, and the United Kingdom, eco-friendly products must meet stringent environmental standards while often integrating modern design and advanced technology to satisfy consumer demands for healthy, environmentally friendly living. In China, government initiatives promoting green building and sustainable development have driven the rapid growth of the eco-friendly home market [3]. Globally, the eco-friendly home sector continues to show a steady growth trajectory.

In this context, a comprehensive investigation of the factors influencing consumers' choices of eco-friendly home products is crucial for businesses seeking to understand market trends and develop effective marketing strategies. Such insights not only help companies gain a competitive edge but also support the growth of the global eco-friendly home market. This research aims to thoroughly analyze the key factors shaping consumers' purchasing behavior for eco-friendly home products and provide valuable insights for manufacturers and policymakers. As consumers balance environmental considerations with factors like price, quality, and convenience, understanding their preferences and motivations is essential for devising successful marketing strategies and product development plans. Identifying the drivers of purchasing behavior enables companies to adjust product design and marketing approaches to better meet consumer needs. Additionally, research on eco-friendly purchasing behavior offers valuable insights for governments and policymakers in formulating policies that encourage sustainable consumption and facilitate green economic transformation.

Research on green consumption and sustainable development has garnered significant attention from scholars worldwide. As early as the 1970s, the concepts of green consumption behavior and green consumers were first introduced [4], [5]. Studies suggest that all consumers have the potential to become green consumers [6]. Green consumption behavior is typically evaluated based on consumers' willingness or intention to purchase environmentally friendly products, with these intentions ultimately translating into actual purchasing decisions that contribute to environmental sustainability [7]. In consumer behavior research, the Theory of Reasoned Action (TRA) first posited that consumer behavior is driven by intentions shaped by attitudes and subjective norms. The Theory of Planned Behavior (TPB), an extension of TRA based on social cognitive theory and rational choice theory, was subsequently developed to explain the process of individual behavioral decision-making, incorporating factors such as attitudes, perceived behavioral control, and subjective norms [8], [9]. While these classical models have been widely applied in research on green product purchase intentions and behaviors, the applicability of TRA and TPB as standard measurement tools remains uncertain across different contexts [10]-[12].

This study adopts the Theory of Planned Behavior and the Attitude-Intention-Behavior (AIB) model as its research framework, using structural equation modeling to validate eco-friendly home purchasing behavior. The analysis focuses on factors such as consumers' attitudes, subjective norms, perceived behavioral control, environmental concern and awareness, and perceived environmental knowledge, aiming to reveal the challenges and opportunities that consumers face in making eco-friendly home purchasing decisions. By examining the relationships between environmental concern and awareness, perceived environmental knowledge, perceived behavioral control, attitudes toward green home products, subjective norms, and purchase intentions for green home products—as well as the mediating role of perceived behavioral control—this study offers practical insights for developing green marketing policies and optimizing marketing strategies.

II. Literature Review and Research Hypotheses

II. A. Literature Review

Consumer green consumption behavior is often evaluated based on the willingness to purchase environmentally-friendly products, with such willingness or intentions ultimately translating into purchasing decisions that support environmental sustainability. In the field of consumer behavior research, the Theory of Planned Behavior (TPB) is a prominent social psychology framework used to explain and predict human behavior [8]. According to TPB, individual intentions are the primary predictors of behavior. These behavioral intentions are influenced by three key factors: Attitude Toward the Behavior, Subjective Norms, and Perceived Behavioral Control. Together, these factors shape an individual's behavioral intentions, which subsequently determine actual behavior. TPB underscores the significance of subjective judgments and attitudes toward behavior, while also highlighting Perceived Behavioral Control as a crucial element influencing both behavioral intentions and actual behavior.

To validate purchasing intentions and behaviors concerning green products, this classical model has been extensively utilized and adapted by various researchers. Osarodion et al. [13] proposed that green purchasing behavior is directly influenced by subjective norms, awareness of consequences, and environmental attitudes, with environmental issues and responsibilities indirectly affecting behavior through environmental attitudes. Zhang et al. [14] identified five key factors influencing green consumption behavior: green purchase intention, willingness to pay, risk perception, green product certification, promotion and education, and green product pricing. Among these, green product certification, promotion and education, and green

product pricing emerged as significant driving factors. Rusitha et al. [15] reviewed developments in green purchasing behavior research from 2015 to 2021, concluding that determinants of green purchase intention and behavior include facilitating factors, motivations, and barriers. Sang et al. [16] integrated rational and moral factors into consumer decisions regarding green products, revealing that personal norms and perceived behavioral control significantly impact consumers' willingness to purchase green products.

While the Theory of Planned Behavior (TPB) serves as a standard framework, its applicability to specific products and contexts can be limited. In varying market environments, it is essential to explore and adapt behavioral measures to account for the nuances of different products.

II. B. Research Hypotheses

Environmental home purchasing behavior refers to consumers' actions in selecting eco-friendly home products that positively impact the environment. This behavior involves consciously choosing recyclable products that benefit both the environment and society, while avoiding those that are environmentally harmful. Consumer purchasing behavior is typically assessed through their willingness to buy eco-friendly home products. This willingness represents a conscious decision that translates into actual purchasing actions, thereby contributing to environmental sustainability.

Green Purchase Intention (GPI) is defined as the consumer's readiness to purchase products that are environmentally beneficial. It reflects their motivation to select green products for the sake of environmental well-being [12]. Purchase Behavior (PB), on the other hand, pertains to the actual act of making a purchase. The intention to buy eco-friendly home products plays a crucial role in shaping purchasing behavior. Research indicates that the intention to purchase green products significantly influences actual purchasing behavior. Thus, the willingness to buy eco-friendly home products is a key determinant of purchasing decisions, demonstrating a commitment to environmental sustainability. The connection between intention and behavior is fundamental in environmental behavior research, underscoring the importance of understanding consumer motivations and intentions in driving green purchasing decisions [12].

Based on this understanding, the following hypothesis is proposed:

- **H1**: In the context of purchasing eco-friendly home products, purchase intention positively influences purchase behavior.

Behavioral Attitude (BA) is recognized as a crucial factor in behavioral intention and actual behavior within green consumer psychology research. This concept reflects consumers' preferences and aversions related to their purchasing decisions for products or services in both general and specific contexts [17]. Attitudes toward green products, therefore, represent individuals' beliefs or feelings about buying eco-friendly products and the ecological implications of such behaviors [18]. Research suggests that consumers with a more favorable attitude toward green products are likely to be more proactive in their purchasing decisions for these products [19].

Subjective Norms pertain to individuals' perceptions of social expectations and evaluations from others regarding their behavior. They reflect how individuals perceive the support or opposition from social groups, family, friends, or other significant people concerning specific behaviors [8]. Subjective norms underscore the role of social influence in shaping individual behavior.

Perceived Behavioral Control refers to an individual's subjective perception of the barriers and facilitators affecting a particular behavior. It involves beliefs about one's ability to perform or control a behavior and the external factors that may impact this ability [9].

Based on these considerations, the following hypotheses are proposed:

- **H2**: In the context of purchasing eco-friendly home products, behavioral attitude positively impacts purchase intention.
- **H3**: In the context of purchasing eco-friendly home products, perceived consumer effectiveness positively influences behavioral attitude.
- **H4**: In the context of purchasing eco-friendly home products, perceived consumer effectiveness positively impacts purchase intention.

The Value-Belief-Norm (VBN) Theory integrates the New Ecological Paradigm, Value Theory, and Norm Activation Theory to explain individuals' behavior and decisions within specific contexts by focusing on the interplay among values, beliefs, and norms. The theory emphasizes the ongoing influence of environmental values, beliefs, and personal moral norms on behavior. Individuals' actions are driven by their internal values, which manifest through their beliefs and are shaped by social norms that define appropriate and inappropriate behaviors.

Environmental Concern (EC) is a key cognitive measure of individuals' pro-environmental behavior, reflecting their awareness of environmental issues and sense of responsibility for environmental protection. It represents emotional appeals at the individual level and underscores participation in environmental protection. Thus, environmental concern and awareness are critical factors in engaging in green consumption. Research indicates that environmental concern and awareness significantly impact attitudes toward green products, which in turn affect the intention to purchase such products [13].

Perceived Environmental Knowledge (PEK) refers to an individual's awareness of environmental or sustainability issues,

including air and water pollution, energy use and efficiency, recycling, and waste management. Schahn and Holzer categorized environmental knowledge into abstract and concrete types: abstract knowledge involves general awareness of environmental issues, while concrete knowledge pertains to specific facts and behaviors, such as pollution and energy efficiency. Knowledge can be measured subjectively, based on individuals' self-assessment, or objectively, based on actual knowledge of environmental issues [21]. Research shows that higher levels of perceived environmental knowledge are associated with more proactive purchasing behavior, as consumers are better informed about the environmental impacts of their purchases.

Based on these considerations, the following hypotheses are proposed:

- **H5**: In the context of purchasing eco-friendly home products, environmental concern and awareness positively impact purchase intention.
- **H6**: In the context of purchasing eco-friendly home products, environmental concern and awareness positively influence behavioral attitude.
- **H7**: In the context of purchasing eco-friendly home products, environmental knowledge positively affects purchase intention.
- **H8**: In the context of purchasing eco-friendly home products, environmental knowledge positively influences behavioral attitude.

The theoretical framework of this study, based on the above theoretical analysis and research hypotheses, is illustrated in Figure 1.

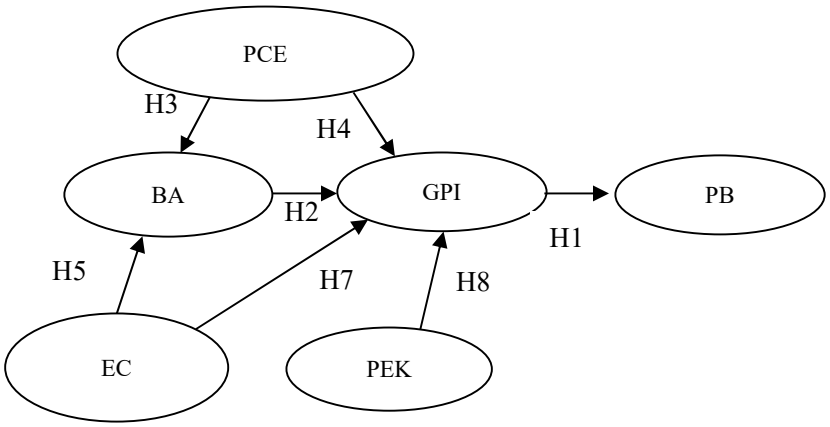

Figure 1: Theoretical Framework of Research on Green Home Purchase Behavior

III. Research Design

III. A. Methods and Questionnaire Design

Based on prior literature and theoretical research, six dimensions were identified: Perceived Environmental Knowledge (PEK), Consumer Perceived Efficiency (PCE), Environmental Concern and Awareness (EC), Behavioral Attitude (BA), Green Purchase Intention (GPI), and Purchase Behavior (PB), encompassing 24 research elements. All variables were assessed using a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree." A questionnaire was subsequently developed for quantitative data collection.

The questionnaire is divided into two sections:

- The first section gathers basic demographic information about the respondents, including age, income, gender, education, and sources of information.
- The second section includes measurement items adapted from established scales in existing research, tailored specifically to address "green home purchase behavior." Measurements for Green Purchase Intention and Behavioral Attitude were adapted from the scales developed by Ajzen [9], Li Wenchao et al. [21], and Greaves et al. [22]. Measurements for Perceived Environmental Knowledge, Consumer Perceived Efficiency, Environmental Concern and Awareness, and Purchase Behavior were based on methodologies from Jaiswal [12] and Lao Kefu [23]. Detailed descriptions of the variables are provided in Table 1.

Table 1: Indicators Influencing Green Home Purchase Behavior

Research Dimension	Research Element	Element Description
PCE	PCE1	Everyone's environmental behavior can have a positive impact on society.
	PCE2	I feel capable of helping solve environmental problems.
	PCE3	I can protect the environment by purchasing green home products.
	PCE4	I can help solve the problem of increasing natural resource shortages by purchasing green home products.
PEK	PEK1	I am well aware that using green home products can protect the environment.
	PEK2	The production process of green home products is environmentally friendly.
	PEK3	The production process of green home products is healthy for workers.
	PEK4	Green home products are easy to recycle.
	PEK5	Green home products are safer to use.
EC	EC1	I am concerned about the deterioration of environmental quality.
	EC2	The environment is one of my main concerns.
	EC3	I have an emotional investment in environmental protection issues.
	EC4	I often think about how to improve environmental quality.
BA	BA1	I think buying green home products is a good idea.
	BA2	I think buying green home products is a wise choice.
	BA3	I think buying green home products is beneficial to the environment and health.
	BA4	I think buying green home products aligns with national industrial policies.
GPI	GPI1	I am willing to gather information about green home products.
	GPI2	I am willing to recommend green home products to family and friends.
	GPI3	I tend to purchase home products labeled as "green."
PB	PB1	When I want to buy home products, I check whether they contain substances harmful to the environment.
	PB2	When the quality of home products is similar, I prefer environmentally friendly products.
	PB3	I choose to purchase green home products.
	PB4	Even if green home products are more expensive than non-green products, I will buy the green products.

This survey was conducted using the Wen Juanxing platform, focusing on the purchase of eco-friendly home products, which are predominantly purchased by families. The survey targeted employees from various enterprises and institutions in the Sichuan and Chongqing regions to ensure the collection of scientifically sound data, thereby enhancing the validity of the survey results. A total of 397 questionnaires were collected, with 380 being valid, resulting in an effectiveness rate of 94.8%.

Ethical statements: All data collection was approved by the Sichuan Vocational and Technical College of Commerce for Protection of Human Subjects. All participants provided informed consent prior to their participation, and data collection was performed in accordance with relevant guidelines and regulations.

III. B. Data Analysis

III. B. 1) Analysis of Respondent Demographics

The survey collected quantitative data on five dimensions related to the respondents: gender, age, household monthly income, education level, and preferred means of obtaining information. Descriptive profiling was then conducted on these groups. Among the respondents, 209 were male (55%) and 171 were female (45%). The age distribution was as follows: 99 respondents aged 18-34 (26.1%), 156 aged 35-44 (41.1%), and 125 aged 45 and above (32.8%). The educational background of respondents was distributed as follows: 12.7% had less than a high school education, 41.9% held a college degree, and 45.4% had a master's degree or higher. In terms of household monthly income, 15.5% earned less than 4,000 RMB, 31.9% earned between 4,001 and 8,000 RMB, 31.3% earned between 8,001 and 12,000 RMB, and 21.3% earned more than 12,000 RMB.

Respondents primarily obtained information on green consumption through television, the internet, and social media channels. The age data suggest that this group shows significant interest in topics such as "well-being," "healthy living," and "green consumption." Most respondents are highly educated, have relatively high and stable incomes, and prefer to acquire information through various online media. Therefore, this sample configuration indicates that the respondents are well-educated, have a deeper understanding of the survey topic, and are more likely to engage in sustainable behaviors, including the purchase of eco-friendly products.

III. B. 2) Statistical Analysis

The proposed research model was analyzed using SPSS and AMOS software. The data analysis involved a two-stage Structural Equation Modeling (SEM) process: first, the measurement model was examined, followed by the structural model, with AMOS

being used to test the hypothesized model. In the first stage, Confirmatory Factor Analysis (CFA) was employed to assess the reliability and validity of the measurement model. The structural model evaluated the model's fit and tested hypotheses in the second stage of the SEM process to predict the dependency relationships between the independent (predictor) variables and dependent variables.

Before hypothesis testing, the reliability and validity of the survey questionnaire and the collected data were assessed to ensure data stability and reliability. First, the reliability of the data was tested using Cronbach's α coefficient and composite reliability. Higher values of Cronbach's α and composite reliability indicate greater consistency among the measurement items of the variables and, thus, higher reliability. The reliability and validity results of this study are shown in Table 2. The results showed that Cronbach's α values ranged from 0.739 to 0.913, while composite reliability values ranged from 0.805 to 0.936, both exceeding the minimum requirement of 0.7. Additionally, the Average Variance Extracted (AVE) was greater than 0.5, indicating that the six variables demonstrated good reliability.

Table 2: Reliability and Validity Analysis

Research Dimension	Research Factor	Factor Loadings	Composite Reliability	Cronbach's α Coefficient	Average Variance Extracted (AVE)
PCE	PCE1	0.905	0.805	0.867	0.806
	PCE2	0.913			
	PCE3	0.863			
	PCE4	0.908			
PEK	PEK1	0.823	0.936	0.913	0.748
	PEK2	0.911			
	PEK3	0.895			
	PEK4	0.864			
	PEK5	0.827			
EC	EC1	0.877	0.884	0.856	0.651
	EC2	0.904			
	EC3	0.723			
	EC4	0.719			
BA	BA1	0.738	0.89	0.833	0.670
	BA2	0.829			
	BA3	0.936			
	BA4	0.756			
GPI	GPI1	0.735	0.827	0.739	0.615
	GPI2	0.846			
	GPI3	0.767			
PB	PB1	0.712	0.907	0.879	0.776
	PB2	0.856			
	PB3	0.901			
	PB4	0.884			

Factor analysis was conducted using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity to assess the suitability of the data for factor analysis. The KMO value was found to be 0.816, which exceeds the commonly accepted threshold of 0.7, indicating that the sample is adequate for factor analysis. Furthermore, Bartlett's test of sphericity yielded a chi-square statistic that was significant at the 5% level, supporting the appropriateness of the data for factor analysis and confirming the good construct validity of the questionnaire scale. The detailed validity results are presented in Table 3.

By configuring the parameters for KMO and Bartlett's tests within the factor analysis module of SPSS, it was determined that the KMO value of 0.816 signifies that the questionnaire data is well-suited for factor analysis. Additionally, Bartlett's test of sphericity produced an associated p-value of 0.000, which is below the 0.05 significance level. This leads to the rejection of the null hypothesis for Bartlett's test, further reinforcing the conclusion that the questionnaire data is appropriate for factor analysis.

Table 3: Validity Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.816	
Bartlett's Test of Sphericity	Approximate Chi-Square	7283.9
	Df	190
	Sig	0

Similarly, the discriminant validity of the data was assessed by comparing the correlation coefficients between variables with the square root of each variable's Average Variance Extracted (AVE). The results, presented in Table 4, indicate that the correlation coefficients between all variables are lower than the square root of the AVE for each variable. Additionally, the cross-loadings of measurement items are lower than the factor loadings of the respective variables. These findings demonstrate that the variables exhibit good discriminant validity.

Table 4: Discriminant Validity Results

	PCE	PKE	EC	BA	GPI	PB
PCE	**0.896**					
PKE	0.316	**0.865**				
EC	0.269	0.294	**0.806**			
BA	0.314	0.317	0.386	**0.818**		
GPI	0.289	0.284	0.254	0.338	**0.784**	
PB	0.296	0.279	0.348	0.274	0.217	**0.881**

Note: The diagonal values of the matrix represent the square root of the Average Variance Extracted (AVE) for each variable, while the values below the diagonal are the correlation coefficients between the variables.

Once the reliability and validity of the survey data have been confirmed, the hypotheses can be tested. Table 5 presents the path coefficients and hypothesis testing results for the model of consumers' eco-friendly home purchasing behavior.

Table 5: Standardized regression coefficient and p-value

Hypothesis	Path	Estimate	p-value	Result
H1	GPI→GPB	0.327	0.004	Supported
H2	BA→GPI	0.412	0.008	Supported
H3	PCE→BA	0.325	0.007	Supported
H4	PCE→GPI	0.369	0.027	Supported
H5	EC→BA	0.377	0.005	Supported
H6	EC→GPI	0.398	0.013	Supported
H7	PEK→BA	0.066	0.436	Unsupported
H8	PEK→GPI	0.129	0.097	Unsupported

The path analysis results for the standardized regression coefficients (β) and p-values presented in Table 5 indicate that most hypotheses in the study model (H1-H6) are supported ($p < 0.01$ or $p < 0.05$), with the exceptions of H7 (PEK → BA, $\beta = 0.066$) and H8 (PEK → GPI, $\beta = 0.129$). The results further demonstrate a significant positive relationship between attitudes toward eco-friendly home products and green purchase intention ($\beta = 0.412$, $p < 0.01$), identifying it as the most critical predictor of green purchase intention (GPI). Additionally, environmental concern and environmental awareness have a significant impact on behavior attitude (BA) ($\beta = 0.377$, $p < 0.01$), while perceived consumer efficiency (PCE) also significantly influences behavior attitude but to a lesser extent ($\beta = 0.325$, $p < 0.01$). However, the structural equation modeling results show that perceived environmental knowledge does not significantly affect behavior attitude ($\beta = 0.066$, $p > 0.05$) or green purchase intention ($\beta = 0.129$, $p > 0.05$). Finally, green purchase intention has a direct and significant effect on the purchase behavior of eco-friendly home products ($\beta = 0.327$, $p < 0.01$). This finding underscores that purchase intention is a more effective predictor of eco-friendly home product purchase behavior compared to other behavioral indicators. In essence, consumers not only focus on the ecological quality of products but also consider the environmental impact associated with purchasing them. Therefore, purchase intention is regarded as the central predictor of purchase behavior, predominantly driven by consumer attitudes.

In conclusion, the author expects that the research findings derived from the "Attitude-Intention-Behavior" model will offer valuable insights to academics, policymakers, and marketing practitioners. These insights are intended to facilitate the development of more effective green marketing strategies and policies, tailored to the local context.

IV. Conclusion

Consumer demand is a cornerstone of national economic development; however, the non-sustainable industrial production driven by demand has resulted in environmental pollution and climate change. This study uses eco-friendly home purchasing behavior as a case study to develop a consumer behavior model based on the Theory of Planned Behavior and the "Attitude-Intention-Behavior" model. It analyzes the factors influencing purchase intention and behavior and explores regulatory approaches for consumer eco-friendly home purchasing behavior. The results indicate that consumer attitudes toward eco-friendly homes are the most critical predictor of purchasing such products. Specifically, consumer attitudes, environmental concern, and environmental awareness are the strongest antecedents of purchase intention. Additionally, perceived behavioral control demonstrates a positive and significant impact within the model, while perceived environmental knowledge does not have a significant effect on purchase intention in this study.

Given that consumer attitudes toward eco-friendly homes are a decisive factor in purchasing decisions, green home manufacturers and marketers should prioritize the cultivation of positive consumer attitudes. Environmental concern and environmental awareness are significant drivers of green home purchases; therefore, promoting environmental values and enhancing environmental awareness can effectively stimulate consumer purchase intentions. The model indicates that perceived behavioral control has a positive impact, suggesting that consumers' perceptions of and control over their behavior substantially affect their willingness to purchase green products. While environmental knowledge does have some influence on purchase intention, its impact is relatively modest. Consequently, in promoting green products, it is crucial not only to enhance consumers' environmental knowledge but also to focus on other, more immediate influencing factors.

Based on the findings, the following recommendations are proposed to advance the consumption of eco-friendly homes:

1. Promote Green Principles: It is imperative for both government and industry stakeholders to actively promote green principles through robust environmental education and green certification programs. Such initiatives are expected to broaden consumer support for eco-friendly homes.

2. Highlight Perceived Behavioral Control: Marketing strategies should emphasize the importance of consumers' perceptions of and control over their own behavior, as these factors significantly influence their confidence in purchasing green products.

3. Implement Targeted Marketing Strategies: Understanding the attitudes, environmental concerns, and levels of perceived behavioral control among various consumer segments is crucial. This insight will facilitate the development of tailored marketing strategies, aimed at enhancing the market penetration of eco-friendly homes.

4. Advance Environmental Education: Continuous efforts to improve environmental education are essential to increase consumer awareness of environmental issues and bolster their environmental consciousness, thereby encouraging more sustainable purchasing behavior.

In summary, manufacturers should adopt a holistic approach by considering consumer attitudes, subjective norms, environmental concern and awareness, and perceived behavioral control when developing targeted market strategies and product design plans. This approach will support the effective promotion and sale of eco-friendly home products. Simultaneously, policymakers should address consumer environmental awareness and demand by formulating and implementing robust green marketing policies. These policies should focus on advancing the green home industry by enhancing environmental product certifications to ensure minimal environmental impact throughout the product lifecycle. Such initiatives will encourage consumers to select certified eco-friendly products. Additionally, refining green product certification policies and promoting green consumption habits among residents will help guide urban consumers toward choosing environmentally sustainable products, thereby contributing to environmental protection.

Data availability

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

Ethical approval

The studies involving human participants were reviewed and approved by the Human Ethics Committee of Sichuan Vocational and Technical College. Informed consent was obtained from all participants included in the study.

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