

Research On The Influence Of Green Marketing On Consumer Purchasing Behavior

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Abstract:

Since the turn of the 21st century, environmental issues have become increasingly prominent alongside global economic development. Consequently, global enterprises bear a corresponding responsibility. With the rising environmental awareness among mankind, a novel marketing concept has emerged: Green Marketing. Against the backdrop of the widespread implementation of green marketing by enterprises, this paper aims to investigate whether and how green marketing affects consumer purchasing behavior.

Taking consumers as the research object, this study conducted an empirical analysis based on 355 valid questionnaires to test the proposed hypotheses. The conclusions indicate that the four variables of green marketing—green product design, production, sales, and recycling—have a significant positive influence on green consumption awareness. Furthermore, green consumption awareness exerts a significant positive impact on consumer purchasing behavior. Based on these findings, this paper provides reliable and effective recommendations for enterprises.

Keywords: *Green Marketing; Consumer Purchasing Behavior; Green Consumption Awareness*

Date of Submission: 04-12-2025

Date of Acceptance: 14-12-2025

I. Introduction

Research Background

Throughout the long history of human development, civilization and the economy have achieved continuous breakthroughs; however, ecological and natural issues have also become increasingly severe. As stated by scholars Song Xiang and Wang Zhiliang (2019), "No enterprise can exist independently of the environment". Enterprise development must be based on sustainable ecological development; only in this way can enterprises achieve sustainable growth in the long run and create more value for society. All enterprises are inextricably linked to environmental issues. To ensure the coexistence of humanity and nature, numerous enterprises have begun to introduce the concept of Green Marketing. Nevertheless, the uncertainty of consumers poses various challenges to the practical process of green marketing, making in-depth research into this concept particularly important.

Research Objectives and Significance

The objective of this study is to analyze the influence of four variables of green marketing—green product design, production, sales, and recycling—on green consumption awareness, as well as the impact of green consumption awareness on consumer purchasing behavior, thereby perfecting the green marketing system of enterprises.

On a theoretical level, although research on consumer purchasing behavior in China covers numerous

fields, there are few studies linking it with green marketing. Therefore, this paper focuses on the relationship between the two to explore and improve the corporate green marketing system. The research results can help us understand the impact of green marketing on consumer purchasing behavior, promote the development of China's environmental protection cause, enhance public green consumption awareness, and advance the goal of ecological civilization construction.

Research Methods

The research methods of this paper primarily include literature research, questionnaire survey, and data analysis. First, through the literature research method, we deeply study existing relevant literature and research results to design the research model of this paper and propose hypotheses. Second, we will adopt the questionnaire survey method to collect actual data, establishing a well-structured and effective questionnaire to obtain various feedback and viewpoints from the research objects, thereby conducting a detailed empirical analysis of the subject. Finally, we will use SPSS to process and interpret the collected data to reveal potential patterns, correlations, and trends, and propose corresponding suggestions.

II. Literature Review

Sustainable Development Theory

Sustainable development theory stands as a pivotal concept in contemporary social development. In the view of UN Secretary-General Ban Ki-moon (2022), sustainable development is regarded as the pathway leading to a future ideal state. It provides a framework to foster economic growth, achieve social justice, and strengthen environmental governance. Researchers Huang Sixun and Li Xuhong (2023) further emphasized that sustainable development involves the coordinated unification of the economy, ecology, and society. On the path of human socio-economic development, one must not only focus on the speed of development but also remain vigilant regarding the natural ecology. Overall, sustainable development theory underscores the harmonious development of humanity and nature to ensure that future generations can also meet their developmental needs, thereby achieving a symbiotic relationship between humans and nature. Research in this direction is of significant magnitude; thus, this paper will focus on exploring the theoretical underpinnings of green marketing, green consumption awareness, and consumer purchasing behavior, as well as the interrelationships and influences among them.

Green Marketing Theory

Domestic and international scholars have conducted research and exploration around relevant aspects. regarding green marketing research, Zhong Zhili et al. (2017) believe that it involves integrating the concept of green environmental protection from production to recycling, while Lyu Peien et al. (2018) consider it to be the management of social green demands that satisfies the common interests of consumers and operators. In terms of consumer purchasing behavior, Philip Kotler (2011) defines it as a behavioral response made by consumers after being stimulated by the environment and marketing. Regarding green consumption awareness, Zhang Leitao (2022) points out that it is a subjective attitude and behavior tendency of the public. These studies provide new thinking and reference for our analysis of the influence of green marketing on consumer purchasing behavior. Researchers Tang Lin et al. (2017) posit that green marketing is the integration of environmental protection as a critical element into a corporate marketing strategy. Scholars Sanjay K.K. and Sidhartha H. (2022) categorize green marketing into technological innovation, management innovation, and marketing innovation. Researcher Wang Chenggai argues that, compared to traditional marketing, green marketing emphasizes minimizing negative environmental impacts across various stages, including product

design, production, distribution, and recycling. These theories collectively illustrate that enterprises incorporate green factors into their overall operations—from product design to production processes—to satisfy consumers' environmental demands to the greatest extent possible. Consequently, the antecedent variables in this paper are designed around multiple dimensions of green marketing and are studied as influencing factors.

Consumer Behavior Theory

Consumers frequently face a multitude of issues, such as product selection, information asymmetry, pricing, after-sales service, and rights protection. Solutions to these issues are vital for marketers. However, understanding the rationale behind consumer purchasing decisions is challenging, as most consumers themselves are often unaware of the factors influencing their decisions. In this context, consumer behavior theory becomes instrumental. Saini and Singh's (2020) research on consumer behavior points out that enhancing customer experience can influence purchasing decisions and increase consumer repurchase rates. This indicates that when consumer experience is elevated, they are more likely to continue purchasing a specific product or service. To gain a deeper insight into consumer purchasing decisions, we can apply the five-stage consumer purchasing decision model proposed by Meng Tao (2018), which encompasses a series of processes before and after purchase. As stated by Liao Hui (2020), consumer purchasing behavior is a comprehensive process of implementing the actual act of purchasing. In summary, for marketers, different marketing approaches have multiple effects on various aspects of consumers. Therefore, this paper treats consumer purchasing behavior as an outcome variable in the research.

Green Consumption Awareness Theory

The impact of green marketing on consumer green consumption awareness and purchasing behavior has consistently been a focal point of research. According to a report by journalist Su Xiaomei (2023), green consumption awareness among enterprises in Tianjin has strengthened, and the supply of green electricity continues to grow, indicating a gradual increase in public green consumption awareness. Research by Ghosh (2021) demonstrates that green marketing influences consumption awareness, which in turn affects consumer purchasing behavior and allows it to be predicted by marketers. This suggests that green marketing impacts consumer purchasing behavior through their cognition and attitude toward eco-friendly products. Enterprises can attract and guide consumers to purchase eco-friendly products by advocating green environmental concepts and implementing environmental measures. Concurrently, the enhancement of consumer green consumption awareness also prompts them to prefer green products, thereby exerting a positive influence on corporate green market strategies. Based on the aforementioned discussion, this paper introduces green consumption awareness into the model as a mediating factor in the study of green marketing's influence on consumer purchasing behavior.

III. Research Design

Theoretical Model Construction and Research Hypotheses

Based on the theoretical discussion in the literature review, this paper proposes a theoretical model to systematically analyze the internal relationships among Green Marketing, Green Consumption Awareness, and Consumer Purchasing Behavior. In this model, the four dimensions of Green Marketing—Green Product Design, Green Production, Green Sales, and Green Recycling—are designated as the independent variables. Green Consumption Awareness functions as the mediating variable, and Consumer Purchasing Behavior is the dependent variable. This framework aims to examine the "why" and "how" of the influence pathway from corporate green practices to consumer action.

The following research hypotheses are formulated. Green Marketing and Green Consumption Awareness: When enterprises successfully integrate green concepts throughout the product life cycle, consumers are more exposed to and informed about environmental issues, thereby strengthening their own Green Consumption Awareness.

H1: Green Product Design has a significant positive influence on Green Consumption Awareness.

H2: Green Production has a significant positive influence on Green Consumption Awareness.

H3: Green Sales has a significant positive influence on Green Consumption Awareness.

H4: Green Recycling has a significant positive influence on Green Consumption Awareness.

Green Consumption Awareness and Consumer Purchasing Behavior: Green Consumption Awareness represents a consumer's internal cognitive and attitudinal commitment to eco-friendly practices. A heightened awareness is expected to directly translate into positive purchasing intentions and actual green purchasing behavior.

H5: Green Consumption Awareness has a significant positive influence on Consumer Purchasing Behavior.

Variable Measurement

This study utilizes a structured questionnaire survey to collect primary data. All constructs are measured using established, multi-item scales adapted from mature research in relevant fields to ensure the reliability and validity of the study. A five-point Likert scale is employed for all items, ranging from 1 to 5. The measurement scales for the variables are presented in detail in the Appendix, with an overview of the constructs below (Table 1).

Table 1 Green Marketing Scale

Construct	Nature	Measurement Focus	Sources
Green Product Design (GPD)	Independent Variable	Perception of product's ecological safety, energy efficiency, and durability.	Parasuraman(1996)、Caruana(2002)、Negash(2003)、Zheng(2013)、Xu(2015)、Zhao(2014)、Ellington(1989)、Peattie(1992)、Yan(2007)
Green Production (GP)	Independent Variable	Perception of the firm's use of clean technology and reduction of non-renewable resource consumption.	
Green Sales (GS)	Independent Variable	Perception of green logistics, eco-friendly packaging, and promotion of environmental protection during sales.	
Green Recycling (GR)	Independent Variable	Perception of the firm's commitment to product recovery, recycling, and responsible waste disposal.	
Green Consumption Awareness (GCA)	Mediating Variable	Consumer's knowledge, subjective attitude, and concern for environmental issues related to consumption.	Ellen(1991), Berger (1992)、Qiu(2012)
Consumer Purchasing Behavior (CPB)	Dependent Variable	Consumer's actual intention and willingness to choose and purchase green and eco-labeled products.	Chan(2001)

Data Collection

The data for this empirical study were collected through an extensive questionnaire survey distributed to general consumers. To achieve a representative sample base for the statistical analysis, the survey targeted individuals across diverse regions and demographic profiles. After filtering and quality checking, a final dataset consisting of 355 valid questionnaires was retained for the subsequent quantitative analysis.

IV. Data Analysis And Hypothesis Testing

Sample Descriptive Statistics

Before hypothesis testing, a descriptive analysis of the collected valid questionnaires(N=355) was conducted to understand the demographic profile of the research sample, including gender, age, education level, and monthly income (Table 2). The results show that the sample is reasonably representative, covering a diverse range of consumers to support the external validity of the study.

Table 2 Demographic Characteristics

Title	Options	Frequency	Percentage	Cumulative Percentage
Gender	Female	177	49.9%	49.9%
	Male	178	50.1%	100.0%
Age	20-40	93	26.2%	26.2%
	Under 20	91	25.6%	51.8%
	41-60	81	22.8%	74.6%
	Over 61	90	25.4%	100.0%
Education	Master's Degree and Above	112	31.5%	100.0%
	Bachelor's Degree	75	21.1%	21.1%
	College Diploma	81	22.8%	43.9%
	High School or Technical Secondary School	87	24.5%	68.5%
Average Monthly Income	Below 2000 yuan	90	25.4%	52.1%
	2001-5000 yuan	83	23.4%	75.5%
	5001-9000 yuan	95	26.8%	26.8%
	Above 9001 yuan	87	24.5%	100.0%
Consumption Frequency	Never	123	34.6%	34.6%
	Often	123	34.6%	69.3%
	Occasionally	109	30.7%	100.0%

Reliability and Validity Analysis

Reliability analysis was performed to assess the internal consistency of the measurement scales used in the questionnaire. We calculated the Cronbach's Alpha coefficient for all constructs. The results indicate that the alpha values for all variables, including Green Product Design, Green Production, Green Sales, Green Recycling, Green Consumption Awareness, and Consumer Purchasing Behavior, are all above the acceptable threshold of 0.7, confirming that the scales possess high reliability for quantitative analysis (Table 3).

Table 3 Reliability Analysis Results

Variable	Items	Cronbach's Alpha	Variable	Items	Cronbach's Alpha
Green Product Design(GPD)	4	0.809	Green Recycling(GR)	4	0.793
Green Production(GP)	4	0.768	Consumer Self-Enhancement(CS)	4	0.701
Green Sales(GS)	4	0.835	Consumer Purchasing Behavior(CPB)	4	0.713
Overall Reliability(OR)	24	0.92			

Construct validity was assessed through Factor Analysis. Prior to analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity were conducted to determine the suitability of the data for factorization. The KMO value was found to be greater than 0.7, and the Bartlett's Test was statistically significant ($p < 0.001$), supporting the appropriateness of the factor analysis. The results of the factor analysis demonstrate that the items loaded significantly onto their respective theoretical constructs, indicating good convergent and discriminant validity of the scales (Table 4).

Table 4 KMO and Bartlett test results

Bartlett's Test	KMO	0.894
	Approximate Chi-square	3918.434
	Degrees of Freedom	276
	Significance (p)	0.000

Correlation Analysis

This study uses the Pearson correlation coefficient to determine the relationship between the two, which is one of the most commonly used methods in correlation analysis (Table 5).

Table 5 Correlation Analysis

	GPD	GP	GS	GR	GCA	CPB
GPD	1	0.477***	0.494***	0.567***	0.598***	0.484***
GP		1	0.446***	0.512***	0.556**	0.471***
GS			1	0.491***	0.467**	0.450***
GR				1	0.536**	0.573***
GCA					1	0.627***
CPB						1
***. Correlation is significant at the 0.01 level (2-tailed).						

From the Pearson correlation analysis table, it can be seen that the significance level for the correlation among all variables is less than 0.01. The correlation coefficients between Green Product Design, Green Production, Green Sales, and Green Recycling and Green Consumption Awareness are 0.598, 0.556, 0.467, and 0.536, respectively, indicating a significant positive correlation between them. The correlation coefficient

between Green Consumption Awareness and Consumer Purchasing Behavior is 0.627, indicating a significant positive correlation between the two. Therefore, there are clear correlations between the factors, allowing for further analysis and research.

Regression Analysis and Hypothesis Testing

To test the proposed hypotheses (H1 to H5), Hierarchical Multiple Regression Analysis was performed using SPSS. From Table 6, it can be seen that the P-values (significance) for Green Product Design, Green Sales, Green Production, and Green Recycling are all less than 0.05, passing the significance test. The standardized coefficients are 0.324, 0.272, 0.107, and 0.161, respectively, all of which are greater than 0. This indicates that Green Product Design, Green Sales, Green Production, and Green Recycling are all positively correlated with Green Consumption Awareness.

Table 6 Regression Analysis of GPD/GP/GS/GR on GCA

	Unstandardized Coefficients		Standardized Coefficients	T	P
	B	Standard Error	Beta		
Constant	0.397	0.231		1.722	0.086
GPD	0.295	0.045	0.324	6.486	0.000
GP	0.316	0.055	0.272	5.730	0.000
GS	0.114	0.050	0.107	2.262	0.024
GR	0.167	0.053	0.161	3.163	0.002
a. Dependent Variable: Green Consumption Awareness					

According to the data analysis in Table 7, the P-value significance level for Green Consumption Awareness is less than 0.05, passing the significance test. At the same time, the standardized coefficient for Green Consumption Awareness is 0.627, which is greater than 0, indicating a positive correlation between Green Consumption Awareness and Consumer Purchasing Behavior.

Table 7 Regression Analysis of GCA on CPB

	Unstandardized Coefficients		Standardized Coefficients	T	P
	B	Standard Error	Beta		
Constant	2.002	0.159		12.578	0.000
GCA	0.561	0.037	0.627	15.133	0.000
a. Dependent Variable: Consumer Purchasing Behavior					

So the hypotheses H1, H2, H3, H4, and H5 are all supported, indicating that Green Product Design, Green Production, Green Sales, and Green Recycling all exert a significant positive influence on Green Consumption Awareness (Table 8).

Table 8 Hypothesis Testing

Hypothesis	Relationship Tested	p-value	Result
H1	GPD → GCA	p<0.001	Supported
H2	GP → GCA	p<0.001	Supported
H3	GS → GCA	p<0.01	Supported
H4	GR → GCA	p<0.001	Supported
H5	GCA → CPB		

V. Conclusions And Recommendations

Main Research Conclusions

This paper employed an empirical study to meticulously delineate the influence mechanism of Green Marketing on Consumer Purchasing Behavior, mediated by Green Consumption Awareness. The analysis of 355 valid responses unequivocally substantiated the proposed theoretical model. The key findings are summarized as follows:

Green Marketing Dimensions as Antecedents: The four core dimensions of Green Marketing—Green Product Design, Green Production, Green Sales, and Green Recycling—all demonstrate a robust positive and statistically significant impact on Green Consumption Awareness (GCA). This underscores the necessity for enterprises to holistically implement green strategies across their entire value chain to effectively influence consumer cognition.

The Pivotal Role of Awareness: Green Consumption Awareness (GCA) serves as a critical and significantly positive mediator that subsequently drives Consumer Purchasing Behavior (CPB). This confirms that corporate green efforts must first translate into heightened consumer awareness before yielding desired purchasing outcomes.

Theoretical Implications and Managerial Recommendations

Based on these empirical findings, this study offers both theoretical implications and actionable managerial recommendations aimed at enhancing corporate green marketing efficacy:

Reinforce the 'Green' Value Chain (Focus on Design and Production): Enterprises must move beyond mere surface-level claims and integrate sustainability at the fundamental level of product design and production. This necessitates adopting circular economy principles, utilizing eco-friendly materials, and investing in clean, resource-efficient manufacturing processes. The tangible reduction of environmental impact is imperative for building long-term consumer trust.

Elevate Consumer Awareness Through Transparency (Focus on Sales): The findings emphasize that the greatest leverage point is Green Consumption Awareness. Companies should launch transparent and persuasive Green Communication campaigns. These initiatives should clearly articulate the environmental benefits of their products, utilizing channels like eco-labeling and digital platforms to effectively educate consumers and foster a sense of shared environmental responsibility.

Strengthen End-of-Life Responsibility (Focus on Recycling): The significant impact of Green Recycling suggests that post-consumption responsibility is a growing concern for modern consumers. Companies should establish convenient, comprehensive, and potentially incentivized product take-back and recycling programs, thereby "closing the loop" and reinforcing their commitment to sustainability across the entire product lifecycle.

Limitations and Future Research Directions

While this study provides valuable insights, it is subject to certain limitations that delineate avenues for future investigation:

Cross-Sectional Data Restriction: This research utilized cross-sectional data collected at a single point in time, which restricts the ability to infer causality over a protracted period. Future studies should employ longitudinal designs to track changes in consumer behavior and awareness as green marketing practices evolve over time.

Contextual Scope: The sample predominantly reflects consumers within a specific geographical and economic context. Future research could broaden the scope to conduct comparative multi-country studies to assess the moderating effects of cultural differences or varying levels of environmental policy on the observed relationships.

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