

**INFLUENCE MECHANISM OF SOCIAL MEDIA ON CONSUMERS' GREEN
PURCHASING BEHAVIOR OF AIR CONDITIONERS IN CHINA**



**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF
PHILOSOPHY IN INDUSTRIAL BUSINESS ADMINISTRATION
KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG
BUSINESS SCHOOL**

**KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG
2025**

KMITL-2025-KBS-D-128-006

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ABSTRACT

Green purchasing has emerged as a critical strategic imperative for addressing global climate challenges and strengthening national energy resilience. Although digital social platforms have fundamentally transformed contemporary consumption patterns, the underlying pathways through which these social media affect green purchasing decisions remain insufficiently investigated. Building upon the theoretical framework of the Theory of Planned Behavior (TPB), this research incorporates price sensitivity as a key moderating variable and employs advanced multi-group structural equation modeling techniques to systematically analyze how social media engagement influences Chinese consumers' purchase of green air conditioners.

The empirical findings reveal three significant insights: First, social media interaction enhances sustainable product adoption intentions through three parallel psychological mechanisms, by shaping positive behavioral attitudes, reinforcing social normative pressures, and strengthening perceived control over purchasing decisions. Second, cost considerations demonstrate a substantial inhibitory effect, with price sensitivity acting as a persistent barrier to green technology adoption. Third, demographic analysis uncovers important heterogeneity in these effects— younger digital natives (particularly Generation Z) and female consumers exhibit greater responsiveness to social media-based environmental messaging, whereas budget-constrained households display more pronounced price elasticity in their consumption choices.

These theoretical contributions not only extend the conventional TPB model by incorporating media effects and economic constraints, but also provide actionable insights for policymakers seeking to use social media platforms to accelerate the transition toward sustainable consumption patterns. The study particularly highlights the need for targeted social

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media campaigns that address distinct consumer segments' psychological and economic barriers to green technology adoption.



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ACKNOWLEDGEMENT

The completion of this doctoral dissertation is attributed to the selfless assistance and support provided by many people during this long, fulfilling and arduous academic journey. Here, I would like to express my most sincere gratitude.

First of all, I would like to express my deepest gratitude to my supervisor, Assoc. Prof. Dr. Chalita Srinuan and Assoc. Prof. Dr. Nuttawut Rojniruttikul. Thank you for your meticulous guidance, professional advice and continuous encouragement throughout the research process. Your profound knowledge, rigorous academic attitude and insightful criticism and correction have enabled this research to be continuously improved. At the same time, I sincerely thank the professors of the defense committee for their valuable suggestions. Your insightful opinions have provided an important guarantee for improving the quality of the thesis.

I am deeply grateful to my family, my parents, my wife, my son and my daughter. Thank you for your selfless dedication and firm support all along, as well as your understanding and tolerance during the writing of my thesis. You are my strongest support and also the source of my continuous progress. Home is always the warmest academic haven.

Finally, I would like to express my gratitude to all the respondents who participated in this study. Without your support and cooperation, this research would be difficult to complete smoothly. This paper embodies the care and assistance of many teachers, relatives and friends. Here, I would like to pay the highest tribute to all those who have accompanied me through this academic journey.

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CHAPTER 1

INTRODUCTION

1.1 Background and Significance of the Study

1.1.1 Global climate change brings the trend of green consumption

The rapid development of the economy, especially the industrial economy, and coupled with the increase household consumption has led to increasingly severe environmental impacts (Hertwich 2011, Ivanova, Stadler et al. 2016, Olatunde, Okwandu et al. 2024). Overconsumption of resources exacerbates environmental pressure, leading to further deterioration of the environment (Joshua & Joshua 2017, Vega 2024, Chen & Usman 2025). Analysis by the International Energy Agency shows that global carbon dioxide emissions have been continuously rising. In 2023, global energy-related carbon dioxide emissions reached a record high of 37.4 billion tons, this trend is sufficient to stimulate people's urgent concern about environmental issues (Xu, Tong et al. 2024), as shown in Figure 1.1.

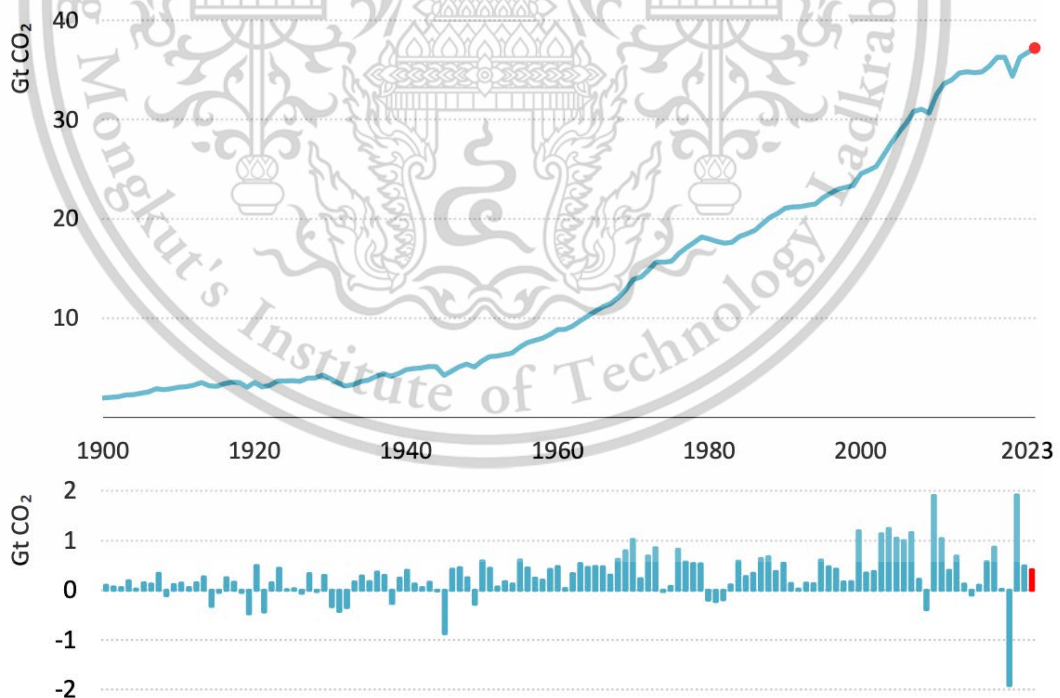


Figure 1.1: Global energy-related CO₂ emissions and their annual change, 1900-2023

According to the cohabitation data from the Joint Research Centre (JRC) of the European Commission, the top five carbon dioxide emitters in 2023 remained the same as in 2022, namely

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China, the United States, India, Russia and Brazil(Ahmed, Shuai et al. 2023). The combined carbon emissions of these five countries accounted for more than half of the global carbon emissions. According to the Blue Book of China's Low-Carbon Economic Development Report (2024-2025), the Chinese government has introduced policies focusing on the upgrading of low-carbon industries, technological breakthroughs, elimination of backward production capacity, and coordinated development, promoting the transformation of industries from passive emission reduction to active value addition(Dong, Zhang et al. 2025, Xiang & van Gevelt 2025). In 2024, the implementation of China's industrial energy conservation and emission reduction policies achieved remarkable results. In 2024, the national energy consumption per unit of GDP will decrease by 2.9% year-on-year, and the carbon dioxide emissions per unit of GDP will drop by 4%(Dong, Zhang et al. 2025). In recent years, China has not only vigorously promoted green transformation within the country, but also actively shared experiences and technologies with the international community, injecting impetus into the global promotion of green and low-carbon development and contributing Chinese wisdom and strength to global sustainable development(Xiang & Van Gevelt 2025). Green and sustainable development has become a hot topic of global concern, and most countries are acting.

In order to address environmental issues, green and low-carbon development has become a consensus among more and more people, generating strong interest in sustainable development and environmental protection(Green & Stern 2017, Chen & Usman 2025). The Paris Agreement has set a clear target of limiting the temperature rise to 2°C, sending a clear signal for global green and low-carbon transformation(Santos, Ferreira et al. 2022). Under the constraints of such environmental trends and goals, everyone expects to contribute to environmental protection(Rea & Frickel 2023). Individual consumption behaviors have significant impacts on the environment(Olatunde, Okwandu et al. 2024), green consumption is the important part of the system for adopting a low-carbon lifestyle(Pettifor, Agnew et al. 2023), serving as a crucial means for individuals to implement green environmental goals(Lorek & Spangenberg 2014). In recent years, there has been a rapid rise in green lifestyles, with the concept of green purchasing gradually gaining popularity(Zhang, Lahr et al. 2016). According to the China E-commerce Green Development Report over 60% of respondents are familiar with green consumption, with the understanding of "green consumption" among the post-90s and post-00s generations significantly higher than other age groups, reaching 70% and 79%, respectively(Caiyi, Xiaoyong et al. 2022). This indicates that younger generations have a higher level of awareness of green consumption(Sun & Wang 2020). At the same time, green purchasing has become a research hotspot. Past studies have focused on analyzing the factors influencing green purchasing behavior, understanding how consumer intentions translate into consumption behavior, and exploring methods to enhance willingness for green consumption.

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More and more companies incorporate Low-Emission Development Strategies (LEDS) into their corporate development strategies, where ecological environmental protection and performance growth coexist (Rocha & Falduto 2019, Jaber, Anderson et al. 2020). Chinese air conditioning company (Name: Gree) takes "core technology promoting green manufacturing" as its core. As early as 2013, Gree Electric Appliances announced the strategy of making the sky bluer and the earth greener which has injected a more arduous green and low-carbon mission into the company (Wang, Li et al. 2024). The company possesses 40 "internationally leading" technologies, among which 38 are closely related to green energy conservation. Meanwhile, the products are distributed in more than 190 countries and regions around the world, and the number of patents exceeds 110,000 (Wang, Li et al. 2024). The company's green energy business achieved a year-on-year growth of 51.32% in its semi-annual report for 2023, highlighting its comprehensive green development throughout the industrial chain. The "Photovoltaic Direct Drive Variable Frequency Centrifuge System" of Gree Company was appraising as a "global first" and "internationally leading" in 2013. It integrates the functions of photovoltaic power generation, consumption, storage and regulation, providing a perfect integrated solution for the use of clean energy and intelligent management. Relying on the efficient utilization of clean energy, Gree's photovoltaic air conditioners also provide strong technical support for reducing building energy consumption.

Social media provides new scenarios for green consumption. Thanks to the rapid development of the internet, new media, and social media have increasingly become important marketing channels and tools (Mahoney & Tang 2024). Enterprises have begun marketing and promoting green products on new media to encourage consumers to engage in green consumption (Strähle & Gräff 2016). Just like China's air conditioner manufacturer Gree, the company closely follows consumption trends, optimizes its sales model, and enhances its online sales model through forms such as live-streaming sales, community marketing, cooperation with private domain influencers, and precise advertising placement, thereby increasing its influence among the younger generation (Wang, Li et al. 2024). Therefore, understanding the role of social media marketing in promoting green products and exploring the impact of social media marketing on consumer purchase behavior of green products has become an important research focus. People's lives are also gradually moving towards green consumption (Sun & Wang 2020). Environmental protection organizations, science popularization bloggers, brand official accounts, etc. convey the core values of green products, such as the energy efficiency parameters of energy-saving home appliances and the environmental protection principles of degradable materials and specific methods of sustainable lifestyles, such as "zero waste" shopping guides and tips for transforming old items to users through short videos, pictures and text, etc., helping consumers establish a scientific understanding of green consumption (Seferian

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2021). Social media influences people's thoughts, attitudes, and values, thereby influencing their behavior (Sun & Wang 2020, Armutcu, Zuferi et al. 2024). However, transitioning from the idea of green purchasing to action requires deeper research, especially as new social ways continue to innovate (Feng, Lai et al. 2022). Hence, there is a need to explore the mechanism of social media's influence on green consumption, identify key influencing factors, and promote the transformation of green purchasing intentions into actions, thereby better promoting green consumption.

It is urgent and of great significance to study the consumption of green air conditioners. The International Energy Agency estimates that "space cooling" — primarily air conditioners, but also including fans — consumed approximately 2,100 terawatt-hours (TWh) of electricity in 2022 (MOUNTAIN & STITUTE 2020). To provide context, global electricity consumption in 2022 was about 29,000 TWh. This means air conditioners accounted for approximately 7% of global electricity use (MOUNTAIN & STITUTE 2020). According to preliminary statistics from the International Energy Agency (IEA), there are currently around 2 billion air conditioning units worldwide, by 2050, this number is projected to nearly triple, exceeding 5.5 billion units, leading to even greater energy consumption for cooling (Isaac & Van Vuuren 2009, MOUNTAIN & STITUTE 2020). Therefore, prioritizing green purchasing of air conditioners is both urgent and significant. As a representative household appliance, air conditioners, like refrigerators and water heaters, have become essential household necessities and typical high-energy-consumption products (Wang, Chen et al. 2020, Oye 2022). Researching green purchasing behavior for air conditioners can reflect people's green purchasing concepts. Additionally, social media plays a notable role in shaping consumer perceptions of low-carbon attributes such as variable-frequency technology and eco-friendly technologies by disseminating green purchasing ideals (Wahid & Gunarto 2022, Eker, Mastrucci et al. 2023). This, in turn, drives a shift toward low-carbon pathways in air conditioner consumption. However, current studies on the mechanisms by which social media influence green air conditioner purchases remain limited, highlighting the need for further research in this area.

To address these gaps, this study aims to explore how social media reshape green-consumption trends, with a focus on energy-efficient air-conditioner purchases, extending the TPB by integrating price perception as a core construct. This study employs an investigation of 600 Chinese urban households engaged in green air conditioner. Through structural equation modelling (SEM), this study applies structural equation modeling to quantify the effects of social media exposure, attitudes, subjective norms, perceived behavioral control, and price sensitivity on green purchase intentions and actual eco-friendly behaviors. To uncover

heterogeneity, this study conducts multi-group SEM analyses across age, income, and gender, highlighting nuanced demographic differences in these mechanisms.

This research endeavors to bridge existing knowledge gaps surrounding environmentally conscious consumer behavior within the air conditioning market. Firstly, it aims to quantify the prevalence of green purchasing practices among consumers in this domain, a metric of considerable interest to industry stakeholders, policymakers, and environmental advocates. Secondly, the study seeks to identify and analyze the specific determinants influencing such behavior, encompassing both direct and indirect factors. This nuanced understanding holds significant implications for the development of targeted interventions aimed at promoting sustainability within the market. Lastly, the research will undertake a rigorous evaluation of a proposed theoretical framework's efficacy in elucidating the complexities of green purchasing behavior concerning air conditioning units. The validation of this model is paramount for its potential utility in informing strategic decision-making processes and fostering environmentally responsible practices within the industry.

1.2 Research Questions

This dissertation focuses on the impact of social media on green consumption, addressing the following key research questions:

Question 1: How does social media influence consumers' purchase intention toward green air conditioners, and what are the underlying mechanisms?

The study centers on the influence mechanisms, with the abstract emphasizing the extension of the Theory of Planned Behavior (TPB) model to uncover the indirect pathways through which social media affects purchase intention. It examines whether social media exposure indirectly influences purchase intention through core TPB variables, including attitude, subjective norm, and perceived behavioral control.

Question 2: How does price perception moderate the effect of social media on green purchasing behavior?

The study integrates price perception as an additional variable into the TPB model, testing its moderating role on the main effect. The analysis investigates whether price sensitivity weakens the positive driving effect of social media on green purchasing behavior.

Question 3: Are there differences in the influence of social media on green purchasing behavior across demographic groups (age, gender, income)?

This study employs Chinese consumer data to conduct multi-group analysis, further revealing the mechanisms through which social media influences green purchasing behavior.

among different demographic segments (age, gender, income). The aim is to clarify the distinct purchasing needs and motivations across these groups.

1.3 Research objectives

Objective 1: To uncover the mechanisms through which social media influences consumers' purchase intention toward green air conditioners.

This study validates the extended Theory of Planned Behavior (TPB) model by examining whether social media exposure indirectly affects purchase intention through key TPB variables—attitude, subjective norm, and perceived behavioral control. The research clarifies the mediating role of social media in green consumption decision-making, addressing the theoretical gap in applying the TPB model to digital social platforms.

Objective 2: To examine the moderating effect of price perception on social media's influence.

The study analyzes whether price perception weakens the positive impact of social media on purchase intention and quantifies its moderating strength. By incorporating price perception as an additional variable, the research broadens its analytical perspective, refining the applicability of the TPB model in energy-efficient product consumption contexts and revealing the interaction between economic factors and social media.

Objective 3: To identify differential effects across demographic groups.

Using multi-group structural equation modeling (SEM), the study compares how age (e.g., intergenerational differences among Gen Z, Gen Y, and Gen X), gender, and income levels moderate the pathways through which social media exerts its influence. It identifies high-sensitivity groups (e.g., women, Gen Z) and price-sensitive segments (e.g., low-income consumers), providing evidence for targeted green marketing strategies.

Objective 4: To propose policy recommendations for promoting green air conditioner consumption via social media.

Building on empirical findings, the study designs actionable social media-based interventions (e.g., information dissemination strategies, price incentive tools) to encourage consumer adoption of energy-saving air conditioners. The research translates theoretical models into practical policy frameworks, contributing to global green development, energy security, and climate goals.

1.4 Expected Benefit

This research offers two key contributions to the exploration of energy-efficient consumption within digital-platform settings. First, we expand the Theory of Planned Behavior (TPB) by incorporating price sensitivity—defined as price perception—into the original framework, thereby strengthening its explanatory capacity in context-dependent consumption scenarios and providing a new theoretical framework for future research on green consumer behavior. Second, we enhance the empirical inquiry by integrating Chinese consumers' actual demand for energy-efficient air conditioners with a thorough regional segmentation analysis to guarantee comprehensive market representation, and by utilizing multi-group structural-equation modeling (SEM) to evaluate social media's influence among gender, income, and age cohorts. Collectively, these methodological advancements strengthen theoretical understanding of how digital platforms influence sustainable consumption behaviors and offer practical guidance for customized green marketing strategies.

For Academic Advancement: This study significantly contributes to academic literature by offering empirical evidence and theoretical insights into the determinants of green purchasing behavior, particularly within the realm of household appliance purchases. We expand the Theory of Planned Behavior (TPB) by incorporating price sensitivity—conceptualized as price perception—into the original model, thereby boosting its explanatory capacity in situation-specific consumption scenarios and providing an innovative framework for subsequent research on eco-friendly consumer behavior, which enriches scholarly understanding of the mechanisms underpinning green purchasing decisions, thereby advancing theoretical frameworks in the field of consumer behavior.

For Consumers: The findings of this research empower consumers to make more informed and environmentally responsible purchasing decisions. By understanding the factors that influence green purchasing behavior, individuals can overcome barriers and align their purchasing choices with their sustainability values. This knowledge enables consumers to actively contribute to environmental preservation efforts and foster positive environmental outcomes through their everyday actions.

For Manufacturers: This study provides valuable insights for manufacturers seeking to meet the growing demand for sustainable products in an increasingly environmentally conscious market. By identifying consumer motivations and barriers to green consumption, manufacturers can tailor their product offerings and marketing strategies to align with consumer preferences, thus enhancing competitiveness and driving innovation in sustainable product development.

For Government Policy: The research findings offer crucial evidence to inform government policy aimed at promoting sustainable consumption practices. By understanding

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the factors influencing green purchasing behavior, policymakers can develop targeted interventions, regulations, and incentives to encourage environmentally friendly consumer choices. This can lead to the development of more effective policies and initiatives that drive widespread adoption of sustainable consumption practices, thereby contributing to broader environmental protection goals.

1.5 Hypothesis of research

Hypothesis 1a (H1a). Social media has a positive impact on subjective norm.

Hypothesis 1b (H1b). Social media has a positive impact on behavioral attitude.

Hypothesis 1c (H1c). Social media has a positive impact on behavioral intention.

Hypothesis 1d (H1d). Social media has a positive impact on perceptual behavior control.

Hypothesis 2 (H2). Behavioral attitude has a positive impact on behavioral intention.

Hypothesis 3a (H3a). Perceptual behavioral control has a positive impact on behavioral intention.

Hypothesis 3a (H3b). Perceptual behavioral control has a positive impact on price perception.

Hypothesis 4 (H4). Product price perception has a negative impact on behavioral intention.

Hypothesis 5 (H5). Subjective norm has a positive impact on behavioral intention.

Hypothesis 6 (H6). Behavior intention has a positive impact green purchasing behavior.

1.6 Scope of Research

(1) Theoretical scope: The scope of this research is to investigate the influence mechanism of social media on consumers' green purchasing behavior of air conditioners. The study will explore how social media platforms affect consumers' attitudes, perceptions, and intentions towards environmentally-friendly air conditioner purchases. It will examine factors such as behavioral attitudes, subjective norms, perceived behavioral control, price perception, and the role of social media in shaping these variables. The heterogeneity effects of demographic variables (age, gender, income) were examined using the multi-group structural equation model (multi-group SEM), without combining qualitative interviews or other mixed methods.

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Additionally, the research will analyze the direct and indirect effects of social media on consumers' green purchasing behavior, considering both theoretical frameworks such as the Theory of Planned Behavior (TPB) and empirical evidence from previous studies. The investigation will focus on understanding the mechanisms through which social media channels influence consumers' decisions, providing insights that can inform businesses, policymakers, and marketers in promoting sustainable consumption practices within the air conditioning industry.

(2) Empirical scope: The research subjects of this study are Chinese consumers, focusing on their purchasing behavior of green air conditioners. Due to the economic growth in China in recent years, people's consumption of air conditioners has been continuously increasing, and air conditioners have almost become essential household appliances. Therefore, choosing air conditioners as the research subjects of this study is highly representative, similar to energy-consuming products such as refrigerators and water heaters. In terms of geographical regions, it is divided according to the conventional zoning method in China into six parts: North China, Northeast China, Northwest China, East China, South China and Southwest China. The air conditioners mentioned in this paper mainly refer to those used in households and do not involve large air conditioners or refrigerators used in industries or factories.

1.7 Definition of Terms

1. Social media refers to digital platforms and technologies designed to enable users to create, share, and interact with content, as well as connect and communicate with others over the internet. Central to its definition is the emphasis on user-generated content and interactive communication, distinguishing it from traditional media where content distribution is primarily one-way. These platforms foster the formation of online communities and networks, supporting diverse forms of engagement such as commenting, liking, sharing, and collaborating.

2. Green Purchasing refers to the intentional and conscious decision-making process by which consumers select products, services, or brands that prioritize minimizing negative environmental impacts across their lifecycle—from raw material extraction and production to use, disposal, or recycling. This behavior is driven by a commitment to sustainability, often rooted in environmental awareness, ethical values, or a desire to support eco-friendly practices.

3. Air Conditioner: (often abbreviated as AC or A/C) is a mechanical device designed to regulate indoor environmental conditions, primarily by cooling, dehumidifying, and filtering air, while some systems also provide heating. Its core function is to maintain a comfortable, stable temperature and air quality within enclosed spaces, such as homes, offices, vehicles, or commercial buildings.

4. Behavioral attitude refers to an individual's overall evaluation or perception of a specific behavior, including their beliefs, feelings, and intentions associated with it, which refers to an individual's positive or negative evaluation of performing a specific behavior. It reflects the degree to which a person believes the behavior will lead to desirable outcomes (or undesirable ones) and thus influences their intention to engage in that behavior.

5. Perceptual behavior control refers to individuals' perceptions of their ability to perform a particular behavior and their confidence in their capability to control external factors affecting that behavior. It reflects their belief in their capacity to overcome barriers, leverage resources, and perform the behavior as intended, given both internal and external constraints.

6. Subjective norm refers to an individual's perception of social pressure or expectations from significant others, that refers to an individual's perceived social pressure to perform or not perform a specific behavior. It captures the extent to which the individual believes important people in their life (e.g., family, friends, colleagues, or society at large) expect them to act in a particular way, and their motivation to comply with those expectations

7. Behavioral intention refers to an individual's readiness or willingness to engage in a particular behavior, which is considered a direct precursor to actual behavior. That refers to an individual's conscious plan or motivation to engage in a specific behavior. It represents the "bridge" between attitudes, social influences, and perceived control, and serves as the most immediate predictor of whether a behavior will actually occur.

8. Price perception refers to consumers' subjective evaluation or judgment of the cost or price associated with a product or service, including their perceptions of value, affordability, and fairness. Which refers to a consumer's subjective interpretation of a product, service, or brand's price, based on their personal evaluations, expectations, and contextual factors—rather than the objective monetary value stated on the price tag. It reflects how individuals perceive fairness, value, or affordability relative to their needs, past experiences, and comparisons to alternatives.

CHAPTER 2

LITERATURE REVIEW

2.1 Green Purchasing

2.1.1 Definition of Green Purchasing

In the face of increasingly severe ecological crises, the development of a green economy has become a global consensus. The United Nations Framework Convention on Climate Change (UNFCCC) in 1992 recognized that human activities have significantly increased the concentration of greenhouse gases in the atmosphere, urging countries to collectively strive to maintain atmospheric greenhouse gas concentrations at stable levels (Protocol 1997). The Kyoto Protocol, adopted in 1997, supplements the UNFCCC by setting specific targets and restrictions on greenhouse gas emissions, while also introducing carbon trading and clean development mechanisms. The Paris Agreement, enacted in 2015, is the latest global climate change agreement aimed at achieving greenhouse gas emission reduction goals through global cooperation and coordinated action, while also enhancing resilience to climate change (Falkner 2016). These three agreements are referred to as the three major global low-carbon agreements, providing guidelines and rules for the development of low-carbon economies and production and lifestyles.

The development of a low-carbon economy involves both corporate and individual behavior, with low-carbon consumption being considered an important contribution by the public to a low-carbon economy. In 1992, the United Nations Agenda 21 identified the "unsustainable production and consumption patterns" as the root cause of global environmental degradation (Barber 2005). In 1994, the United Nations Environment Programme published a report titled "Policy Factors for Sustainable Consumption," defining the concept of green consumption as follows: "Providing relevant products and services to meet basic human needs, improve quality of life, while minimizing the use of natural resources and toxic materials, and minimizing waste and pollution generated throughout the lifecycle of products or services, thus not jeopardizing the needs of future generations." (Fan 2023). Domestic scholars also define sustainable consumption based on the definition of sustainable development, defining sustainable consumption as "consumption that meets the development needs of contemporary people without harming the ability of future generations to meet their own development needs."

Green consumption, also known as sustainable consumption, starts from meeting ecological needs and is characterized by resource conservation and environmental protection (Jackson 2014). This concept emphasizes thrift, resource conservation, the selection

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of efficient and environmentally friendly products and services to reduce resource consumption and environmental pollution (Jackson 2014, Lorek and Spangenberg 2014). In the current consumer landscape, there is a growing emphasis on product carbon emissions, carbon footprint, environmental labels, and the use of renewable resources. Many experts approach the study of green consumption from two micro-level perspectives, focusing on consumer subjects (consumers) and consumer objects (products and services) (ElHaffar, Durif et al. 2020, Lopes, Pinho et al. 2024).

In summary, we define green purchasing as follows: Green Purchasing refers to the intentional and conscious decision-making process by which consumers select products, services, or brands that prioritize minimizing negative environmental impacts across their lifecycle—from raw material extraction and production to use, disposal, or recycling. This behavior is driven by a commitment to sustainability, often rooted in environmental awareness, ethical values, or a desire to support eco-friendly practices.

In this study, "green purchase" specifically refers to the environment-oriented decision-making behavior of consumers regarding air conditioning products. Green purchase is not only a functional choice but also a symbolic practice for consumers to convey values through consumption behavior. In the social media environment, the green purchasing decision-making process of consumers has been further "socialized", and this study further studies the impact of green purchasing.

2.1.2 The influencing factors of green consumption

Due to the pivotal role of influencing factors in unraveling the patterns of green purchasing behavior, scholars worldwide have conducted in-depth research on the influencing factors of green purchasing behavior. In recent years, research on the influencing factors of green purchasing has made great progress. It can be concluded that factors include macroscopic factors, microscopic factors, subjective factors, and objective factors.

When studying the influencing factors of consumer subjects, experts consider factors such as consumers' environmental attitudes (Al Mamun, Mohamad et al. 2018), perceptions of social, political, and legal changes (Leonidou, Leonidou et al. 2010), as well as willingness and ability to pay (Steg & Vlek 2009). Regarding consumer objects, experts analyze factors such as raw materials of products, product eco-labels (Cai, Xie et al. 2017), green product quality (Cai, Xie et al. 2017), green purchasing channels, and green product availability. The choice of green purchasing affects companies' production decisions. When consumers prioritize environmentally friendly, energy-efficient, and low-carbon products and services, it prompts companies to produce more green products to enhance their competitiveness and meet market demand. This, in turn, influences companies' strategic choices and the strategic layout of the

entire industry supply chain for green materials, green production, and green sales(Wu & Long 2024).

2.1.2.1 Different considerations for influencing factors

Regarding consumer objects, experts analyze factors such as raw materials of products, product eco-labels, green product quality, green purchasing channels, and green product availability(Cai, Xie et al. 2017, Wang, Li et al. 2019). Complementary factors include product design and functionality (e.g., user-friendly features that enhance daily convenience while reducing environmental impact, such as energy-efficient appliances with intuitive controls)(Lin & Huang 2012), brand reputation and transparency(Khan, Khalid et al. 2021), and post-purchase considerations(Polas, Kabir et al. 2024) ,such as recycling, take-back programs, or repair services that extend product lifecycles. For example, a smartphone with high recycled-content materials may fail to attract green consumers if its battery life is perceived as inferior, underscoring the need for holistic product performance(Polas, Kabir et al. 2024). Green purchasing objects can be services or products. Green purchasing services are typically represented by tourism services. While many experts combine green purchasing with tourism, green tourism's object and content are services, differentiating it from the green purchase of specific products(Ali, Ullah et al. 2023, Tang, Han et al. 2023, Sharma, Chen et al. 2024). Green consumption's object is products, considering more immediate and short-term effects, whereas green purchasing services are aimed at longer-lasting effects. Therefore, their usage scenarios, feedback, utility, etc., differ. This study focuses on green purchasing of products.

Regarding company objects, with the increasing environmental awareness among consumers, their attention to environmental issues and green purchasing is also rising(Rustam, Wang et al. 2020). Consumers automatically supervise and evaluate companies' environmental behavior(Yue, Sheng et al. 2020). With the convenience and flatness of current new media, consumer supervision and evaluation will significantly impact a company's image. To maintain their reputation and image, companies are transitioning to environmentally friendly, energy-efficient, and low-carbon production methods. The choice of green purchasing affects companies' production decisions. When consumers prioritize environmentally friendly, energy-efficient, and low-carbon products and services, it prompts companies to produce more green products to enhance their competitiveness and meet market demand(Ülkü & Hsuan 2017). This, in turn, influences companies' strategic choices and the strategic layout of the entire industry supply chain for green materials, green production, and green sales(Feng, Lai et al. 2022). Beyond this, consumer-driven innovation plays a critical role: feedback from green consumers can drive R&D investments in breakthrough technologies(Wang, Qiao et al. 2025). Additionally, regulatory and policy environments shape both consumer and corporate behavior—for instance, carbon taxes or subsidies for green manufacturing can amplify market demand for sustainable products while penalizing non-compliant firms(Wahyuni, Hazizah et

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al. 2024). Finally, the rise of digital tools enhances transparency, enabling consumers to make more informed green choices and pressuring companies to validate their eco-claims with data(Keke 2025). Together, these dynamics create a feedback loop where consumer preferences, corporate strategies, and regulatory frameworks co-evolve to accelerate the transition toward a green economy.

2.1.2.2 Different research perspectives on influencing factors

From a research perspective, green purchasing can be examined from both macro and micro perspectives. At the macro level, it considers carbon emissions from the perspective of the entire society, industry layout, market selection, and the formulation of policies related to green production and consumption(Pedersen 2000, Ding, Ma et al. 2024). At the micro level, it analyzes the specific effects of consumer behavior on green consumption, driving the development of the green economy through individual actions(Huppel & Ishikawa 2009). This perspective focuses more on the individual viewpoint rather than corporate behavior, analyzing consumer psychology, beliefs, and behavior.

From a macro perspective, scholars' research on green purchasing mainly focuses on the low-carbon economy(Chen, Long et al. 2014, Schanes, Giljum et al. 2016, Ding, Jiang et al. 2018), the production, circulation, and recycling chain of green products(Coskun, Ozgur et al. 2016, Tseng 2016), and green policies issued by governments and various associations and organizations(Kim, Yeo et al. 2012).

From a micro perspective, green consumption within society is influenced by numerous individual consumption behaviors, each characterized by unique personal traits. Many studies have scrutinized green purchasing behavior from a micro-level perspective(Choi & Johnson 2019, Do Paco, Shiel et al. 2019). Some argue that individual green purchasing behavior is predominantly influenced by two factors—consumer subjects (consumers) and consumer objects (products and services), with consumer subject factors encompassing consumers' environmental attitudes(Al Mamun, Mohamad et al. 2018).

In summary, it is found that many scholars have explored demographic variables, personal values, external environmental and product factors, and other comprehensive factors. In the perspective of socio-demographic variables, scholars demonstrate through empirical analysis that there is no relationship between marital status and environmental consciousness, while the level of consumer education may partially influence environmental behavior(Diamantopoulos, Schlegelmilch et al. 2003). Mostafa found that gender has an influence on green purchasing behavior, while other demographic factors are unrelated to green purchasing behavior(Mostafa 2007).

(1) Socio-demographic factors

In the perspective of socio-demographic variables, scholars demonstrate through empirical analysis that there is no relationship between marital status and environmental consciousness, while the level of consumer education may partially influence environmental behavior (Diamantopoulos, Schlegelmilch et al. 2003). Mostafa found that gender has an influence on green purchasing behavior, while other demographic factors are unrelated to green purchasing behavior (Mostafa 2007).

(2) Individual value factors

In exploring individual values, Albayrak et al. found that skepticism has a negative influence on green purchase behavior and indicated that the effectiveness of green perception is deeper than the impact of consumers' concern for the environment (Albayrak, Caber et al. 2011). Kim et al. found that perceived consumer efficacy, reference group influence, and perceived market conditions are significant predictors of green purchasing behaviors, while the impacts of environmental concern and socioeconomic factors are constrained (Kim, Yeo et al. 2012). Gregory-Smith et al. researched that consumers' subjective perceptions of product environmental impacts, attitudes toward environmentally friendly products, and perceived importance of product environmental impacts are important variables influencing green purchasing behavior (Gregory-Smith, Manika et al. 2017). Biswas & Roy found that consumer perceptions of price and knowledge are the primary determinants of sustained green purchasing behaviors using the theory of consumption values (Biswas & Roy 2015). Yadav & Pathak point out that the subjective norm variables and perceived behavioral control of consumers in the Theory of Planned Behavior significantly influence the intention for green purchases (Yadav and Pathak 2016). Emekci et al. found that environmental concern, environmental knowledge, and perceived consumer effectiveness (PCE) are the important factors which have a high influence on attitudes and green purchasing (Emekci 2019).

(3) External environmental and product Factors

From the perspective of the external environment, scholars point out that environmental knowledge and consumer perceived utility can influence green purchasing behavior, emphasizing the importance of green attributes in promoting green products (Sharma & Foropon 2019). Green purchasing object factors include product eco-labeling (Chen 2010, Chi 2021), the quality of green products (Joshi & Rahman 2015), and green product availability (Testa, Pretner et al. 2021).

Researchers also found that the intention of green purchasing is related to the level of economic development of a place; the higher the economic advancement of a region, the more robust individuals' inclinations towards green consumption (Xie, Wang et al. 2022).

(4) Composite factor

Focusing on psychological factors, researchers have found that emotional value, perceived marketplace influence, subjective norm, and attitude are key predictors of consumers' green purchase intention (Joshi, Uniyal et al. 2021). Health-conscious green purchasing behavior, resource-conscious green purchasing behavior, and socially conscious green purchasing behavior are important factors of green buying (Kim, Yeo et al. 2012). Price and knowledge are determined factors of green purchasing behaviors (Biswas & Roy 2015), Price sensitivity and social value affect decision-making on green consumption (Biswas & Roy 2015). Social media plays an important role in stimulating the green purchasing of the younger generation, shaping their subjective norms and perceptions (Xie & Madni 2023).

To study the driving factors of green consumption, some scholars systematically examine 113 articles published between 2000 and 2018 in leading peer-reviewed English-language academic journals and find seven categories (Behavioral factors, Personal capabilities, Product and producer related factors, Intrapersonal values—Environment, Intrapersonal values—non-environment, Socio-demographic variables and Context) of drivers to green consumption (Testa, Pretner et al. 2021). Similarly, by reviewing the achievements of different authors, it was found that many papers analyzed the factors influencing green purchasing from different perspectives, which are shown in the following table 2.1.

Table 2.1 Factor Dimensions

	Factor Dimensions	Reference
1	Behavioral factors, Personal capabilities, Product and producer related factors, Intrapersonal values—Environment, Intrapersonal values—non-environment, Socio-demographic variables and Context	(Testa, Pretner et al. 2021)
2	Personal values, social influence, situational factors, product attributes and behavioral habits	(Schwartz, D.2020)
3	Personal value systems (egocentrism, post-materialism), knowledge and cognitive abilities, emotional and attitudinal tendencies, social normative pressure, product availability and information, economic incentives and constraints, policy and regulatory environment, and technological convenience factors	(Tankha 2017)
4	Personal values and attitudes, social norms and influences, situational factors, behavioral habits and convenience, knowledge and information acquisition, individual abilities and resources	(Stern, Dietz et al. 1995)

Table 2.1(continue)

	Factor Dimensions	Reference
5	Personal Values, Environmental Beliefs, Personal Norms, Attitudes, Subjective Norms	(Stern, Dietz et al. 1995)

2.1.3 Research methods for green consumption

In the section on research methods for green consumption, various methodologies and approaches used by researchers to investigate green consumption phenomena are discussed. This section typically outlines the strategies and techniques employed to gather data, analyze findings, and draw conclusions regarding green consumption behavior.

Common research methods in this area

Surveys and Questionnaires: Researchers often use surveys and questionnaires to collect data from a large sample of individuals regarding their attitudes, perceptions, and behaviors related to green consumption. These surveys may be administered online, through interviews, or via mail.

Experimental Studies: Experimental designs allow researchers to manipulate variables and observe the effects on participants' green consumption behavior. This approach helps establish cause-and-effect relationships and test hypotheses about factors influencing green consumption.

Case Studies: Case studies involve in-depth examination of specific individuals, groups, or organizations engaged in green consumption practices. Researchers may conduct interviews, observations, and document analysis to gain insights into motivations, challenges, and outcomes associated with green consumption.

Focus Groups: Focus groups bring together a small group of participants to discuss their opinions, experiences, and perceptions regarding green consumption. This qualitative research method allows researchers to explore underlying motivations, social influences, and barriers to green consumption in a group setting.

Content Analysis: Content analysis involves analyzing texts, such as news articles, advertisements, or social media posts, to identify themes, trends, and discourses related to green consumption. This method helps researchers understand how green consumption is portrayed in various media outlets and its impact on public perceptions.

Statistical Analysis: Statistical techniques, such as regression analysis or structural equation modeling, are used to analyze quantitative data collected through surveys or experiments. These methods help identify relationships between variables and determine the strength of associations in predicting green consumption behavior. which are shown in the following table 2.2.

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By employing these research methods, scholars can gain comprehensive insights into the complexities of green consumption behavior, contributing to the development of theories, strategies, and policies aimed at promoting sustainable consumption practices.

Table 2.2 Finding from Several Research perspectives

Research perspective	Finding	Reference
Social cognitive theory (SCT) and value-beliefs-norms (VBN),	Among young consumers, beliefs and norms are more influential in green consumption behavior than consumption competence.	(Jahari, Hass et al. 2022)
Theory of planned behavior (TPB) and the value-belief-norm (VBN) theory	VBN- and TPB-derived psychological variables (adverse consequences, ascribed responsibility, personal norms, subjective norms, attitude and perceived behavioral control)) moderate the impact of altruistic, biospheres, and egoistic principles on intention to engage in eco-friendly purchases.	(Jebarajakirthy, Sivapalan et al. 2024)
“Stimulus-Organism-Response (SOR)” model	Social media has stimulated the green consumption of the younger generation, forming their subjective norms and perceptions.	(Xie & Madni 2023)
TPB	To explain the impact of Social Media on green consumption, and partial least squares (PLS) is used for the analysis.	(Pop, Săplăcan et al. 2020)
Structural equation modeling (SEM) - artificial neural network modeling and bootstrapping	Social media and green concept significantly enhance the willingness of green consumption. The relationship between social media marketing and green consumption willingness is influenced by the intermediary role of green attitude and the regulatory effect of green trust.	(Wu & Long 2024)

Research on green consumption behavior encompasses not only multiple disciplines such as marketing, environmental science, psychology, and management but also includes theories from disciplines such as communication studies. Therefore, it is feasible to use an expanded TPB theoretical model to study green consumption.

2.1.4 Problems and challenges faced by green consumption

(1) The public's understanding of green consumption is not comprehensive, and their ability to identify green products is insufficient. Despite the increasing popularity of green consumption, consumers still lack a comprehensive understanding of it. Although countries have established top-level designs for green product certification, there are still numerous issues in practice. These include the existence of multiple green product-related certifications with unclear differences and connections, as well as insufficient alignment with international standards. Consequently, the standard certification system has not been widely recognized by consumers. According to the 2022 China Sustainable Consumption Report, consumer awareness of other green and sustainable-related certification standards and labels does not exceed 50%, except for the "Chinese Energy Efficiency Label." Only 35.91% of respondents have the green product certification, which are shown in the following figure 2.1.

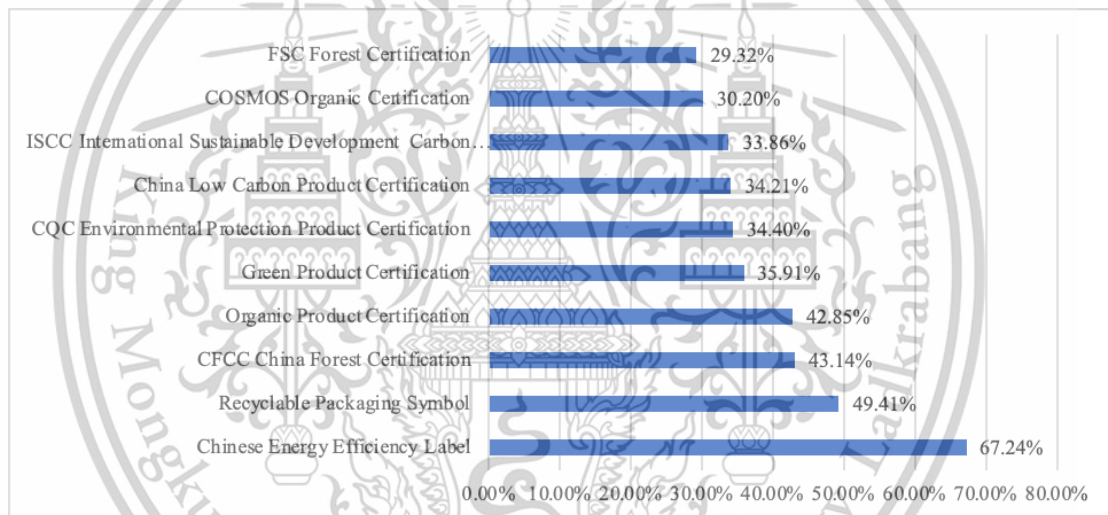


Figure 2.1 :Statistics of respondents' awareness of the green logo

(1) It has been observed through statistics that consumers possess limited understanding of green consumption standards. Thus, there is a pressing need to actively promote the dissemination and awareness of green consumption indicators to consumers. Additionally, the current abundance of green consumer labels, coupled with varying certification standards, often leads to consumer confusion. Therefore, further standardization and categorization are necessary to facilitate the easy identification and promotion of green labels.

(2) Some businesses engage in concept hype and deception, misleading consumers with subpar products. According to the "Shandong Resident Green Consumption Behavior White Paper" released by the Qilu Evening News in 2023, the main obstacles to resident green consumption are the inability to distinguish between genuine and counterfeit green products

and skepticism towards manufacturers' claims about green products, accounting for 52.73% and 46.37% respectively.

(3) Green low-carbon products still face limited penetration due to price constraints. Green low-carbon products often come with higher price tags, which, influenced by income levels, render a significant portion of consumers interested but financially unable to afford them, expressing sentiments such as "green products are good, but expensive and not cost-effective." Under various real-life conditions, there still exist significant urban-rural disparities in the consumption capacity of green products. Taking new energy vehicles as an example, the penetration rate of pure electric vehicles in county-level and rural markets remains relatively low.

(4) Insufficient incentive mechanisms for businesses pose a challenge. Green consumption extends beyond mere consumer behavior; it necessitates coordinated cooperation throughout the supply chain, continuous investment from enterprises in technology, processes, funding, and management, as well as robust support from policy and financial sectors. The "Chinese Private Enterprise Green Development Report (2022)" reveals that the majority of enterprises strongly demand fiscal subsidies and technical assistance policies for green development. Additionally, 65.5% of industrial enterprises highlight tax relief and fiscal subsidies as the most desired policy support. Furthermore, green financing in China is still in its nascent stage, with limited categories of green funds and high application thresholds, leading to financing challenges for many private enterprises. Insufficient policy and financial support impede some manufacturing enterprises from having adequate incentives to renovate and update equipment, engage in research and development, and invest in green production operations.

2.1.5 Green Consumption of Air Conditioners

(1) Air conditioners have become an essential product in Chinese households

With the continuous development of the economy and society, people's income levels are constantly rising, and their living conditions are continuously improving. The demand for air conditioning is increasing, making it gradually become a necessary household appliance (Dong, Coleman et al. 2021, Oye 2022). However, air conditioners consume a lot of energy. Energy efficiency of air conditioning is an important consideration factor in construction projects, as well as an important consideration factor for people when choosing home air conditioners (Wang, Zhang et al. 2013) (Zhang, Lahr et al. 2016, Yue, Sheng et al. 2020)

Taking the sales volume of air conditioners in China as an example, there is high market demand. According to the retail sales data compiled by AVC (www.avc-mr.com), the sales

revenue of air conditioners in China over the past three years is as shown in the following table 2.3:

Table 2.3 Air conditioners sold and annual sales revenue

Year	Air conditioners sold (Thousand)	Annual Sales Revenue (Billion RMB)
2021	46890	152.7
2022	57140	196.9
2023	60850	211.7

As observed, both the sales volume and revenue of air conditioners in China have been increasing rapidly year by year. According to estimations from the China Household Electrical Appliances Association, the current total number of air conditioners in use in China is 540 million units. According to the National Bureau of Statistics of China, as of the end of 2022, the air conditioner ownership rate per one hundred households in China is 163.5 units, indicating that on average, each household owns 1.6 air conditioners. This highlights the fact that air conditioners have become essential household appliances in China.

(2) Green Product Grades of Air Conditioners

Air conditioners in use contribute to energy consumption and increase the concentration of carbon dioxide in the air, leading to poor air quality. Therefore, energy conservation and emission reduction have become the consensus among consumers (Wang, Zhang et al. 2013). The energy efficiency of air conditioning primarily refers to its ability to convert electrical energy into cold (or heat) energy during operation. Typically, the energy efficiency of cooling-type air conditioners is measured by the Energy Efficiency Ratio (EER), which represents the ratio of cooling capacity to power consumption. Similarly, during heating, the Coefficient of Performance (COP) is used to measure the ratio of heating capacity to power consumption. Currently, the evaluation system for air conditioning energy efficiency is becoming increasingly perfected, with energy efficiency evaluation methods becoming more scientific and systematic. Understanding key energy efficiency ratings allows for a genuine and effective reflection of consumers' inclination towards green purchasing of air conditioning.

The energy consumption of air conditioning can be distinguished and classified based on energy efficiency ratings. According to national standards, China categorizes air conditioner energy efficiency into five grades (Zhang, Su et al. 2024). Grade 1 indicates that the product's energy-saving capabilities have reached international advanced levels, with the lowest energy consumption. Grade 2 signifies relatively energy-saving products. Grade 3 represents products with energy efficiency at the average level of the Chinese market. Grade 4 indicates products

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with energy efficiency lower than the market average. Grade 5 serves as a market access indicator, with products failing to meet this grade not permitted for production and sale. Grades 4 and 5 belong to high-energy-consumption air conditioners. China enforced a mandatory cessation of production for such high-energy-consumption air conditioners in March 2009. As a result, the Chinese market currently only features air conditioners ranging from Grade 1 to Grade 3. Air conditioners beyond Grade 3 are deemed non-compliant products and are not allowed to enter the market. Grade 1 energy efficiency air conditioners, with the lowest energy consumption and highest energy efficiency ratio, are also the most environmentally friendly and green. Although the theoretical and industrial communities have not yet designated a specific grade as the standard for green consumption, Grade 1 energy efficiency air conditioners undoubtedly represent the greenest option (Zhang, Su et al. 2024). Therefore, this article considers Grade 1 energy efficiency air conditioners as a symbol of green consumption, which are shown in the following table 2.4.

Table 2.4 Air conditioner energy efficiency rating criteria (Unit: W/W)

Type	Rated cooling capacity (CC)	Energy efficiency rating		
		1	2	3
Centralized air conditioner		3.30	3.10	2.90
Split air conditioner	CC≤4500W	3.60	3.40	3.20
	4500W < CC ≤ 7100W	3.50	3.30	3.10
	7100W < CC ≤ 14000W	3.40	3.20	3.00

(3) The green purchasing of air conditioners is becoming increasingly prevalent

The current air conditioning industry is developing rapidly in terms of energy efficiency, environmental protection, safety, and intelligence. Green air conditioners are becoming increasingly popular among Chinese consumers. According to data from OvniCloud, sales of new first-grade energy efficiency air conditioners in the domestic offline market account for 66.4%, second-grade energy efficiency products account for 1.5%, and third-grade products account for 32.1% (Liang, Wang et al. 2022). Among the leading companies in the air conditioning industry, the proportion of green air conditioners is even higher. Gree's first-grade energy efficiency products account for 81.5%, Midea accounts for 85.9%, and Haier's proportion is as high as 88.5% (Ke, Sheng et al. 2024). Therefore, leading air conditioning companies are setting an example in green energy-saving efforts.

Although purchasing green air conditioners is a trend, many consumers still face challenges. There is a phenomenon of inconsistency between the intention to engage in green purchasing and actual purchases. Additionally, factors such as price, product knowledge, and product safety pose challenges when considering purchasing green air conditioners. Therefore, This material is reserved for educational use only, not allowed for commercial use.

when analyzing consumers' green purchasing behavior, it is necessary to comprehensively consider the various factors that influence their consumption behavior in order to better understand their intention to purchase green air conditioners.

2.2 Social media

2.2.1 The definition of social media

Social media is a collection of platforms and tools constructed based on digital technology and Internet infrastructure (Tiago & Veríssimo 2014). Its core function lies in empowering users to achieve information exchange and social connection among individuals or groups through content creation, sharing, interaction and collaboration (Singh and Sonnenburg 2012, Dzurek and Dzurek 2025). Social media, through technological empowerment, enables consumers to upload content and spread it widely without having to master too much technology (Al-Quran 2022), breaking the centralized communication structure of traditional media and forming a user-centered network communication ecosystem. Its functional scope covers multiple scenarios such as social interaction (such as private messages and groups), information aggregation (such as news and information sharing), interest communities (such as vertical field forums), and collaborative creation (Kane, Alavi et al. 2014, Al-Quran 2022). Essentially, it is a media system through which users achieve social connection and meaning construction through digital means (Tiago & Veríssimo 2014, Stephen 2016).

In summary, we define social media as follows: Social media denotes digital platforms and technologies developed to let users generate, share, and interact with content, as well as associate and communicate with others through the internet. Fundamental to its conception is the stress on user-created content and interactive communication, differentiating it from traditional media (e.g., TV, print) where content dissemination is chiefly one-way. These platforms encourage the creation of online communities and networks, backing assorted modes of engagement such as commenting, liking, sharing, and collaborating.

In this study, social media specifically refers to digital platforms in China (such as Weibo, wechat, Douyin, REDnote) that support consumers in content production, sharing and interaction around air conditioning product information (such as energy efficiency parameters, environmental protection technologies, and usage experiences). As a key channel for information dissemination and the influence of consumption decisions, It is the core research object for analyzing the mechanism of green purchasing behavior.

2.2.2 The differences between social media and traditional media

Social media represents a novel form of information dissemination and marketing, distinguished from traditional media by its format, content, communication style, interaction, This material is reserved for educational use only, not allowed for commercial use.

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audience demographics, and usage scenarios. Its emergence has transformed the role of consumers in storytelling, shifting them from passive listeners to active participants (Singh & Sonnenburg 2012). Consumers primarily utilize social media to acquire and engage with product-related information (Heinonen 2011).

This study conducted a literature review on scholars' comparative studies of traditional media and new media relationships. Different experts have proposed varying perspectives on their comparative analysis. This study categorizes the research viewpoints into six dimensions: Existence Form, Content of Communication, Mode of Transmission, Interactivity, Credibility and Authenticity, and Audience. Scholars have systematically compared the differences between social media and traditional media across these dimensions through multiple analytical channels, which provides innovative perspectives and methodological approaches for this paper's research. Which are shown in the following table 2.5.

Table 2.5 Comparison between Traditional Media and Social Media

Aspect	Traditional Media	Social media	Author
Existence Form	Primarily conducted through traditional print and broadcast formats such as newspapers, magazines, radio, and television.	A digital platform that allows users to create profiles, share content, exchange information, and interact.	(Heinonen 2011)
Content of Communication	Typically consists of news reports, features, advertisements, comments, etc., curated and produced by professional journalists and editorial teams. Content is relatively formal, and the publishing process is more rigorous, resulting in lower timeliness.	Content is more diverse and personalized, with users able to publish their own text, photos, videos, etc. Due to the ease of content creation and uploading, social media content is timelier.	(Kane, Alavi et al. 2014, Kumar & Pandey 2023)
Mode of Transmission	Primarily disseminated through print, broadcast, or televised play, with relatively slower dissemination speeds and information delivery in a "one-to-many" mode.	Disseminated via the internet, with instant and global dissemination capabilities. Utilizes a "many-to-many" network propagation mode, allowing users to access and interact with content anytime, anywhere through mobile phones or computers.	(Pop, Săplăcan et al. 2020)

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Table 2.5(continue)

Aspect	Traditional Media	Social media	Author
Interactivity	Primarily a one-way communication mode, where audiences can only passively receive information, lacking interactivity.	Emphasizes interaction and participation among users, allowing them to interact with content, share, comment, like, etc., forming communities and network effects.	(Singh & Sonnenburg 2012, Han and Xu 2020)
Credibility and Authenticity	Traditional media are subject to strict editing and supervision, leading to relatively high credibility, but they can also be controlled and constrained by power, leading to biases and misleading information.	Content on social media comes from a wide range of sources, with varying levels of authenticity and credibility. There may be rumors, false information, etc., requiring users to judge and discern authenticity themselves.	(Heino nen 2011, Pop, Săplăca n et al. 2020)
Audience	Traditional media's audience is relatively broad, encompassing people of all ages and social strata, suitable for mass communication.	Social media's audience consists mainly of digital natives and young people, particularly prevalent among the younger generation due to its interactivity and personalization.	(Bedard & Tolmie 2018)

Based on the literature review in the above table, we can find that traditional media and social media exhibit fundamental differences across multiple dimensions. In terms of existence form, traditional media relies on print and broadcast formats, while social media operates as a digital platform enabling user-generated content and interaction. Content of communication in traditional media is professionally curated and formal, whereas social media offers diverse, personalized, and timely content due to its low entry barriers. The mode of transmission also differs significantly—traditional media follows a slower, one-to-many model, while social media leverages the internet for instant, global, and many-to-many dissemination.

Meanwhile, in terms of the interactive dimension, traditional media mainly focuses on one-way communication, while social media builds participation mechanisms such as likes,

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comments, and shares. In terms of credibility, although traditional media are subject to strict censorship, they may have institutional biases. Social media, due to the complexity of information sources, requires users to independently distinguish authenticity. Finally, the audience groups show generational differences, which are specifically reflected in the fact that traditional media covers users of all ages, while social media is more favored by young digital natives due to its interactive advantages. These differences reveal the complementary relationship between the two media in the information ecosystem and also reflect the era trend of the communication paradigm shifting from institution-led to user-empowered. Therefore, this study selects the context of social media, which is more in line with consumers' scenarios and can more accurately understand consumers' green consumption behaviors.

2.2.3 An overall overview of the development of social media

From a global perspective, the major social media platforms include: Facebook, the world's leading social media platform, with over 3 billion monthly active users. Its core user base is aged 25–34, accounting for 31.1% of total users(Ng, Goh et al. 2023). Twitter, boasts 145 million daily active users, with its system processing over 1.6 billion search queries daily(Pfeffer, Matter et al. 2023). LinkedIn, connects over 900 million users, including approximately 65 million business decision-makers. Instagram, attracts around 2 billion monthly active users, primarily targeting individuals aged 18–34(Sprecher & Stevens 2023). YouTube, the largest video-sharing platform globally, with over 2.7 billion monthly active users. Users watch over 1 billion hours of video daily, and over 500 hours of content are uploaded every minute(Sprecher & Stevens 2023). TikTok, a rapidly growing short-video platform, having surpassed 4.92 billion global downloads. It boasts 1.582 billion monthly active users, with its primary audience being younger generations(Scholes 2023).

China's social platforms include WeChat, QQ, Bilibili, and Xiaohongshu (Rednote). They differ from traditional media such as television and newspapers in that traditional media involve one-way transmission where the audience merely receives information without participation, resulting in poor feedback and low engagement(Al-Quran 2022). Unlike traditional media, social media can change the traditional centralized and one-to-many dissemination model to a decentralized and many-to-many network-based dissemination model(Theodorakopoulos, Theodoropoulou et al. 2025). Social media is more convenient, efficient, and diverse. It allows users to share opinions, experiences, and feelings at any time and can involve the audience not only as viewers but also as content creators and disseminators(Hansen 2021).According to the China Internet Development Report 2023, with the number of Chinese netizens reaching 1.079 billion as of December 31, 2023, the number of active users of China's major social media(Мукатай, Досымбекова et al. 2024).

The number of social media users in China is very large, according to statistics from the China Internet Network Information Center (CNNIC), as of June 2021, the number of social media users in China reached 1.16 billion, accounting for 82.5 percent of the country's total population(Chen & Xu 2025).

The functions of social media are becoming increasingly rich, constantly influencing consumers' usage and social habits, among which the most important ones are sharing information and mutual evaluation(Tiago & Veríssimo 2014). Such as WeChat Moments functions similarly to Instagram feeds, allowing users to stay updated on their friends' lives by viewing their posts. Much like Instagram and Facebook, users can share status updates, photos, and videos, and interact with friends to share moments and engage with each other. Further research is needed to better understand how sharing among friends influences green consumption, including clarifying its impact mechanisms and communication channels. According to Xie & Madni (2023), the information shared on social media has a positive correlation with the green consumption behaviors of the younger generation in China(Xie and Madni 2023).

2.2.4 Different Generations' Social Media and Green purchasing Concepts

Based on analyses by American sociologists such as Mark McCrindle, Billy Idol, Neil Howe, William Strauss, etc., different age groups are classified according to the birth years of individuals from different generations, specifically including: Baby Boomers 1946—1964; Generation X 1965—1980; Millennials 1981—1996; Generation Z 1997—2012; Generation Alpha 2013—2025(Seemiller & Grace 2018).

Different age groups have different consumption concepts, varying in their use and acceptance of social media, as well as their concepts of green consumption.

Table2.6 Green Consumption Concepts Across Different Generations

Generation	New Media Usage	Green Consumption Habits
Baby Boomers 1946—1964	The Baby Boomer generation are the largest consumers of traditional media such as television, radio, magazines, and newspapers. Despite this traditional preference, 90% of Baby Boomers have Facebook accounts.	

Table 2.6(continue)

Generation	New Media Usage	Green Consumption Habits
Generation X 1965 - 1980	The Generation X still reads newspapers, magazines, listens to radio, and watches television (spending approximately 165 hours per month watching TV). However, they are also proficient in digital technology, spending about 7 hours per week on Facebook (the highest among all generations).	They have the economic basis to purchase green products.(Heinonen 2011)
Millennials/ Generation Y 1981— 1994	95% still watch TV, but the preference is for streaming services like Netflix and iQiyi. This generation is highly satisfied with mobile devices, but 32% still use computers for shopping. They typically have multiple social media accounts.	Millennials' green buying intentions are linked to their social interactions online. A positive correlation exists between the degree of online interpersonal influence and the level of green purchase intentions. (Bedard& Tolmie 2018, Ali, Ullah et al. 2023)
Generation Z 1995—2010	On average, Generation Z gets their first mobile phone at 10.3 years old. Many of them grew up playing with their parents' smartphones or tablets. They have come of age in a highly connected world, with smartphones being their preferred mode of communication. On average, they spend 3 hours per day on mobile devices.	Perceived Environmental Knowledge has the largest effect on Green Consumption Intention, and Generation Z consumers are influenced by global discussions on the environment and sustainable development advocacy. (Zhang, Lahr et al. 2016, Joshi & Rahman 2019, Joshi, Uniyal et al. 2021)

Source: <https://offer.kasasa.com/exchange/articles/generations/gen-x-gen-y-gen-z>

Based on the above table and literature review, it can be seen that there are significant differences among different generations in terms of social media and green consumption concepts. The baby boom generation (1946-1964), although mainly relying on traditional This material is reserved for educational use only, not allowed for commercial use.

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media, has begun to be exposed to social media, and their consumption decisions may have become more conservative. Generation X (1965-1980), as a transitional generation, used both traditional and digital media simultaneously, and their environmental protection behaviors were influenced by dual channels. The green consumption willingness of the millennial generation (1981-1994) is highly correlated with online social interaction and is easily influenced by peers and online content (Aurélio, Maia et al. 2025). While Generation Z (1995-2010), as digital natives, their environmental awareness mainly comes from global environmental issues disseminated on social media, and environmental knowledge has the greatest impact on their consumption choices (Liang, Li et al. 2022). Overall, with the change of generations, the role of social media in shaping the concept of green consumption is constantly strengthening, and the younger generation is more likely to accept and practice the concept of sustainable consumption through social networks (Aurélio, Maia et al. 2025). Therefore, the thesis plans to conduct multi-group comparative analyses, taking age as an important factor for research and analyzing green consumption behaviors of different age groups.

2.3 Review of the relationship between social media and green consumption

Social media is undergoing rapid development, and there is a heated discussion and study on the mechanism by which social media promotes green consumption. With significant changes in the way information is transmitted, social media can effectively influence consumers' perception and purchase plans for green products (Pop, Săplăcan et al. 2020). Both social media marketing and the acceptance of green communication significantly influence the intention for green consumption, with acceptance of green communication being the most crucial factor affecting both green attitudes and green consumption intention (Wu and Long 2024).

Experts have analyzed social media usage and the impact of online interpersonal influence on green purchase intentions, finding a positive correlation between social media use, online interpersonal influence, and green purchase intention (Bedard & Tolmie 2018). Through a survey of 303 young people in China, it was found that social media can influence the green consumption behavior of the younger generation through subjective norms and perceived green values, playing an important role in stimulating green consumption among the younger generation (Xie & Madni 2023). Scholars have also highlighted the importance of social media in altruistic motives, selfish motives, and subjective norms, as well as their roles as antecedents to green purchasing intentions and behavior (Kumar & Mohan 2021).

Due to the presence of attitude-behavior inconsistencies in green consumption, along with various other factors, the processes through which consumers ultimately decide on green purchasing are intricate. The mechanisms of how environmental cognition affects green

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purchasing behavior need further clarification and refinement. Many academics have expressed serious concerns about the potential discrepancy between individuals' stated intentions regarding socially desirable behaviors and their actual actions (Nguyen, Nguyen et al. 2019). Researchers combined actual purchasing and self-reported data and found that actual buying behavior is positively affected by the intention to purchase and negatively impacted by subjective norms (Testa, Sarti et al. 2019). Studies show that the mutual communication and comments on social media help drive consumers from consumption intention to consumption actions (Pütter 2017, Simeone & Scarpato 2020). Therefore, it is necessary to conduct an in-depth analysis of the influence mechanism of social media on green consumption.

2.4 Research Theory of Planned Behavior

2.4.1 Theory of Planned Behavior

Human behavior is complex and difficult to explain. There is a renowned theory called the Theory of Reasoned Action (TRA), proposed by scholars Fishbein and Ajzen in 1975 (Ajzen & Fishbein 1975). This is the first theoretical model to incorporate three factors: consumer attitudes, intentions, and actual behaviors. The core point of the theory is that individual behavior can be reasonably inferred from behavioral intention to some extent, and individual behavioral intention is determined by attitude towards behavior and subjective norm. This theoretical model integrates the three factors of consumer attitude, intention, and actual behavior for the first time, and the core of this theory suggests that individual behavior can be reasonably inferred to some extent from behavioral intentions, which in turn are determined by attitudes toward the behavior and subjective norms (Ajzen & Fishbein 1975).

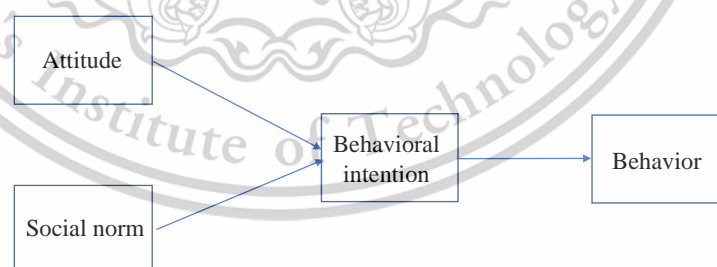


Figure 2.2 TRA Model

The Theory of Reasoned Action posits that individual actual behavior is influenced by personal intention. However, this model has overlooked the impact of non-volitional factors on individual behavior. Therefore, more scholars have sought to refine this model based on its principles (Kurland 1995, Park 2000, Langdridge, Sheeran et al. 2007).

The Theory of Planned Behavior (TPB) is derived from the Theory of Reasoned Action (Fishbein & Ajzen 1977) and is applied in the analysis of behavioral intentions and actual actions (Ajzen 1991). It is identified as an extension of TRA. The Theory of Planned Behavior introduces the factor of perceived behavioral control, suggesting that an individual's perception of control influences their intention and actual behavior. This implies that individuals not only consider their attitudes and subjective norms but also their perceived ability to carry out the behavior (Ajzen 1991). The main tenet of this theory is that an individual's actual behavior is determined by their behavioral intention, which is affected by attitude towards behavior, subjective norms, and perceived behavioral control (Ajzen 1991, Ajzen 2002, Ajzen 2020). The TPB model constructed from these factors and their relationships is shown below. Additionally, TPB has been applied in numerous fields of research, such as sociology, psychology, and social psychology, to explain human behavior.

In recent years, more and more experts and scholars have used the TPB theory to analyze green purchasing behavior (Emekci 2019, Liu, Liu et al. 2020, Xie, Wang et al. 2022). They believe that the model of planned behavior theory can not only analyze the influencing factors of green purchasing behavior but also predict consumers' green purchasing intention and behavior (Yadav & Pathak 2016). Environmental psychology takes "emotional variables" into account and finds that positive emotions such as pride brought by green consumption can significantly enhance behavioral persistence. Behavioral economics, by introducing the nudge theory, reveals how nudge strategies such as default option Settings bypass cognitive resistance and promote environmentally friendly choices (Emekci 2019, Xie, Wang et al. 2022).. These cross-disciplinary dialogues not only expand the interpretive boundaries of TPB, but also promote the formation of an integrated model with greater practical guiding value. With the advancement of the Sustainable Development Goals, the application exploration of TPB in emerging fields such as the circular economy and carbon neutrality will continue to deepen, and its theoretical framework and measurement tools will also be updated and iterated accordingly.

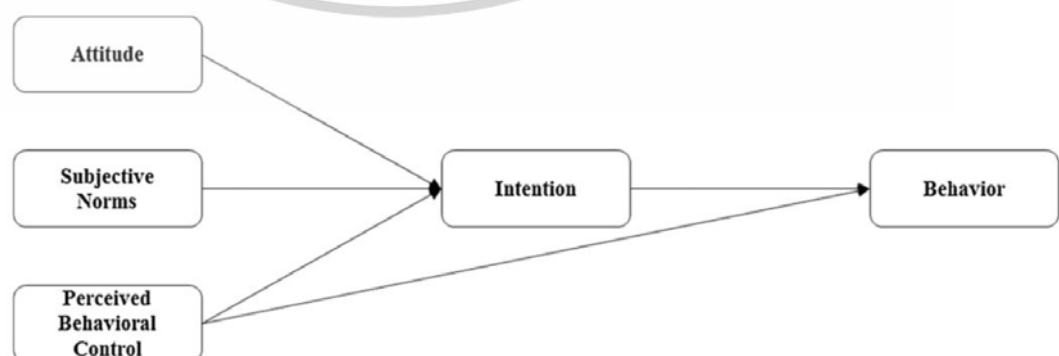


Figure 2.3 TPB Model

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2.4.2 Multi-group analysis in TBP

Multi-group analysis (MGA) is a technique in Structural equation Modeling (SEM), used to examine whether there are significant differences in the path coefficients of different groups (such as groups with different demographic characteristics and different usage scenarios) in the model, thereby revealing the heterogeneity among groups (Leroy, Maes et al. 2009). Its core purpose is to verify the applicability and stability of the theoretical model in different groups. MGA traces its roots to confirmatory factor analysis (CFA) and SEM, where it was initially developed to test measurement invariance (Gao 2023). Early multi-group analysis was mainly applied to confirmatory factor analysis (CFA), and later expanded to Structural Equation Modeling (SEM) for comparing model parameters of different groups.

The validity of the Theory of Planned Behavior (TPB) relies on the cross-group stability of the causal relationships among its variables (Ajzen & Schmidt 2020). However, extensive empirical research has found that: perceptions of "attitude" may vary across groups due to differences in values (Biswas & Roy 2015)—for example, disparities in the intensity of attitudes toward "green consumption behavior" between environmentalists and non-environmentalists; the influence of subjective norms may change with social roles; and assessments of perceived behavioral control may fluctuate due to differences in resource availability across income groups. Demographic variables (e.g., age, gender, education level, income level) are the most common basis for grouping. Researchers use multi-group analysis (MGA) to test whether there are significant differences in TPB model parameters across different demographic groups, aiming to explain "why some groups are more driven by attitudes, while others rely more on subjective norms." (Biswas & Roy 2015) Multi-group analysis serves as a critical tool for deepening the application of the TPB. By revealing group heterogeneity and contextual dependence, it not only validates the theoretical robustness of the TPB but also drives its transformation from "universal prediction" to "precision explanation." This paper examines the characteristics of air conditioner consumption and the features of social media, conducting a cross-level multi-group analysis, which facilitates a differentiated exploration of how social media influences green consumption across diverse groups.

2.4.3 Selection of variable

In order to have a more thorough understanding of the influencing mechanism of consumers' green purchasing behavior and clarify the influencing factors, it is necessary to further study the selection of variables in previous literature, especially to analyze the selection of variables when using the TPB model for green purchasing analysis in the context of social media. For this purpose, some typical literature reviews have been conducted, as shown in the table below.

Table 2.7 Finding of Each Factor

	Factors	Finding	Author
1	Attitude, subjective norms, perceived behavioral control, intention and moral norms	Moral norms serve as a mediator between subjective norms and purchase intentions, and the morally expanded TPB framework is more suitable for forecasting green purchase intentions among Chinese consumers compared to the original TPB model.	(Liu, Liu et al. 2020)
2	Environmental Concern, Price Sensitivity, Environmental Responsibility	Price Sensitivity has a negative moderating effect on the relationship among environmental responsibility, environmental concern and the willingness to consume green.	(Yue, Sheng et al. 2020)
3	Behavioral Intention, Environmental Attitude, Price Perception, Knowledge Perception	Consumers' price and knowledge perception are the main determinants of the outcome of continuous green consumption behavior, and the behavioral willingness to pay a green price premium is the result of continuous green consumption.	(Biswas & Roy 2015)
4	Perceived value and Willingness to pay were included in TPB	Willingness to pay premium (WPP) is crucial for the determining of consumer green consumption.	(Yadav & Pathak 2017)
5	Attitude, environmental knowledge, perceived consumer effectiveness, intention.	By replacing subjective norms and perceived behavioral control with respectively environmental knowledge and perceived consumer effectiveness, disclosing the significance of product characteristics in the decision-making process of green consumption.	(Sharma & Foropon 2019)

Table 2.7 (continue)

	Factors	Finding	Author
6	Perceived risk, moral responsibility, normative belief attitude, subjective norms, behavior control, behavior intention	Perceived risk of green buying has a significantly negative impact on consumer intention, other factors have the positive impact.	(Wu & Chen 2014)
7	Attitude, subjective norms, behavior control, behavior intention, demographics, situation motivation, environmental knowledge and concern	Environmental knowledge significantly impacted the intention to purchase green products, whereas environmental concern did not demonstrate a noticeable effect, and high level of novelty desire can promote high purchase intentions	(Choi & Johnson 2019)
8	Social media, altruism motivation, egocentric, attitudes, subjective norm, green purchasing intention	Social media, as an external factor such as a source of information, plays an important role in shaping consumer motivations and their green purchasing intention.	(Pop, Săplăcan et al. 2020)
9	Social media, subjective norm, altruistic motivation, egoistic motivation, electronic word of mouth (EWOM), green purchase intention	Social media plays a positive role in promoting altruistic motivation, self-interested motivation and subjective norms, and effectively promotes green consumption.	(Kumar & Pandey 2023)

It can be seen that price perception or willingness to pay has been included as factors for analysis in some papers. Meanwhile, when analyzing green purchasing behavior in the context of social media, social media is also regarded as one of the factors. Therefore, this paper incorporates these two factors, price perception and social media, into the extended TPB model to facilitate further analysis of the influence mechanism of green purchasing in the context of social media.

2.5 Research hypothesis

2.5.1 Social Media

Social media has revolutionized the dynamics of communication between consumers and businesses, particularly concerning the production of green and non-green products. This material is reserved for educational use only, not allowed for commercial use.

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enables consumers to engage in more interactive and collaborative purchasing experiences (Singh & Sonnenburg 2012), Research on consumers' purchase behavior of green cosmetics indicates that social media significantly influences consumers' attitudes and subjective norms, which are important antecedents of green purchasing intention (Pop, Săplăcan et al. 2020), Social media serves as a vital source of information, shaping consumer motivations, which, when combined with subjective norms, foster positive intentions towards green purchasing (Kumar & Pandey 2023)

Studies have consistently shown a positive relationship between social media and green purchase intention (Bedard & Tolmie 2018) Furthermore, research conducted with millennials in the USA demonstrates a significant positive correlation between social media use, online interpersonal influence, and green purchase intention (Bedard and Tolmie 2018). A survey of 303 young people in China corroborated these findings, revealing that social media positively correlates with green purchasing among the younger generation and stimulates green consumption (Xie & Madni 2023). It was also found that social media effectively raises awareness of the green environment, shaping subjective norms and perceptions among consumers (Xie & Madni 2023).

Moreover, social media significantly drives green purchasing intention and strengthens the connection with environmental concern (Chi 2021), Acceptance of green communication via social media emerges as the most crucial factor influencing both green attitudes and green consumption intention (Wu & Long 2024).

Hypothesis 1a (H1a). Social media has a positive impact on subjective norm.

Hypothesis 1b (H1b). Social media has a positive impact on behavioral attitude.

Hypothesis 1c (H1c). Social media has a positive impact on behavioral intention.

Hypothesis 1d (H1d). Social media has a positive impact on perceptual behavior control.

2.5.2 Behavior attitude

Behavioral attitude is an overall assessment of a person's behavior (Ajzen 1991), previous research has shown that behavioral attitude is an important antecedent variable of purchase intention (Testa, Pretner et al. 2021)

Attitude have significantly positive impacts on consumer behavior intention by investigated 560 autonomous consumers in Taiwan (Wu & Chen 2014). The conclusion from 284 adults who participated in the online group survey showed attitude had positive effects on green product purchase intention (Choi & Johnson 2019) There is a positive and significant influence from behavioral attitude towards consumption intention in the investigation of

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consumers who had actual consumption of organic food products (Testa, Sarti et al. 2019, Testa, Pretner et al. 2021), and the same positive relevance is proved after investigated 620 questionnaires survey (Yadav & Pathak 2017).

Thus, the following hypothesis will be predicted:

Hypothesis 2 (H2): The relationship between social behavioral attitude towards green purchasing intention and green purchasing behavior is positive.

2.5.3 Perceptual behavioral control

Refers to an individual's perception of how easy or difficult it is to perform a particular action (Ajzen 1980). Perceived behavior control is the result of control belief (CB) and perceived power (PP). Controlling beliefs can be defined as an individual's belief in the existence of factors that may promote or hinder the performance of a particular behavior (such as time, money, and opportunity), while perceived power refers to an individual's assessment of the impact of these factors in promoting or hindering a particular behavior (Ajzen 1991).

Perceptual behavior control has significantly positive impacts on consumer green purchasing intention after investigated 560 autonomous consumers in Taiwan (Wu and Chen 2014). And according an investigation of the 380 low-income household respondents found a positive effect of attitude and perceived behavioral control on green purchasing intention (Al Mamun, Mohamad et al. 2018). Perceived behavioral control significantly and positive impacts the consumer's intention to purchase green products (Yadav & Pathak 2017). Pounded in a study of 560 autonomous consumers in Taiwan by Wu and Chen (Wu & Chen 2014).

Hypothesis 3a (H3a). Perceptual behavioral control has a positive impact on behavioral intention.

Hypothesis 3a (H3b). Perceptual behavioral control has a positive impact on price perception.

Hypothesis 3a (H3c). Perceptual behavioral control has a positive impact on energy-efficient purchasing behavior.

2.5.4 Price Perception

Researchers in the field of consumer behavior define price sensitivity as the degree to which an individual reacts differently to a product (or service) due to price changes (Lichtenstein, Ridgway et al. 1993). In the field of green consumption, price factors also have an impact, especially daily items such as air conditioners, which are relatively high in price, and the price should be considered as a factor influencing consumer decision-making.

Many researches views price sensitivity as either a direct or indirect antecedent factor to the purchase intention of green consumption (Stall-Meadows & Davey 2013). Consumers are more willing to get a percentage discount during the green purchasing promotion (Tseng 2013). This material is reserved for educational use only, not allowed for commercial use.

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2016). Price sensitivity negatively moderates the relationship between environmental responsibility, environmental concern, and intention towards green purchasing after collected data from 680 Chinese consumers via online questionnaires (Yue, Sheng et al. 2020).

Of course, not all consumers are price sensitive, or for some special products, the price factor is not obvious. Due to its high nutritional value, Tunisian consumers are less sensitive to the price of local organic olive oil (Hahnel, Ortmann et al. 2014, Ghali-Zinoubi & Toukabri 2019). And also other study showed the hypothesis that consumers' willingness to pay a premium (WPP) positively influences their intention to purchase green products is not valid (Yadav and Pathak 2017).

And there are studies show that although consumers claim they care about the environment, because green products are often priced higher than traditional products, they may not adopt pro-environmental behaviors in their actual purchases (Malik, Singhal et al. 2017). It is found that price sensitivity is an important factor affecting purchase intention, and consumers with lower price sensitivity are more likely to buy electric vehicles (Hahnel, Ortmann et al. 2014). When the price of organic products is no more than 20% of the average price of produce, up to 78% of respondents would buy organic products in real life (Cicia, Del Giudice et al. 2002).

Therefore, the price factor is a complex factor, especially when people's income level increases and consumer psychology is different, and when facing different products, whether the impact of price is weak or strong, positive or negative needs to be further studied. Based on the above literature analysis, as well as the characteristics of air conditioning consumption, the following assumptions are temporarily made:

Hypothesis 4 (H4): There is a negative relationship between product price perception and behavioral intention.

2.5.5 Subjective norm

It is defined as social pressure placed on an individual to engage in a particular behavior (Ajzen, 1980), which are described as feelings of social pressure from significant others that have a significant impact on a person's performance in some way (Ajzen, 1991), and Subjective norm is shaped by individuals' trust in others' opinions and their own motivation to align with those opinions. Subjective norms are the result of the combined influence of normative beliefs (NB) and motivation to comply (MC). Normative beliefs refer to individuals' perceptions of how important others (people who are significant to them) wish them to behave in specific situations, while motivation to comply refers to individuals' desire to comply with the opinions of important others (Ajzen, 1991).

Earlier, researchers studied norm in the field of green purchasing and believed that the social norms includes both what we perceive to be common practice or normal (descriptive

norms) and behaviors we perceive to be morally right or what ought to be done (injunctive social norms), and the two types of norms can both have a strong influence on green purchasing behaviors (Peattie 2010). The development of subjective norm depends on individuals' confidence in others' beliefs and their own desire to maintain consistency with those beliefs (Xie, Wang et al. 2022). As defined by the TPB, the subjective norm of green purchasing reflects the level of social influence consumers experience in their consumption choices, stemming from significant others or groups. Additionally, heightened perceived external influence correlates with increased intention to engage in green consumption.

The researchers find that environmental concern, environmental knowledge, and perceived value related to green positively and significantly influence attitude and subjective norm (Ali, Ullah et al. 2023). The conclusion from 284 adults online showed subjective norm had positive effects on green product purchase intention (Choi & Johnson 2019). Subjective norms have significantly positive impacts on consumer green purchasing intention after investigated 560 autonomous consumers in Taiwan (Wu & Chen 2014). Subjective norm positively influences the consumer's green buying intention after investigated 620 questionnaires survey (Yadav & Pathak 2017).

But some researcher found that subjective norms negatively affect consumer purchasing behavior (Testa, Sarti et al. 2019), but this is a minority of cases, but also according to the specific situation analysis.

According aforementioned research, it can tentatively confirm the following hypothesis.

Hypothesis 5 (H5). Subjective norm has a positive impact on behavioral intention.

2.5.6 Behavioral Intention

The positive relationship between behavioral intention and green purchasing behavior has been a subject of extensive research in the field of consumer behavior and environmental psychology.

Numerous studies have consistently demonstrated that behavioral intention serves as a strong predictor of actual behavior, including green purchasing behavior (Ajzen & Fishbein, 1975). According to the Theory of Planned Behavior (TPB), individuals are more likely to engage in behaviors that align with their intentions (Ajzen, 1991). In the context of green consumption, this theory posits that individuals who express a strong intention to engage in environmentally friendly behavior, such as purchasing green products, are more likely to follow through with such actions.

Empirical evidence supporting the positive relationship between behavioral intention and green purchasing behavior is abundant. For instance, a study by Testa et al. (2019) found a significant positive influence of behavioral intention on actual green purchasing behavior. This material is reserved for educational use only, not allowed for commercial use.

Similarly, research conducted by Wu and Chen (2014) with 560 autonomous consumers in Taiwan revealed that perceptual behavior control, a component of behavioral intention, positively impacted green purchasing intention, indicating a propensity towards green purchasing behavior.

Furthermore, studies have explored the role of various factors in shaping behavioral intention towards green purchasing behavior. These factors include environmental attitudes, subjective norms, perceived behavioral control, and social influences through platforms like social media (Pop, Săplăcan et al. 2020, Kumar & Pandey 2023, Xie & Madni 2023). The consensus across these studies is that stronger intentions to engage in green purchasing are associated with a higher likelihood of actual green purchasing behavior.

Overall, the body of literature provides robust support for the positive relationship between behavioral intention and green purchasing behavior, highlighting the importance of understanding and influencing consumers' intentions to promote sustainable consumption practices.

Hypothesis 6 (H6). Behavior intention has a positive impact green purchasing behavior.

2.6 Conceptual Framework

Based on in-depth literature analysis, this paper combines multiple theoretical bases such as the characteristics of social media, the TPB theoretical model, and the behavior of air conditioner consumption and purchase. This paper forms the main hypotheses of this research, and all the constructions are as follows:

Hypothesis 1a (H1a). Social media has a positive impact on subjective norm.

Hypothesis 1b (H1b). Social media has a positive impact on behavioral attitude.

Hypothesis 1c (H1c). Social media has a positive impact on behavioral intention.

Hypothesis 1d (H1d). Social media has a positive impact on perceptual behavior control.

Hypothesis 2 (H2). Behavioral attitude has a positive impact on behavioral intention.

Hypothesis 3a (H3a). Perceptual behavioral control has a positive impact on behavioral intention.

Hypothesis 3a (H3b). Perceptual behavioral control has a positive impact on price perception.

Hypothesis 4 (H4). Product price perception has a negative impact on behavioral intention.

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Hypothesis 5 (H5). Subjective norm has a positive impact on behavioral intention.

Hypothesis 6 (H6). Behavior intention has a positive impact green purchasing behavior.

In summary, the H1a-H1d series of hypothetical systems examines the mechanism by which social media, as a new type of information environment, transforms the core elements of traditional TPB. Specifically, H1a (Subjective Normative Positive Influence) reflects the normative pressure formed by opinion leaders and group communication in social media; H1b (Positive Impact on Behavior and Attitude) captures the reconstructing effect of social media content presentation on consumers' environmental awareness; H1c (Direct Impact of Behavioral Intention) reveals the immediate consumption impulse brought about by the convenience of social media; H1d (Perceptual Behavioral Control Reinforcement) reflects the improvement of consumers' self-efficacy through the empowerment of social media information.

At the core path dimension level of TPB, H2 (Behavior Attitude → Behavior Intention) continues the classic path of TPB, but injects new characteristics of attitude formation in the context of social media; The innovative combination of H3a (Perceived Behavioral Control → Behavioral Intention) and H3b (Perceived Behavioral Control → Price Perception) incorporates the sense of control and price sensitivity into the same analytical framework for the first time; H5 (Subjective Norms → Behavioral Intentions) has strengthened the intensity of group influence in the era of social media.

In the dimension of economic decision-making regulation, the establishment of H4 (Negative Impact of Price Perception) breaks through the boundaries of the traditional TPB model, introduces the perspective of behavioral economics into the research of green consumption, and particularly focuses on the special decision-making mechanism of high-value environmentally friendly products. Meanwhile, in the dimension of behavioral realization, the final path of H6 (behavioral intention → purchase behavior) has completed the verification of the complete behavioral chain from digital media exposure to actual consumption.

The overall hypothetical framework of the paper, based on the TPB theoretical model, not only retains the core mechanism path of TPB, but also can be innovated according to the new scenarios of social media, the new demands of consumers and the new characteristics of green air conditioning consumption, enriching the influencing factors and also innovating the mechanism of action. Such a design can better meet the research goals and the study of consumption behavior in new scenarios.

Based on the above hypotheses, the research framework of the thesis is depicted as follows in Figure 2.4.

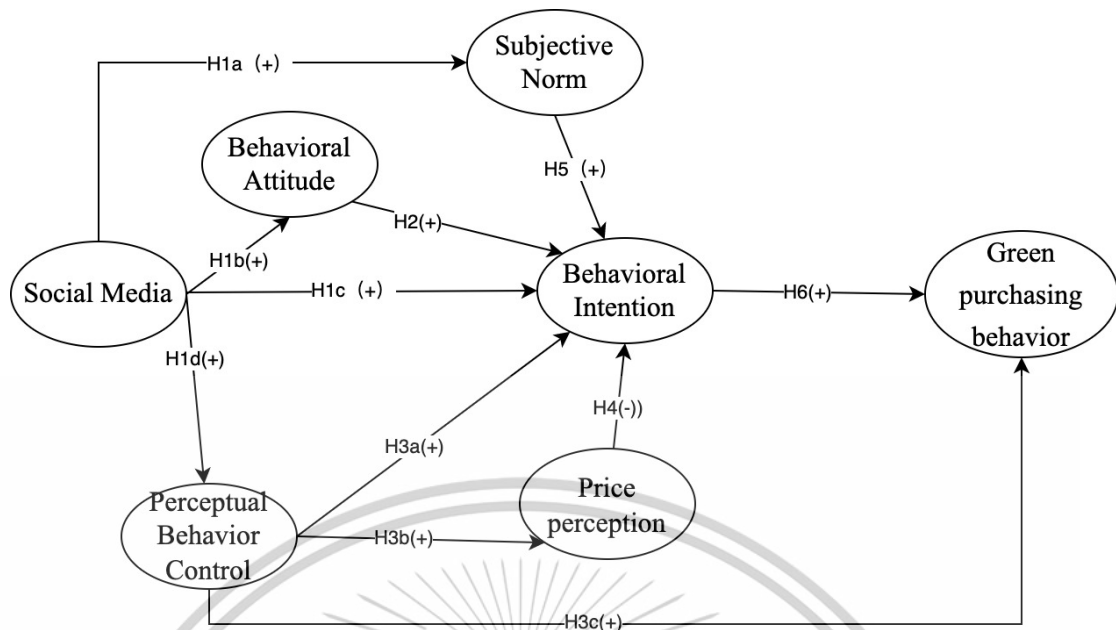


Figure 2.4 : Conceptual Framework

The paper designs an extended TPB model, different from the traditional TPB model, this paper focuses on the new context of social media and introduces price perception as a novel variable to investigate how people make consumption decisions regarding green air conditioners under the influence of social media. To better understand the consumption preferences and motivations of different demographics, The research employs a multi-dimensional analytical approach to examine consumer decision-making processes for energy-efficient cooling systems, with particular emphasis on three demographic segmentation variables: (1) generational cohorts (analyzing digital natives versus traditional consumers), (2) gender-based behavioral patterns, and (3) income-level sensitivity thresholds. Through this granular analysis, the study reveals how social media influence operates differentially across consumer segments while interacting with traditional TPB components. Consequently, this paper proposes an innovative extended TPB model that diverges from the traditional framework, exploring and innovating in both analytical dimensions and methodological approaches. It introduces a visual modeling representation (Figure 2.5) that clearly delineates the novel conceptual relationships between social media stimuli, economic considerations, and green consumption intentions. This integrated model provides both theoretical depth and practical applicability for understanding sustainable consumption in the digital age.

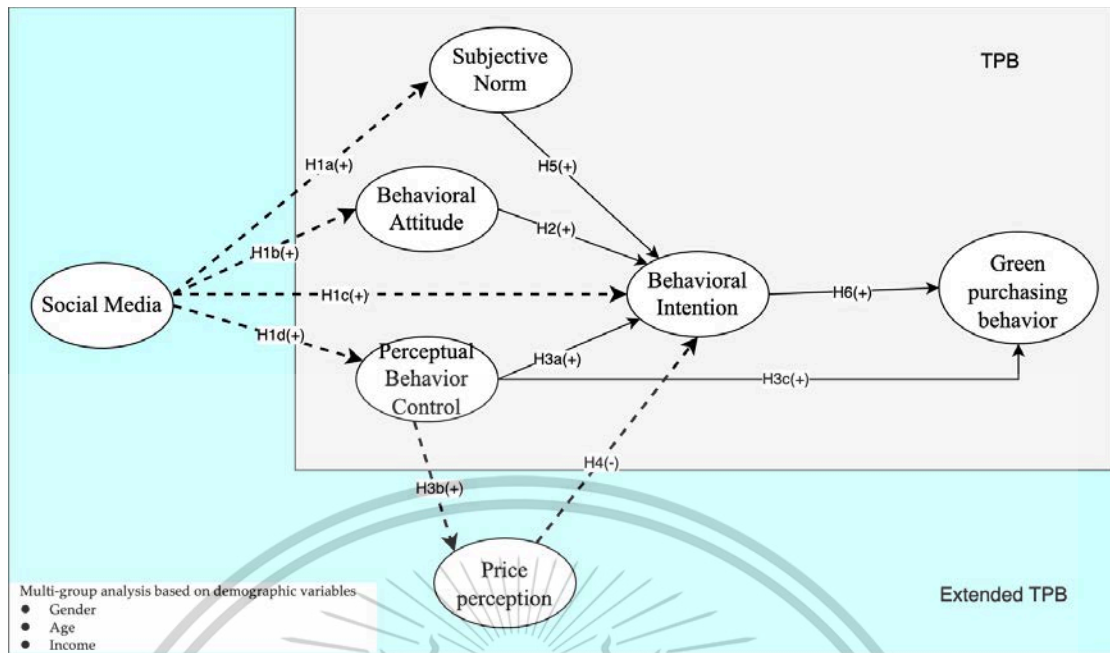


Figure 2.5 : Extended TPB model and hypothesize framework

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CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Design

By utilizing quantitative methods, the study systematically collects numerical data, enabling rigorous analysis to uncover patterns, trends, and associations among variables. Quantitative techniques allow for the precise measurement and quantification of various factors related to green purchasing behavior, such as consumer attitudes, perceptions, and intentions. Through statistical analyses, including regression models or structural equation modeling, the study seeks to identify significant predictors and examine the strength and direction of relationships between these determinants and green purchasing behavior. Additionally, quantitative research enables the generalization of findings to broader populations, enhancing the study's external validity and providing valuable insights for informing strategies aimed at promoting sustainable consumption practices.

This study employs the Structural Equation Modeling (SEM) approach. By integrating the core constructs of the Theory of Planned Behavior (TPB), social media characteristics, and the specific requirements of green air-conditioner consumption, a multidimensional theoretical framework is constructed. The aim is to systematically examine the decision-making mechanism underlying consumers' green purchasing behavior for energy-efficient air conditioners in the social media environment. The study develops a conceptual framework that extends the TPB theory by embedding social-media influence and price perception into the context of energy-efficient air-conditioner consumption. Specifically, the model integrates two novel constructs—social-media influence as an additional information channel augmenting traditional subjective norms, and price perception as a context-specific predictor—alongside core TPB variables (attitude, subjective norm, and perceived behavioral control). These antecedents collectively drive green-purchase intentions, which in turn lead to actual energy-efficient buying behavior. Grounded in an exhaustive literature review, this framework enables empirical validation of the pathways through which social media shapes consumers' decisions to purchase energy-efficient air conditioners.

In terms of questionnaire design, a structured questionnaire method was adopted. The survey employed a five-point Likert scale to measure each construct. We assessed scale reliability using Cronbach's α : both the overall scale and each subscale exceeded 0.80, demonstrating strong internal consistency and supporting the credibility of our data. The study

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then evaluated measurement validity using both exploratory and confirmatory factor analyses. First, exploratory factor analysis (EFA) confirmed that each construct exhibited clean, unidimensional factor structures with all loadings above acceptable thresholds. Building on these findings, we conducted a confirmatory factor analysis (CFA) in statistical program to assess construct, convergent, and discriminant validity. The CFA yielded excellent fit—CFI and TLI values exceeded 0.95, RMSEA and SRMR fell below 0.06 and 0.08 respectively—and all average variance extracted (AVE) and composite reliability metrics satisfied recommended criteria, thereby confirming the robustness of our measurement model.

The study employs hypothesis testing and multi-group SEM to unravel both the direct and indirect pathways through which social media shapes green-consumption behavior. Nine hypotheses—covering direct effects, mediation, and moderation—were evaluated using structural-equation modeling, and all received empirical support. Mediation analyses clarified how social-media exposure influences green-purchase intentions through attitude, subjective norms, perceived behavioral control, and price perception. We then conducted multi-group comparisons across gender, age, and income cohorts, revealing that the strength of key paths varies significantly by demographic segment. This dual approach not only validates our conceptual framework but also provides a rigorous methodological template and actionable insights for tailoring digital-marketing strategies to diverse consumer groups.

3.2 Questionnaire Design

3.2.1 The structure of the questionnaire

The primary tool for data collection in this study is a structured survey questionnaire meticulously designed to elicit relevant information from participants regarding their demographics, social media usage behaviors, attitudes towards green consumption, and intentions regarding the purchase of air conditioners with environmental considerations.

The survey questionnaire is segmented into two sections, each dedicated to distinct aspects of the research objectives.

1. Demographic Information: This section gathers data on participants' age, gender, educational background, occupation, and income level. These demographic variables are crucial for segmenting and analyzing the characteristics of the sample population.

2. Variables including social media, behavioral attitude, subjective norm, perceptual behavior control, price perception, behavioral intention, and green purchasing behavior on air conditioners, show as in Table 3.1. This section aims to gauge the depth of participants' opinions by using a five-point Likert scale. The survey questionnaire employs Likert scale questions. Closed-ended questions offer participants predefined response options, streamlining data collection and analysis. Likert scale questions gauge participants' agreement or

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disagreement with statements on a scale ranging from "strongly disagree" to "strongly agree," enabling nuanced assessments of their attitudes and opinions towards green air conditioner purchases.

Table 3.1 The variable dimensions studied in the thesis

Variable dimension		Reference
Social Media	Frequency of social media use	Kumar & Pandey, 2023
	Degree of trust in social media	Kumar & Pandey, 2023
Behavioral Attitude	Perceived Importance of Green Purchasing	Testa et al., 2019; Yadav & Pathak, 2017
	Perceived Benefits of Green Purchases	Testa et al., 2019
Perceptual Behavior Control	Information acquisition and understanding	A. Al Mamun et al., 2018
	Economic capacity and resource	A. Al Mamun et al., 2018
	Self-efficacy dimension	A. Al Mamun et al., 2018
Subjective Norm	Family and friends influence	Xie et al., 2022
	Social opinion and expectation	Xie et al., 2022
	Group belonging and identity	Xie et al., 2022
Behavioral Intention	Purchase intention	Xie et al., 2022
	Recommendation intention	Xie et al., 2022
	Environmental action intention	Kumar & Pandey, 2023
Price perception	Price sensitivity	Yadav & Pathak, 2017
	Price Elasticity and Payment Willingness	Yadav & Pathak, 2017
Green Purchasing Behavior	Purchase intention and decision	Xie et al., 2022
	Buying frequency and loyalty	Xie et al., 2022

3.2.2 The Questions of the Questionnaire

(1) Questions on social media influence

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According to the previous literature review, it can be seen that social media has become an important channel for modern consumers to obtain product information and form purchase decisions. Meanwhile, social media shapes consumers' attitudes through information dissemination and social interaction (Xie and Madni 2023). Therefore, this part verifies whether it influences green purchase intentions through subjective norms and perceived behavioral control, etc. This section assesses the role of social media in green consumption decisions by measuring the respondents' social media usage habits and their degree of trust in platform information.

Frequency of social media use: Examine the intensity of the respondents' daily use of social media (interacting with friends and family, searching for information on green products) and their activity level in participating in related content interactions. Frequent use may increase the exposure rate of green consumption information, thereby influencing purchase intentions.

Degree of trust in social media: Assess the respondents' reliance on social media information, including their perception of others' recommendations, the importance of platform information channels, and the influence of comments on purchasing decisions. High trust levels may enhance the role of social media as an information source, thereby promoting green consumption behaviors (Xie and Madni 2023).

Table 3.2 Questions on social media influence

Variable dimension	Questions	Reference
Frequency of social media use	(1) I use social media platforms regularly to connect with friends and family. (2) I often search about green air conditioners on social media platforms (3) I often engage with content (e.g., posts, videos, photos) shared by others on social media.	(Kumar & Pandey, 2023) (Li 2025) (Xie & Madni 2023)
Social Media	(1) I trust the information shared by others on social media platforms. (2) I perceive social media is an important channel to get information about green air conditioning (3) The recommendations or reviews of green air conditioners on social media have influenced my purchasing decisions	(Kumar & Pandey, 2023) (Xie & Madni 2023)

(2) Questions on Behavioral Attitude

Behavioral attitude is the core construct of the planned behavior theory, reflecting an individual's positive or negative evaluation of a specific behavior. This section measures the respondents' attitudes towards green consumption from two dimensions: values and practicality. Attitude functions through the direct path of influencing behavioral intention. This section verifies whether it plays a mediating role between social media and purchasing behavior.

(1) Perceived Importance of Green Purchasing: It mainly examines the respondents' moral identification with environmentally friendly consumption, such as whether they believe that green consumption contributes to environmental protection and their sense of responsibility to support sustainable enterprises. High importance cognition may directly enhance the purchase intention. (2) Perceived Benefits of Green Purchases: By assessing the respondents' perception of the actual benefits of green products, such as long-term energy-saving effects and the appeal of environmental labels, understand their impact on the willingness to purchase. Positive benefit perception can reduce price sensitivity and enhance the willingness to purchase. As shown in the following Table 3.3.

Table 3.3 Questions on Behavioral Attitude

Variable dimension		Questions	Reference
Behavioral Attitude	Perceived Importance of Green Purchasing	(1) I believe that engaging in green consumption is important for preserving the environment. (2) My motivation is to purchase environmentally friendly air conditioners. (3) It is important for me to support companies that prioritize sustainability and environmental protection.	Testa et al., 2019; Yadav & Pathak, 2017
	Perceived Benefits of Green Purchases	(1) I consider the environmental impact of my purchasing decisions. (2) My attitude towards products labeled as environmentally friendly is favorable. (3) I think green air conditioning, although the initial investment is high, can save energy costs in the long run.	Testa et al., 2019

(3) Questions on Perceptual Behavior Control

Perceptual Behavior Control reflects an individual's perception of the ease or difficulty of performing a certain behavior, directly influencing both behavioral intention and actual behavior. As a key moderating variable in the Theory of Planned Behavior (TPB), this section examines whether perceived behavioral control affects actual purchase behavior by weakening or strengthening behavioral intention. This section measures perceived behavioral control across three dimensions:

(1) Information acquisition and understanding Evaluates respondents' convenience in accessing green air conditioner information and their ability to compare different brands. Information asymmetry may serve as a barrier to green consumption. (2) Economic capacity and resource: Assess respondents' purchasing power and confidence in affording maintenance expenses. Economic pressures may exclude green products from consideration. (3) Self-efficacy dimension, Measures respondents' belief in the impact of their own environmentally friendly behaviors. High self-efficacy may strengthen behavioral intention, particularly when facing social pressures. As shown in the following Table 3.4.

Table 3.4 Questions on Perceptual Behavior Control

Variable dimension	Questions	Reference
Perceptual Behavior Control	Information acquisition and understanding (1) I can easily access information about green air conditioning. (2) I feel confident in my ability to make environmentally friendly purchasing decisions. (3) I am able to compare different brands and models of green air conditioners to make an informed choice.	A. Al Mamun et al., 2018
	Economic capacity and resource (1) I believe that purchasing a green air conditioner is within my financial means. (2) I am confident in my ability to choose eco-friendly products over non-environmentally friendly alternatives. (3) I can afford the operation and maintenance costs of green air conditioning.	A. Al Mamun et al., 2018
	Self-efficacy dimension (1) I believe that I can influence environmental outcomes through consumer behavior (2) I believe I can make the right purchase decision and choose the right green air conditioner for me (3) I believe that I am able to control environmental impact through purchasing choices.	A. Al Mamun et al., 2018

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(4) Questions on Subjective Norm

Subjective norms reflect the influence of perceived social pressure on an individual's behavior, encompassing both direct expectations from significant others and the observation and internalization of prevalent social behavioral patterns. As a core construct of the Theory of Planned Behavior (TPB), subjective norms influence individual behavioral decisions through two pathways: first, injunctive influence (where individuals comply with the expectations of important others to gain social approval), and second, descriptive influence (where individuals acquire behavioral norms by observing the actions of others). Building upon the preceding literature review, this section will systematically measure the mechanisms of subjective norms' influence across the following dimensions:

(1) Family and friends influence: Examine the influence of direct recommendations or pressure from relatives and friends on purchasing decisions. The influence of intimate relationship networks may exceed that of advertisements or public propaganda.

(2) Social opinion and expectation: Evaluate the respondents' degree of identification with the environmental values of significant others and the resulting sense of obligation. Social norms may influence behavior through internalization mechanisms.

(3) Group belonging and identity: Measure the motivation of the respondents to be consistent with the environmental protection community. Group identity can enhance the sustainability of environmental protection behaviors. As shown in the following Table 3.5.

Table 3.5 Questions on Subjective Norm

Variable dimension	Questions	Reference
Subjective Norm	Family and friends influence (1) My family thinks I should buy green air conditioner. (2) My friends and acquaintances recommended that I buy a green air conditioner. (3) I feel much pressure from friends and family to make environmentally friendly purchasing choices.	Xie et al., 2022
	Social opinion and expectation (1) People important to me believe it is important to make environmentally friendly purchasing decisions. (2) I feel obligated to consider environmental factors when making purchasing decisions based on the opinions of others. (3) I am influenced by experts or opinion leaders that buying green air conditioners is in line with the current trend of social environmental protection.	Xie et al., 2022

Table 3.5(continue)

Variable dimension		Questions	Reference
	Group belonging and identity	(1) I wanted to get in line with the environmental community by buying green air conditioners (2) It is important for me to align my purchasing choices with the environmental values of my social circle (3) I think the environmental views of my peers influence my own purchasing decisions	Xie et al., 2022

(5) Questions on Behavioral Intention

Behavioral intention, as a direct predictor of actual behavior, serves as the ultimate outcome variable in the Theory of Planned Behavior (TPB) framework, reflecting an individual's readiness to engage in specific actions. This section examines the differential manifestations of behavioral intention across age, gender, and income groups, while investigating the influence of socio-technological environmental changes on the decision-making mechanisms of green consumption. Drawing upon intergenerational difference theory, social role theory, and the technology acceptance model, this study systematically analyzes the heterogeneous characteristics of behavioral intention through three innovative dimensions.

(1) Purchase intention: Examine the possibility of respondents choosing green air conditioners in the future to reflect the combined influence of attitude and norms. Analyze the changes in purchase intentions of groups with high environmental protection attitudes under policy incentives or the sharing of group viewpoints, and analyze the role of price sensitivity on purchase intentions. This dimension validates the core path of attitude-behavioral intention in TPB and reveals the leverage effect of social marketing strategies (such as environmental certification labels) on decision-making.

(2) Recommendation intention: Evaluate the respondents' tendency to share their green consumption experiences through social media. Word-of-mouth communication is a key marketing method in the era of social media. Explore how subjective norms and self-efficacy affect the willingness of word-of-mouth communication. For example, by analyzing the exposure degree of green purchasing identities and topics, the green willingness can be analyzed. This dimension echoes the expansion mechanism of subjective norms in the theory of planned behavior and the influence of collective identity of the group on purchase intention.

(3) Environmental action intention: Measure the respondents' determination to adhere to environmentally friendly choices over the long term. High commitment may counteract the impact of short-term price sensitivity. As shown in the following Table 3.6.

Table 3.6 Questions on Behavioral Intention

Variable dimension		Questions	Reference
Behavioral Intention	Purchase intention	(1) I intend to make environmentally friendly purchasing decisions in the future. (2) I am likely to actively seek out environmentally friendly products when making future purchasing decisions.. (3) I plan to incorporate environmental considerations into your future purchasing behaviors.	Kumar & Pandey, 2023
	Recommendation intention	(1) I would like to recommend buying green air conditioners to my family and friends through social media (2) I will share my experience and feelings about buying green air conditioners on social media (3) I think green air conditioning is an environmentally friendly product worth showing to others.	Kumar & Pandey, 2023
	Environmental action intention	(1) I am committed to consistently choosing environmentally friendly options in future purchases (2) I would like to support the cause of environmental protection by buying green air conditioners (3) I think buying a green air conditioner is one way I can contribute to the environment.	Kumar & Pandey, 2023

(6) Questions on Price perception

Price perception, as a newly added variable, may weaken or strengthen the relationship between the influence of social media and behavioral intentions (for example, a high level of price trust can partially offset concerns about environmental premium). Price, as the main obstacle factor to green consumption, has a dual influence mechanism: on the one hand, it directly restricts the purchasing power; on the other hand, it affects the decision-making weight through the mental account mechanism. This section will conduct systematic measurements

from two dimensions: sensitivity and willingness to pay, and introduce a moderating effect test design:

(1) Price sensitivity: Examine the respondents' perception of the premium of green products, such as whether they think environmentally friendly products are "not worth" high prices. High sensitivity may directly suppress the intention to purchase.

(2) Price Elasticity and Payment Willingness: Evaluate the additional costs that respondents are willing to pay for environmental benefits. Willingness to pay is closely related to income level and environmental protection values. As shown in the following Table 3.7.

Table 3.7 Questions on Price perception

Variable dimension	Questions	Reference
Price perception	(1) I believe that environmentally friendly products are generally priced higher than non-environmentally friendly alternatives. (2) The perceived price of environmentally friendly products influences my purchasing decisions (3) I consider the price of environmentally friendly products when making purchasing decisions.	Kumar & Pandey, 2023
Price perception	(1) I am willing to pay a premium for environmentally friendly products compared to non-environmentally friendly alternatives. (2) I perceive the affordability of environmentally friendly products compared to non-environmentally friendly alternatives. (3) I am willing to pay a reasonable price for a green air conditioner, even if it is more expensive than other air conditioners	Yadav & Pathak, 2017

(7) Questions on Green Purchasing Behavior

Purchasing Behavior, as the core concern for the ultimate implementation of research, the behavioral data it generates can not only directly test the predictive validity of theoretical models, but also deeply analyze the consistency degree between behavioral intentions and actual behaviors and the influencing factors behind them, especially identifying the key reasons leading to the intention-to-behavior gap. This part is divided into two dimensions: Purchase intention and decision and Buying frequency and loyalty, which together constitute the

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complete consumption behavior chain from short-term decisions to long-term behavioral patterns. It not only comprehensively verifies the explanatory power of the theoretical model for actual behaviors, Moreover, it can accurately identify the specific links and influencing factors that lead to the disconnection between green consumption intentions and actual behaviors, providing a scientific basis for formulating targeted intervention measures, thereby more effectively promoting the substantive transformation of green consumption from "willingness" to "action".

(1)Purchase intention and decision: Examining whether respondents actively choose green air conditioners instead of traditional products reflects the conversion rate from intention to behavior. And evaluate the initiative of collecting environmental protection certification information before purchase. High cognitive engagement may enhance the likelihood of purchase.

(2) Buying frequency and loyalty: Measure repeat purchase behavior and brand loyalty. Long-term loyalty is the key to the sustainability of green consumption. As shown in the following Table 3.8.

Table 3.8 Questions on Green Purchasing Behavior

Variable dimension	Questions	Reference
Green Purchasing Behavior	Purchase intention and decision (1) I often intentionally choose environmentally friendly air conditioners over conventional alternatives. (2) I consider environmental factors when making purchasing decisions of air conditioners (3) I often actively seek out information about the environmental credentials of a product, such as its energy efficiency or eco-friendly features, before purchasing air conditioners (4) The environmental label will influence my choice of air conditioning products	Yadav & Pathak, 2017
	Buying frequency and loyalty (1) I have bought many green air conditioning products in the past period of time. (2) I tend to keep buying air conditioner brands with environmental certification. (3) I have a long-term loyalty to buying green air conditioning products.	Yadav & Pathak, 2017

Overall, this questionnaire is designed to construct an integrated measurement framework that incorporates both social media contexts and the Theory of Planned Behavior (TPB) through seven key variables and their respective sub-dimensions. The seven core variables include: (1) attitudes toward green consumption, (2) subjective norms, (3) perceived behavioral control, (4) purchase intention, (5) actual purchasing behavior, (6) price perception, and (7) social media engagement metrics. Each variable is further operationalized into multiple measurable indicators to capture nuanced consumer behaviors in digital environments.

Subsequent analysis will employ Structural Equation Modeling (SEM) to examine the path relationships among these variables, enabling simultaneous testing of direct and indirect effects within the proposed framework. The paper focuses on three interconnected research objectives: (1) elucidating the mediating mechanisms through which social media influences purchase intention via attitudes, subjective norms, and perceived behavioral control—specifically examining how digital word-of-mouth, influencer endorsements, and peer comparisons shape consumer decision-making processes; (2) investigating the moderating role of price perception across diverse demographic segments (including age cohorts, gender differences, and income levels), with particular attention to how economic constraints interact with social media exposure to affect consumption choices; and (3) assessing the consistency between behavioral intention and actual behavior, identifying key contextual factors (such as purchase barriers, product availability, and post-purchase experiences) that contribute to the intention-behavior gap in green consumption.

The research design incorporates multi-source data collection methods, including longitudinal surveys, social media analytics, and behavioral tracking, to enhance the robustness of empirical findings. By integrating both attitudinal and contextual variables, this study aims to provide a comprehensive understanding of the complex mechanisms driving green consumption in digitally mediated environments. The findings will offer actionable insights for policymakers and marketers, contributing to evidence-based strategies for promoting sustainable consumption patterns in the digital age. These insights will be particularly valuable for designing targeted interventions—such as personalized digital campaigns, incentive mechanisms, and policy frameworks—that address specific barriers identified through empirical analysis.

3.3 Sample data statistics

3.3.1 Survey Sample

The population of interest for this study comprises individuals who actively use social media platforms and engage in purchasing behavior, particularly regarding environmentally friendly or 'green' products (air conditioners). Given the widespread use of social media across

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different demographic groups, this population encompasses a diverse range of individuals from various age groups, geographic locations, and socioeconomic backgrounds. The sampling frame for this study consists of individuals who have internet access and are active users of social media platforms such as WeChat, Weibo, Douyin (TikTok), and others commonly used in China. These platforms serve as the primary channels for communication and information dissemination among the target population. The target sample size for this study is determined based on considerations of statistical power, precision, and feasibility. A larger sample size increases the reliability and generalizability of the findings. Considering the nature of the research questions and the desired level of confidence in the results, the study aims to recruit a minimum of 600 participants who have purchased or intend to purchase air conditioners. This sample size ensures adequate statistical power to detect meaningful relationships between variables and provides a sufficient level of precision in estimating population parameters. Additionally, recruiting a sizable sample enhances the generalizability of the findings to the broader population of social media users engaging in green purchasing behavior, particularly concerning air conditioners.

3.3.2 The size of the sample and the sampling method.

Regarding the sampling method, stratified sampling by region was employed, screening the survey subjects by region (Padgett, Cowden et al. 2025). To better analyze consumers' green air conditioner purchasing behavior, the sample sampling method and proportion were determined based on China's air conditioner consumption patterns and usage habits. Stratified sampling was conducted by region, with sample data segmented into six zones according to China's commonly used regional classification: North China, Northeast China, Northwest China, East China, South China, and Southwest China (Xu & Zhang 2024). Given that Central South China and East China have the highest air conditioner consumption volumes (Hu, Yang et al. 2023), over-sampling was applied to these two regions. Specifically, South China and East China accounted for 20% (Each area is 120 questionnaires), while the remaining four regions each represented 15% (Each area is 90 questionnaires).

To enhance the scientific rigor of the survey, a pre-test was conducted. To improve the validity and reliability of the questionnaire, 50 questionnaires were distributed for the pre-test, and refinements were made to both the questionnaire content and survey methodology. During the pre-test's reliability analysis, items were removed if their Corrected Item-Total Correlation (CITC) was below 0.4 and the Corrected Alpha If Deleted (CAID) exceeded the reliability value of the corresponding variable. For exploratory factor analysis, items with factor loadings below 0.5 after rotation were deleted. The revised questionnaire, as shown in Appendix A, achieved better structural validity.

In terms of sample data processing, this study employed stratified random sampling to collect 632 initial samples. Data cleansing was conducted through the following criteria: Removal of 2 samples with identical responses across all Likert scale items in the scale. Exclusion of samples where completion time deviated by three standard deviations beyond the mean (indicating potential rushed or invalid responses). Elimination of logically inconsistent responses (e.g., selecting both "occupation: student" and "monthly income: above 10,000 RMB"). Following these steps, 620 valid samples were obtained. To ensure regional sample distribution aligned with predefined quotas, Mahalanobis distance was calculated to identify and remove outliers (Etherington 2021). The final cleaned dataset comprised 600 valid samples.

3.3.3 Data Collection

In data collection, convenience sampling will be utilized to recruit participants for the study. This method involves selecting individuals who are readily accessible and willing to participate in the research. Given the online nature of the study and the reliance on social media platforms for data collection, convenience sampling is considered appropriate for reaching a diverse pool of participants efficiently. Specifically, the study will leverage popular social media platforms commonly used in China, such as WeChat, Weibo, Douyin (TikTok), and others. Through targeted advertisements, posts, or invitations shared on these platforms, potential participants will be directed to the survey questionnaire. This approach allows for broad outreach to individuals actively engaged in social media and interested in topics related to environmental sustainability and air conditioner purchases. By utilizing platforms popular among Chinese users, the study aims to ensure representation from a diverse range of demographic groups and geographic locations within China. Additionally, the online nature of data collection facilitates quick and convenient participation, enhancing the feasibility of gathering a sizable and diverse sample for the study.

Pre-test stage: Conduct a small-scale pre-test ($n=50$) before the formal investigation. Purify the items using the dual criteria of CITC (Total correlation of corrected items) and CAID (alpha coefficient after item removal). Exploratory factor analysis is used to eliminate items with a payload of less than 0.5. Optimize the questionnaire expression and logical structure based on the feedback from the pre-test.

Formal investigation implementation: In order to more convenient statistics, this paper used questionnaire design platform to carry out the design of the questionnaire. Questionnaire url to link: <https://www.wjx.cn/vm/Qf57pWu.aspx#>. And the questionnaire distribution was mainly targeted through social media (Wechat Moments, Weibo), while participants were recruited from the BBS of partner universities and community forums.

Ethical norms: Questionnaire design must be approved by the academic committee, all data should be processed anonymously, and multiple submissions from the same IP address

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should be restricted. This study specially developed a mobile adaptation questionnaire to enhance the participation willingness of the young group while ensuring the data quality. Effectively cover consumer groups with different levels of technological literacy.

3.4 Data analysis method

3.4.1 Application of SEM Method

In this study, the variables are latent constructs that cannot be directly and accurately measured or calculated. Therefore, it is necessary to introduce observable indicators to measure these latent variables. Traditional statistical methods face challenges in addressing the measurement of latent variables, whereas Structural Equation Modeling (SEM) provides an effective solution for this issue (Emekci 2019). Structural Equation Modeling (SEM), as a powerful multivariate statistical analysis technique, has become an essential tool for validating complex theoretical models in fields such as social sciences, psychology, and management (Emekci 2019, Qin and Song 2022). SEM integrates the advantages of factor analysis and path analysis, enabling the simultaneous examination of both the measurement model (Confirmatory Factor Analysis, CFA) and the structural model (causal path analysis). This allows for a systematic investigation of latent variables and their interrelationships. This method is particularly suitable for studying abstract constructs that are difficult to observe directly (e.g., attitudes, intentions, satisfaction) and their complex mechanisms of action. In terms of model specification, SEM allows researchers to construct complex models involving multiple latent variables and their observable indicators. By quantifying the direct, indirect, and total effects among variables through path coefficients, SEM supports the simultaneous testing of multiple causal hypotheses. Furthermore, it enables the evaluation of the overall model fit, such as CFI, TLI, RMSEA, and provides a systematic approach to examining the impact of measurement errors (Emekci 2019).

3.4.2 Main analysis process

The analysis first adopts the descriptive statistical analysis method to calculate the scores of each variable and dimension in the questionnaire survey results. The paper uses the standard deviation for analysis. Among them, the average value is the representative constant of a group of data, and the standard deviation is used to represent the discrete trend of the sample data. When the standard deviation is lower, it indicates that the concentration degree of the data distribution is higher, and the tendency of the subjects to choose the same option is stronger. Conversely, when the standard deviation is larger, it indicates that the subjects' choices on a certain topic are more scattered. Ensure the rationality of the research design and the subsequent analysis, and ensure that no parameter deviation occurs during the analysis (Liu, Liu et al. 2020).

Next, we conducted reliability and validity tests. For reliability assessment, Cronbach's alpha coefficient was employed as the evaluation metric. The results indicated that the overall reliability of all variables in the questionnaire survey exceeded 0.8, with each dimension also achieving a reliability coefficient of no less than 0.8. This demonstrates that the data exhibits strong stability and high reliability. Subsequently, we performed exploratory factor analysis on the variables. Validity refers to the degree to which a test or scale can actually measure the psychological traits it intends to assess. It is a relative concept that depends on specific measurement objectives, reflecting the combined effect of random and systematic errors in measurement (Liu, Liu et al. 2020). In this study, we examined the model's construct validity, convergent validity, and discriminant validity through various parameters in confirmatory factor analysis, including model fit indices, standardized factor loadings, composite reliability, and average variance extracted (AVE). Building upon the results of exploratory factor analysis, we further employed statistical software to establish a confirmatory factor analysis model. This allowed us to rigorously test the structural validity, convergent validity, and discriminant validity of the questionnaire survey results.

The core focus of this dissertation centers on systematically conducting regression analysis and hypothesis testing. At the theoretical construction level, this study undertakes in-depth theoretical analysis based on the extended Theory of Planned Behavior (TPB) model. By integrating the latest advancements in green consumption behavior research, a series of research hypotheses with both theoretical contributions and practical value are innovatively proposed. To validate these hypotheses, statistical software is employed to construct a Structural Equation Model (SEM), which enables comprehensive capture of the comprehensive influence relationships among variables. This model not only facilitates comparison of direct causal effects between variables but also allows for in-depth analysis of complex path mechanisms.

In the specific analytical process, the study prioritizes mediation effect analysis. By deconstructing the indirect influence pathways among variables, the mediating roles of various variables within the model are systematically evaluated, and rigorous statistical methods are applied to test the significance levels of these indirect effects. Particularly noteworthy is the calculation of mediation effect sizes, for which the study adopts the bootstrap method - an approach widely recognized in academic circles for parameter estimation. Through 5,000 resamples with replacement combined with bias correction techniques, the accuracy of effect size estimation is significantly enhanced while statistical power is substantially improved, thereby ensuring the robustness of research conclusions.

To further investigate behavioral differences among consumer groups with distinct characteristics, the study conducts rigorous multi-group comparative analyses from a demographic perspective. Three key dimensions - age (Generation X—Z), gender (male and female consumers), and income level (divided into high, medium, and low tiers) - serve as the

basis for this stratified comparison. This layered analytical approach not only reveals the heterogeneity in green consumption behaviors across different groups but also provides scientific evidence for formulating subsequent targeted marketing strategies. Through this systematic analytical framework, the study ultimately achieves its core objectives: validation of the theoretical model, hypothesis testing, mechanism analysis, and identification of group differences, thereby contributing novel findings to both academic research and practical applications in the field of green consumption.



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CHAPTER 4

RESULTS AND ANALYSIS

4.1 Description of the survey sample

The study collected a stratified sample of 600 valid responses from Chinese consumers, applying regional weights to reflect market differences. To account for higher air-conditioner sales, East and South China were intentionally oversampled, the sample size of each region was determined based on the consumption of air conditioners. The region with large air conditioner sales had a high proportion of the sample size. As mentioned earlier, by using the stratified sampling method, considering higher air-conditioner sales, East and South China were intentionally oversampled. South China and East China each accounted for 20% respectively, other regions accounted for 15%. Regarding the age of the respondents, using the classifications from Seemiller & Grace (2018) to ensure consistency and clarity (Seemiller and Grace 2018), the respondents were divided into three generations, among the subjects of this survey Generation Z (Born between 1995 and 2010) is 32.5%, Generation Y (Born between 1981 and 1994) is 34.7%, and Generation X (Born before 1980) is 32.8%. The sample comprised 292 men (48.7%) and 308 women (51.3%), achieving near-equal gender balance. Respondents were distributed evenly across three age cohorts, each representing roughly one-third of the sample. In terms of education, 63.5% held a bachelor's degree, 17.3% a master's, 14.2% an undergraduate diploma or lower, and 5.0% a doctoral degree. As shown in Table 4.1.

Table 4.1 Description of respondents' demographics (n=600)

Variable	Category	Frequency	Percent
Gender	Male	292	48.7
	Female	308	51.3
Age	Generation Z (Born between 1995 and 2010)	195	32.5
	Generation Y (Born between 1981 and 1994)	208	34.7
	Generation X (Born before 1980)	197	32.8
Education	Below bachelor's degree	85	14.2
	Bachelor's degree	381	63.5
	Master's Degree	104	17.3
	Doctoral Degree	30	5.0

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Table 4.1 (continue)

Variable	Category	Frequency	Percent
Monthly Income	Less than 3,500	229	38.2
	3,501 —10,000	211	35.2
	Over 10,000	160	26.7
Occupation	Student	32	5.3
	Personal Business	149	24.8
	Sales and Retail	87	14.5
	Healthcare and Medicine	30	5.0
	Finance and Accounting	85	14.2
	Marketing, Advertising, and PR	78	13.0
	General administration	123	20.5
	Unemployed	16	2.7
Live or Work Part	North China	90	15.0
	Northeast China	90	15.0
	Northwest China	90	15.0
	East China	120	20.0
	South China	120	20.0
	Southwest China	90	15.0

4.1.1 Statistics of social media usage habits

The statistical results of social media usage patterns in the sample indicate that WeChat is the most commonly used platform, followed by Douyin, while Weibo exhibits slightly lower usage frequency compared to the former two. Users' average daily time spent on these platforms is concentrated in two intervals: 1-3 hours and 4-6 hours. Among primary purposes, social interaction (e.g., chatting, sharing life experiences) and entertainment/leisure activities account for over 60%. Information acquisition and content browsing represent 48.2%, whereas activities related to acquiring new knowledge or skills constitute only 33.5%. As shown in Table 4.2.

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Table 4.2 Statistics of social media usage habits

Factor	Category	Frequency	Percent
Social Media Platform	Wechat	539	89.8
	Weibo	322	53.7
	Douyin	418	69.7
	Others	88	14.7
Spend Time	Less than 1 hour	89	14.8
	1 – 3hours	224	37.3
	4 – 6hours	213	35.5
	Over 6hours	74	12.3
Purpose	Social interaction	465	77.5
	Sharing life experiences	409	68.2
	Obtaining news and information	289	48.2
	Entertainment and recreation	389	64.8
	Learning new knowledge or skills	201	33.5
	Others	30	5.0

4.1.1 Statistics on green air conditioning knowledge

Awareness serves as the primary bridge connecting environmental protection value and consumption decisions, directly influencing whether consumers can accurately understand the energy-saving benefits and environmental contributions of products. For instance, the effectiveness of environmental policies such as subsidies and energy efficiency labels can affect consumers' understanding and response to green purchases. Therefore, it is necessary to conduct a survey on consumers' perception of green purchases. The statistical results on green air conditioner knowledge indicate that approximately 47.4% of respondents are aware or highly aware of energy efficiency ratings or relevant certification standards for green air conditioners. Among factors influencing purchasing decisions, price demonstrates the highest impact, while options such as friend recommendations, energy efficiency ratings, and after-sales service show selection rates below 50%. In comparative analysis with traditional air conditioners, green air conditioners exhibit significant advantages in aspects including higher energy efficiency and greater energy savings, eco-friendly materials contributing to pollution reduction, and lower noise levels with enhanced comfort. As shown in Table 4.3.

Table 4.3 Statistics on Knowledge of Green Air Conditioning

Factor	Category	Frequency	Percent
Do you understand the energy efficiency ratings or related certification standards of green air conditioners?	Very well-informed	97	16.2
	Slightly informed	187	31.2
	Not very informed	219	36.5
	Completely uninformed	97	16.2
What factors will influence your decision to purchase a green air conditioner?	Price	449	74.8
	Brand reputation	314	52.3
	Energy efficiency rating	251	41.8
	After-sales service	283	47.2
	Recommendation from friends	209	34.8
What advantages do you think green air condition	Other	107	17.8
	Higher energy efficiency, more energy-saving	473	78.8
	Eco-friendly materials, reducing pollution	354	59.0
	Air purification function	84	14.0
	Lower noise, more comfortable to use	313	52.2
	Easier to maintain, longer lifespan	99	16.5

When conducting a survey on the awareness of energy-saving air conditioners, the largest number of people (36.5%) chose Not very informed, indicating that consumers are not familiar with the cognition of green and energy-saving air conditioners. The standards and classifications of green air conditioners need to be popularized more, and social media is a good channel for popularizing green air conditioners. Therefore, the application of social media is expected to enhance consumers' awareness of green air conditioners.

Meanwhile, when purchasing green air conditioners, the majority (78.8%) of consumers choose to consider the price. This is also the reason why price perception is taken as a variable into the green consumption decision-making model in this paper. Through this survey, the green consumption behavior of consumers can be better explained.

4.2 Descriptive analysis of the questionnaire survey results

The descriptive statistical analysis method was employed to calculate the score distributions of variables and dimensions in the questionnaire survey. In this context, the mean serves as a representative constant for datasets, while the standard deviation quantifies the dispersion tendency of sample data. A lower standard deviation indicates higher data concentration, reflecting stronger uniformity in respondents' selections; conversely, a higher

standard deviation signifies greater dispersion in answer choices for specific items. Although there are no absolute criteria for mean and standard deviation values, extremes in either direction would lack logical validity.

The skewness coefficient measures the degree of asymmetry in score distributions. A perfectly symmetric distribution yields a skewness of 0. When the peak of the distribution curve shifts leftward (characterized by more low-score responses and lower overall means), it manifests as positive skewness (positively skewed distribution). Conversely, a rightward peak (indicating more high-score responses and higher overall means) corresponds to negative skewness (negatively skewed distribution).

The kurtosis coefficient reflects the concentration of score distributions. Values above 0 denote heightened concentration (accompanied by low standard deviations), while lower values signify stronger dispersion. Additionally, skewness and kurtosis coefficients serve as indicators for normality assessment. When their absolute values remain below 2, the data can be considered approximately normally distributed, ensuring no parameter bias during subsequent analyses.

According to the calculation results in Tables 4.4 and 4.5 the mean values of each variable and dimension in this questionnaire survey are basically between 3.1 and 3.4, with scores moderately above average. However, the absolute values of the skewness and kurtosis coefficients are both less than 2, and the data meet the conditions of approximately normal distribution.

Table 4.4 Descriptive statistics of variable scores

Variable	Mean	S.D.	Kurtosis	Skewness
Social Media	3.27	1.03	-1.139	-0.349
Behavioral Attitude	3.17	1.12	-1.411	-0.258
Perceptual Behavior Control	3.22	1.00	-1.358	-0.270
Subjective Norm	3.25	1.01	-1.445	-0.313
Behavioral Intention	3.23	1.02	-1.417	-0.338
Price perception	3.39	1.01	-1.147	-0.462
Green Purchasing Behavior	3.21	1.13	-1.456	-0.311

Table 4.5 Descriptive statistics of scores for each dimension

Variable	Mean	S.D.	Kurtosis	Skewness
Frequency of social media use	3.31	1.14	-1.205	-0.379
Degree of trust in social media	3.24	1.17	-1.299	-0.318
Perceived importance of energy-efficient purchasing	3.12	1.27	-1.587	-0.156
Perceived benefits of energy-efficient purchases	3.22	1.26	-1.412	-0.330
Information acquisition and understanding	3.10	1.30	-1.578	-0.180
Economic capacity and resource	3.30	1.17	-1.282	-0.358
Self-efficacy dimension	3.26	1.19	-1.310	-0.385
Family and friends influence	3.26	1.22	-1.253	-0.370
Social opinion and expectation	3.30	1.20	-1.143	-0.433
Group belonging and identity	3.20	1.22	-1.338	-0.316
Purchase intention	3.21	1.22	-1.270	-0.344
Recommendation intention	3.20	1.21	-1.361	-0.289
Environmental action intention	3.28	1.20	-1.233	-0.405
Price sensitivity	3.39	1.15	-1.053	-0.504
Price elasticity and payment willingness	3.39	1.14	-1.213	-0.458
Purchase intention and decision	3.18	1.24	-1.453	-0.331
Buying frequency and loyalty	3.26	1.28	-1.355	-0.422

4.3 Reliability Verification

Reliability testing assesses the consistency and stability of measurements obtained from the research instrument. In this study, we evaluated the reliability of the survey questionnaire to ensure consistent results across multiple administrations. We employed the following methods to evaluate instrument reliability: Cronbach's alpha coefficient was calculated to assess the internal consistency reliability of the questionnaire items. A value of 0.80 or higher

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is typically considered acceptable, indicating that the items within each scale or construct measure the same underlying concept consistently.

A valid measurement tool must ensure reliability, defined as the consistency of results across repeated measurements. Reliability, often termed as the dependability or credibility of measurement outcomes, requires that a robust measurement instrument yields identical results when applied multiple times to the same subject. In mathematical statistics, reliability is quantified as the ratio of true variance (systematic variance) to total variance (observed variance), where total variance includes both true variance and error variance. Under ideal conditions, reliability should equal 1. When repeated measurements are taken at different times, in different situations or by different evaluators, highly consistent results can be produced. Reliability essentially reflects the stability and credibility of the measurement tool and is the fundamental prerequisite for evaluating data quality. If the same respondent fills out the same questionnaire multiple times under the same conditions but obtains significantly different results, it indicates that the tool has serious random errors and its measurement conclusion is unreliable. However, practical measurements invariably encounter errors from extraneous variables (e.g., environmental factors, individual differences), leading to reliability coefficients typically below 1. The threshold for acceptable reliability is generally set at ≥ 0.7 .

This study evaluated scale reliability using Cronbach's α and item-to-total correlations. Cronbach's α for each construct exceeded 0.80 (Table 4.6), and subscale α -coefficients were likewise above 0.80, indicating high internal consistency. Item-to-total correlations (CITC) all surpassed 0.40, and deleting any item did not increase its construct's α , confirming that each item contributes meaningfully to its scale. Overall, these diagnostics demonstrate that our measurement instrument is both stable and highly credible.

Table 4.6 Reliability test of questionnaire survey results

Variable	Dimension	Item	CITC	CAID	Dimension α	Factor α
Social media	Frequency of social media use	SM1_1	0.648	0.872	0.873	0.884
		SM1_2	0.720	0.861		
		SM1_3	0.699	0.864		
	Degree of trust in social media	SM2_1	0.701	0.864	0.884	
		SM2_2	0.700	0.864		
		SM2_3	0.710	0.862		

Table 4.6 (continue)

Variable	Dimension	Item	CITC	CAID	Dimension α	Factor α
Behavioral attitude	Perceived importance of energy-efficient Purchasing	BA1_1	0.718	0.880	0.897	0.898
		BA1_2	0.709	0.882		
		BA1_3	0.729	0.878		
	Perceived benefits of energy-efficient purchases	BA2_1	0.718	0.880	0.906	
		BA2_2	0.728	0.879		
		BA2_3	0.734	0.878		
Perceptual behavior control	Information acquisition and understanding	PBC1_1	0.715	0.882	0.911	0.898
		PBC1_2	0.729	0.881		
		PBC1_3	0.684	0.885		
	Economic capacity and resource	PBC2_1	0.630	0.889	0.878	
		PBC2_2	0.640	0.888		
		PBC2_3	0.648	0.888		
Self-efficacy dimension	PBC3_1	0.586	0.892	0.878		
	PBC3_2	0.660	0.887			
	PBC3_3	0.664	0.886			
Subjective norm	Family and friends influence	SN1_1	0.657	0.895	0.889	0.904
		SN1_2	0.694	0.892		
		SN1_3	0.651	0.896		
	Social opinion and expectation	SN2_1	0.692	0.893	0.883	
		SN2_2	0.718	0.891		
		SN2_3	0.642	0.896		
Group belonging and identity	SN3_1	0.676	0.894	0.881		
	SN3_2	0.674	0.894			
	SN3_3	0.686	0.893			

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Table 4.6 (continue)

Variable	Dimension	Item	CITC	CAID	Dimension α	Factor α
		BI1_1	0.703	0.895		
	Purchase intention	BI1_2	0.679	0.897	0.877	
		BI1_3	0.656	0.899		
		BI2_1	0.666	0.898		
Behavioral intention	Recommendation intention	BI2_2	0.692	0.896	0.882	0.907
		BI2_3	0.721	0.894		
		BI3_1	0.659	0.899		
	Environmental action intention	BI3_2	0.699	0.896	0.879	
		BI3_3	0.678	0.897		
		PP1_1	0.689	0.847		
	Price sensitivity	PP1_2	0.681	0.848	0.862	
		PP1_3	0.640	0.855		
Price perception		PP2_1	0.685	0.847		0.871
	Price elasticity and payment willingness	PP2_2	0.661	0.852	0.866	
		PP2_3	0.677	0.849		
		GPB1_1	0.755	0.903		
	Purchase intention and decision	GPB1_2	0.769	0.902	0.920	
		GPB1_3	0.772	0.902		
green purchasing behavior		GPB1_4	0.769	0.902		0.917
		GPB2_1	0.718	0.907		
	Buying frequency and loyalty	GPB2_2	0.707	0.908	0.897	
		GPB2_3	0.722	0.907		

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4.4 Exploratory Factor Analysis of Variables

Validity refers to the degree to which a test or scale accurately measures the intended psychological construct, serving as a context-dependent concept influenced by both random and systematic errors. High reliability is a prerequisite for validity: while reliable measurements (low random error) may still lack validity if systematic errors exist, unreliable measurements (high random error) inherently compromise validity. Validity assessment encompasses multiple dimensions, including content validity (relevance to theoretical constructs), convergent validity (inter-item correlations), discriminant validity (distinction from unrelated constructs), and structural validity (alignment with hypothesized frameworks). This study employs exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to evaluate scale validity. EFA verifies structural validity by examining whether extracted factors and item-factor assignments align with theoretical expectations, while CFA statistically tests model fit (e.g., root mean square error of approximation, RMSEA), convergent validity (standardized loadings >0.5), and discriminant validity (average variance extracted, AVE >0.5).

Methodological rigor begins with pre-analysis checks. The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity are prerequisites for EFA. A KMO >0.7 indicates adequate sampling adequacy, with values >0.9 deemed excellent, while Bartlett's test ($p < 0.05$) confirms variable intercorrelations. For the "Social Media" variable, KMO = 0.849 (very good suitability) and Bartlett's test ($p < 0.001$) validated factorability. EFA identified two factors explaining 80.533% of total variance, with items loading distinctly: Items 1–3 loaded on Factor 1 (theoretical construct A), and Items 4–6 loaded on Factor 2 (construct B), achieving perfect theoretical alignment. All items demonstrated communality indices >0.5 , confirming strong factor representation.

Analytical outcomes reinforce construct validity. The two-factor structure met criteria for both convergent and discriminant validity: standardized loadings ranged from 0.62 to 0.85 within respective factors, exceeding the 0.5 threshold, while cross-loadings remained below 0.4. The cumulative variance explained (80.533%) exceeded the commonly accepted threshold of 60%, indicating robust representation of the latent constructs. These results collectively validate the scale's utility in measuring green air conditioner-related psychological constructs, supporting subsequent hypothesis testing and theoretical inferences.

This study assessed scale validity through both exploratory and confirmatory factor analyses. First, exploratory factor analysis (EFA) established structural validity: the Kaiser–Meyer–Olkin measure of sampling adequacy was 0.849 (exceeding the 0.70 threshold), and Bartlett's test of sphericity was significant (χ^2 , $p < 0.001$), confirming data suitability for factor extraction. For the Social-Media construct, EFA yielded two factors that together explained 80.5% of the variance; all items loaded on their intended factors in the rotated solution with

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communalities above 0.50 (Table 3.6). Building on these results, we conducted confirmatory factor analysis (CFA) to evaluate construct validity, examining fit indices, standardized factor loadings, composite reliability (CR), and average variance extracted (AVE), all of which met recommended thresholds. As shown in Table 4.7.

Table 4.7 Exploratory factor analysis of social media

	Component		Extraction
	1	2	
SM1_1	0.214	0.862	0.790
SM1_2	0.324	0.833	0.799
SM1_3	0.279	0.856	0.810
SM2_1	0.867	0.259	0.818
SM2_2	0.862	0.264	0.813
SM2_3	0.849	0.287	0.802
KMO	0.849		
Bartlett's Test	2131.804		
Sig.	0.000		
Eigenvalues	2.443	2.389	
% of Variance	40.718	39.815	
Cumulative %	40.718	80.533	

Applying the same methodology to analyze other variables, the Behavioral Attitude variable demonstrated strong suitability for factor analysis with a KMO value of 0.849 (>0.7) and a statistically significant Bartlett's test of sphericity ($p < 0.001$). The factor analysis revealed two latent components explaining 83.583% of total variance, indicating robust representation of the underlying structure. The rotated factor loading matrix showed clear differentiation: Items 1–3 loaded exclusively on Factor 1, while Items 4–6 aligned with Factor 2, achieving perfect congruence with theoretical classifications. All items exhibited communality indices exceeding 0.5, confirming strong factor representation and measurement validity. As shown in Table 4.8.

Table 4.8 Exploratory Factor Analysis of Behavioral Attitude

	Component		Extraction
	1	2	
BA1_1	0.277	0.868	0.830
BA1_2	0.255	0.882	0.842
BA1_3	0.306	0.851	0.818
BA2_1	0.887	0.258	0.854
BA2_2	0.859	0.296	0.826
BA2_3	0.873	0.289	0.845
KMO	0.849		
Bartlett's Test	2504.154		
Sig.	0.000		
Eigenvalues	2.523	2.492	
% of Variance	42.050	41.533	
Cumulative %	42.050	83.583	

For the Perceptual Behavior Control variable, the overall KMO value was 0.872 (>0.7), and Bartlett's test of sphericity reached statistical significance ($p < 0.001$), confirming suitability for factor analysis. The rotated factor loading matrix exhibited clear dimensional distinctions: Items 1–3 loaded on Factor 1, Items 4–6 on Factor 2, and Items 7–9 on Factor 3, showing exact correspondence with theoretical classifications. All items displayed communality indices exceeding 0.5, ensuring strong factor representation and validity. As shown in Table 4.9.

Table 4.9 Exploratory Factor Analysis of Perceptual Behavior Control

	Component			Extraction
	1	2	3	
PBC1_1	0.850	0.236	0.254	0.842
PBC1_2	0.850	0.265	0.247	0.853
PBC1_3	0.875	0.221	0.199	0.854
PBC2_1	0.213	0.854	0.178	0.807
PBC2_2	0.209	0.857	0.199	0.818
PBC2_3	0.258	0.830	0.183	0.789
PBC3_1	0.175	0.127	0.882	0.825
PBC3_2	0.259	0.205	0.830	0.798
PBC3_3	0.231	0.242	0.829	0.799

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Table 4.9(continue)

	Component			Extraction
	1	2	3	
KMO		0.872		
Bartlett's Test		3546.903		
Sig.		0.000		
Eigenvalues	2.515	2.445	2.424	
% of Variance	27.947	27.167	26.937	
Cumulative %	27.947	55.115	82.052	

For the Subjective Norm variable, the overall KMO value was 0.884 (>0.7), and Bartlett's test of sphericity reached statistical significance ($p < 0.001$), confirming suitability for factor analysis. Eigenvalue decomposition identified three latent factors accounting for 81.432% of total variance, demonstrating robust representation of the underlying structure. The rotated factor loading matrix revealed distinct dimensional groupings: Items 1–3 loaded on Factor 1, Items 4–6 on Factor 2, and Items 7–9 on Factor 3, exhibiting exact alignment with theoretical classifications. All items exhibited communality indices exceeding 0.5, ensuring strong factor representation and construct validity. As shown in Table 4.10.

Table 4.10 Exploratory Factor Analysis of Subjective Norm

	Component			Extraction
	1	2	3	
SN1_1	0.864	0.231	0.181	0.833
SN1_2	0.823	0.247	0.261	0.806
SN1_3	0.858	0.183	0.224	0.821
SN2_1	0.217	0.276	0.835	0.821
SN2_2	0.290	0.290	0.788	0.789
SN2_3	0.189	0.195	0.872	0.834
SN3_1	0.242	0.834	0.224	0.804
SN3_2	0.223	0.841	0.231	0.811
SN3_3	0.199	0.832	0.282	0.812
KMO		0.884		
Bartlett's Test		3483.434		
Sig.		0.000		
Eigenvalues	2.477	2.440	2.412	
% of Variance	27.517	27.116	26.800	
Cumulative %	27.517	54.632	81.432	

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For the Behavioral Intention variable, the overall KMO value was 0.890 (>0.7), and Bartlett's test of sphericity reached statistical significance ($p < 0.001$), confirming suitability for factor analysis. Eigenvalue decomposition identified three latent factors accounting for 80.677% of total variance, demonstrating robust representation of the underlying structure. The rotated factor loading matrix revealed distinct dimensional groupings: Items 1–3 loaded on Factor 1, Items 4–6 on Factor 2, and Items 7–9 on Factor 3, exhibiting exact alignment with theoretical classifications. All items exhibited communality indices exceeding 0.5, ensuring strong factor representation and construct validity. As shown in Table 4.11.

Table 4.11 Exploratory Factor Analysis of Behavioral Intention

	Component			Extraction
	1	2	3	
BI1_1	0.231	0.824	0.286	0.814
BI1_2	0.253	0.813	0.240	0.783
BI1_3	0.213	0.852	0.206	0.814
BI2_1	0.228	0.211	0.846	0.813
BI2_2	0.217	0.266	0.840	0.824
BI2_3	0.304	0.268	0.795	0.796
BI3_1	0.844	0.207	0.226	0.807
BI3_2	0.834	0.246	0.255	0.822
BI3_3	0.819	0.243	0.241	0.789
KMO		0.890		
Bartlett's Test		3416.477		
Sig.		0.000		
Eigenvalues	2.434	2.416	2.411	
% of Variance	27.047	26.844	26.786	
Cumulative %	27.047	53.891	80.677	

For the Price Perception variable, the overall KMO value was 0.840 (>0.7), and Bartlett's test of sphericity reached statistical significance ($p < 0.001$), confirming suitability for factor analysis. Eigenvalue decomposition identified two latent factors accounting for 78.879% of total variance, demonstrating robust representation of the underlying structure. The rotated factor loading matrix revealed distinct dimensional groupings: Items 1–3 loaded on Factor 1, while Items 4–6 aligned with Factor 2, showing exact alignment with theoretical classifications.

All items exhibited communality indices exceeding 0.5, ensuring strong factor representation and construct validity. As shown in Table 4.12.

Table 4.12 Exploratory Factor Analysis of Price perception

	Component		Extraction
	1	2	
PP1_1	0.299	0.827	0.773
PP1_2	0.276	0.841	0.783
PP1_3	0.191	0.877	0.805
PP2_1	0.842	0.273	0.783
PP2_2	0.853	0.234	0.782
PP2_3	0.863	0.249	0.807
KMO	0.840		
Bartlett's Test	1929.542		
Sig.	0.000		
Eigenvalues	2.382	2.351	
% of Variance	39.703	39.176	
Cumulative %	39.703	78.879	

For the Green Purchasing Behavior variable, the overall KMO value was 0.895 (>0.7), and Bartlett's test of sphericity reached statistical significance ($p < 0.001$), confirming suitability for factor analysis. Eigenvalue decomposition identified two latent factors accounting for 81.704% of total variance, demonstrating robust representation of the underlying structure. The rotated factor loading matrix revealed distinct dimensional groupings: Items 1–4 loaded on Factor 1, while Items 5–7 aligned with Factor 2, showing exact alignment with theoretical classifications. All items exhibited communality indices exceeding 0.5, ensuring strong factor representation and construct validity. As shown in Table 4.13.

Table 4.13 Exploratory Factor Analysis of Green Purchasing Behavior

	Component		Extraction
	1	2	
GPB1_1	0.862	0.270	0.816
GPB1_2	0.829	0.324	0.792
GPB1_3	0.833	0.322	0.798
GPB1_4	0.862	0.287	0.826
GPB2_1	0.309	0.855	0.826

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Table 4.13(continue)

	Component		Extraction
	1	2	
GPB2_2	0.281	0.874	0.842
GPB2_3	0.321	0.846	0.819
KMO	0.895		
Bartlett's Test	3131.269		
Sig.	0.000		
Eigenvalues	3.145	2.574	
% of Variance	44.930	36.775	
Cumulative %	44.930	81.704	

Overall, for social media the Kaiser–Meyer–Olkin(KMO) measure of sampling adequacy was 0.849 (exceeding the 0.70 threshold), For the Behavioral Attitude variable, the overall KMO = 0.849 > 0.7, and the Bartlett's test of sphericity was significant at the $p < 0.001$ level; for the Perceptual Behavior Control variable, the overall KMO = 0.872 > 0.7, and the Bartlett's test of sphericity was significant at the $p < 0.001$ level; for the Subjective Norm variable, the overall KMO = 0.884 > 0.7, and the Bartlett's test of sphericity was significant at the $p < 0.001$ level; for the Behavioral Intention variable, the overall KMO = 0.890 > 0.7, and the Bartlett's test of sphericity was significant at the $p < 0.001$ level; for the Price perception variable, the overall KMO = 0.840 > 0.7, and the Bartlett's test of sphericity was significant at the $p < 0.001$ level; for the Green Purchasing Behavior variable, the overall KMO = 0.895 > 0.7, and the Bartlett's test of sphericity was significant at the $p < 0.001$ level. Therefore, these variables were highly suitable for factor analysis. The communalities of each item factor were higher than 0.5, indicating that the factors had a strong representativeness for the items.

4.5 Confirmatory Factor Analysis of the Overall Model

Based on the results of exploratory factor analysis, the confirmatory factor analysis model as shown in Figure 1 was further established using statistical software to test the structural validity, aggregated validity and discriminant validity of the questionnaire survey results.

Based on the exploratory factor analysis results, we further examined the structural validity and convergent validity. The test results of the model's structural validity indicate that among the calculated results of each fit index, $\chi^2/df=1.131<3$, $RMSEA=0.015<0.08$, $SRMR=0.030<0.08$, $IFI=0.992>0.9$, $TLI=0.992>0.9$, $CFI=0.992>0.9$ To sum up, all the fit indices of the variables in the questionnaire survey results meet the requirements of the analysis

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standards. The model has a good fit, a high overall fitness, and the questionnaire possesses strong structural validity, as shown in Table 4.14.

Table 4.14 Confirmatory factor analysis model fit degree

	Results	Range	Fit
χ^2/df	1.131	<3	Meet
RMSEA	0.015	<0.08	Meet
SRMR	0.030	<0.08	Meet
IFI	0.992	>0.9	Meet
TLI	0.992	>0.9	Meet
CFI	0.992	>0.9	Meet

This study employed composite reliability (CR) and average variance extracted (AVE) as indicators for evaluating the convergent validity of the questionnaire. When CR exceeds 0.7 and AVE surpasses 0.5, it indicates that the items within a construct measure a consistent underlying concept, demonstrating adequate convergent validity. Conversely, lower values suggest divergent measurement orientations among items under the same construct. Using standardized factor loading parameters derived from confirmatory factor analysis (CFA), the CR and AVE were calculated. The results indicated that all constructs and their dimensions in the model achieved CR values above 0.8 and AVE values exceeding 0.5, thereby confirming strong convergent validity across all variables, as shown in Table 4.15.

Table 4.15 Convergent validity test results

	Item	SFL	CR	AVE
Social media	Frequency	0.827	0.794	0.658
	trust	0.795		
Behavioral attitude	Perceived importance	0.771	0.785	0.647
	perceived benefits	0.836		
	Information	0.802		
Perceptual behavior control	Economic	0.723	0.802	0.575
	Self-efficacy	0.747		

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Table 4.15(continue)

	Item	SFL	CR	AVE
	Family and friends influence	0.742		
Subjective norm	Social opinion and expectation	0.813	0.830	0.620
	Group belonging and identity	0.806		
	Purchase intention	0.778		
Behavioral intention	Recommendation intention	0.818	0.846	0.647
	Environmental action intention	0.817		
	Price sensitivity	0.760		
Price perception	Price elasticity and payment willingness	0.832	0.776	0.635
Energy-efficient purchasing behavior	Purchase intention and decision	0.869	0.819	0.694
	Buying frequency and loyalty	0.795		
Frequency of social media use	SM1_1	0.796		
	SM1_2	0.851	0.873	0.697
	SM1_3	0.856		
Degree of trust in social media	SM2_1	0.853		
	SM2_2	0.848	0.884	0.717
	SM2_3	0.840		
Perceived importance of energy-efficient purchasing	BA1_1	0.863		
	BA1_2	0.868	0.897	0.745
	BA1_3	0.858		

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Table 4.15(continue)

	Item	SFL	CR	AVE
Perceived benefits of energy-efficient purchases	BA2_1	0.881		
	BA2_2	0.860	0.906	0.763
	BA2_3	0.879		
Information acquisition and understanding	PBC1_1	0.872		
	PBC1_2	0.895	0.911	0.773
	PBC1_3	0.871		
Economic capacity and resource	PBC2_1	0.834		
	PBC2_2	0.856	0.879	0.707
	PBC2_3	0.832		
Self-efficacy dimension	PBC3_1	0.822		
	PBC3_2	0.848	0.877	0.704
	PBC3_3	0.847		
Family and friends influence	SN1_1	0.860		
	SN1_2	0.856	0.889	0.728
	SN1_3	0.843		
Social opinion and expectation	SN2_1	0.859		
	SN2_2	0.846	0.883	0.716
	SN2_3	0.833		
Group belonging and identity	SN3_1	0.836		
	SN3_2	0.842	0.881	0.712
	SN3_3	0.854		
Purchase intention	BI1_1	0.867		
	BI1_2	0.820	0.877	0.704
	BI1_3	0.830		

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Table 4.15(continue)

	Item	SFL	CR	AVE
Recommendation intention	BI2_1	0.825		
	BI2_2	0.856	0.882	0.713
	BI2_3	0.852		
Environmental action intention	BI3_1	0.828		
	BI3_2	0.868	0.880	0.709
	BI3_3	0.830		
Price sensitivity	PP1_1	0.823		
	PP1_2	0.829	0.863	0.677
	PP1_3	0.816		
Price elasticity and payment willingness	PP2_1	0.830		
	PP2_2	0.809	0.868	0.686
	PP2_3	0.846		
Purchase intention and decision	GPB1_1	0.860		
	GPB1_2	0.855	0.921	0.744
	GPB1_3	0.858		
	GPB1_4	0.876		
Buying frequency and loyalty	GPB2_1	0.861		
	GPB2_2	0.870	0.897	0.744
	GPB2_3	0.856		

In the comparison of model discriminative validity, the relationship between the correlation coefficient between latent variables and the square root value of the AVE of the variables themselves is usually adopted for judgment. When the correlation coefficient between two variables is lower than the square root value of the AVE of these two variables themselves, it indicates that the correlation between the variables is less than the aggregation of the variables themselves, that is, the model can effectively distinguish the variables.

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Based on the above principles, the inspection parameters are summarized in the following table. Among them, the diagonal positions in the table below represent the square root values of AVE, and the rest are the correlation coefficient matrices between variables. It can be known from the data in the table that the correlation coefficients between each variable pairwise are not higher than the values taken at the diagonal positions of the corresponding variables, and the model has a good discriminative validity. As shown in Table 4.16.

Table 4.16 Discriminative validity test

	SM	BA	PBC	SN	BI	PP	GPB
SM	0.811						
BA	0.501***	0.804					
PBC	0.418***	0.236***	0.758				
SN	0.411***	0.262***	0.282***	0.788			
BI	0.509***	0.422***	0.366***	0.446***	0.805		
PP	0.153***	0.121***	0.257***	0.144***	0.011	0.797	
GPB	0.520***	0.453***	0.436***	0.407***	0.566***	-0.049	0.833

Note : *** $p < 0.001$. SM: Social Media; BA: Behavioral Attitude; PBC: Perceptual Behavior Control; SN: Subjective Norm; BI: Behavioral Intention; PP: Price perception; GPB: Green Purchasing Behavior.

4.6. Regression Analysis and Hypothesis Testing

Based on theoretical analysis, research hypotheses were proposed. In this study, the statistical software was employed to establish the structural equation model of the comprehensive influence relationships among variables as shown in Figure 4.1 aiming to compare the causal influence relationships between variables.

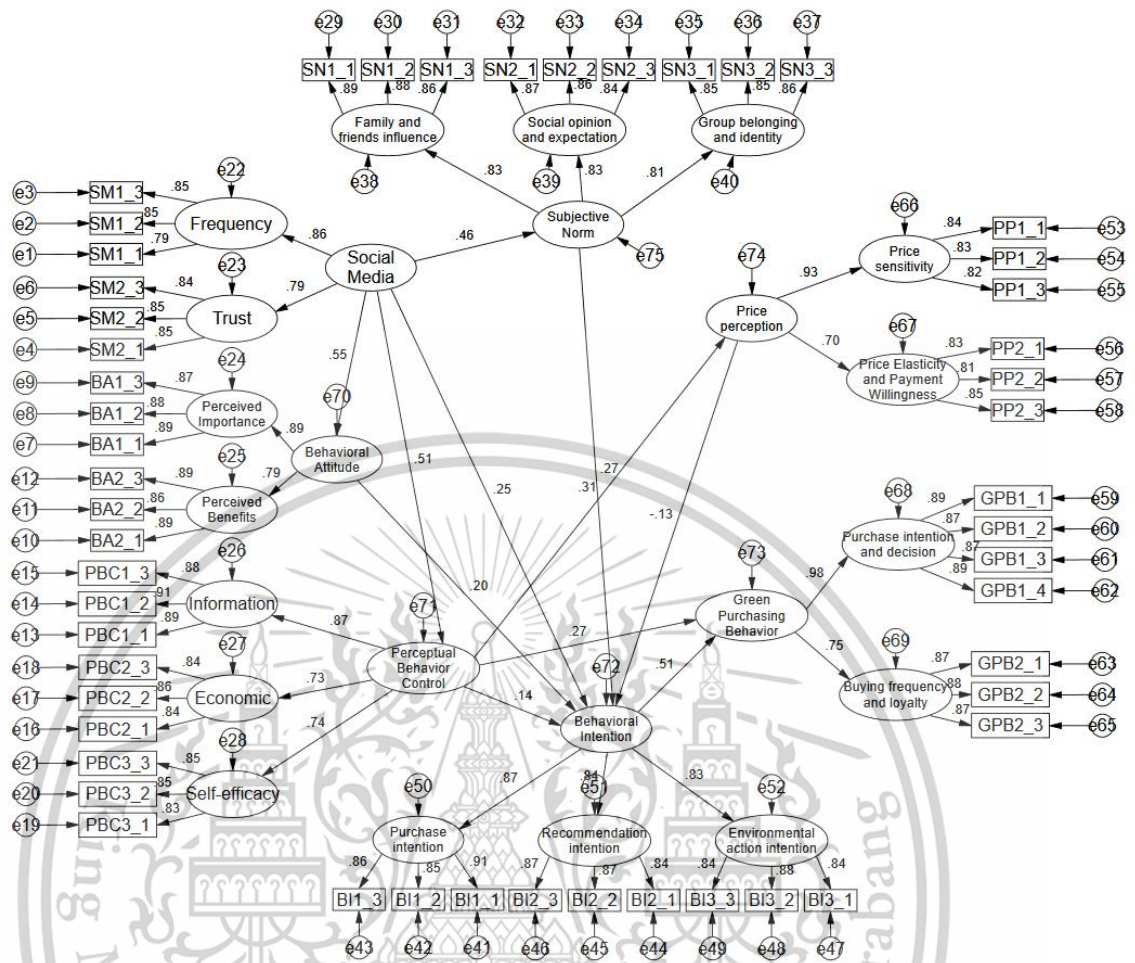


Figure 4.1 Schematic diagram of the structural equation model

The test results of the model's structural validity revealed that among the calculated results of each fit index, as shown in Table 8, $\chi^2/df=1.337 < 3$, $RMSEA=0.024 < 0.08$, $SRMR=0.059 < 0.08$, $IFI=0.980 > 0.9$, $TLI=0.979 > 0.9$, $CFI=0.980 > 0.9$. To sum up, all the fit indices of the model structure met the requirements of the analysis standards and possessed strong structural validity. As shown in Table 4.17.

Table 4.17 Fit of structural equation model

	Results	Range	Fit
χ^2/df	1.337	<3	Meet
RMSEA	0.024	<0.08	Meet
SRMR	0.059	<0.08	Meet
IFI	0.980	>0.9	Meet

Table 4.17(continue)

	Results	Range	Fit
TLI	0.979	>0.9	Meet
CFI	0.980	>0.9	Meet

In the results of regression coefficient calculation and testing, social media has a significant positive influence on Subjective Norm, with the standardized regression coefficient $\beta=0.458$ and the significance test result $p<0.001$, so the original hypothesis H1a is established. Social Media has a significant positive influence on Behavioral Attitude, with the standardized regression coefficient $\beta=0.553$ and the significance test result $p<0.001$, so the original hypothesis H1b is established. Social Media has a significant positive influence on Behavioral Intention, with the standardized regression coefficient $\beta=0.248$ and the significance test result $p<0.001$, so the original hypothesis H1c is established. Social Media has a significant positive influence on Perceptual Behavior Control, with the standardized regression coefficient $\beta=0.512$ and the significance test result $p<0.001$, so the original hypothesis H1d is established.

Behavioral Attitude has a significant positive influence on Behavioral Intention, with the standardized regression coefficient $\beta=0.199$ and the significance test result $p<0.001$, so the original hypothesis H2 is established.

Perceptual Behavior Control has a significant positive influence on Behavioral Intention, with the standardized regression coefficient $\beta=0.144$ and the significance test result $p=0.009<0.01$, so the original hypothesis H3a is established. Perceptual Behavior Control has a significant positive influence on Price perception, with the standardized regression coefficient $\beta=0.309$ and the significance test result $p<0.001$, so the original hypothesis H3b is established. Perceptual Behavior Control has a significant positive influence on Green Purchasing Behavior, with the standardized regression coefficient $\beta=0.272$ and the significance test result $p<0.001$, so the original hypothesis H3c is established.

Price perception has a significant negative influence on Behavioral Intention, with the standardized regression coefficient $\beta=-0.131$ and the significance test result $p=0.004<0.01$, so the original hypothesis H4 is established.

Subjective Norm has a significant positive influence on Behavioral Intention, with the standardized regression coefficient $\beta=0.275$ and the significance test result $p<0.001$, so the original hypothesis H5 is established.

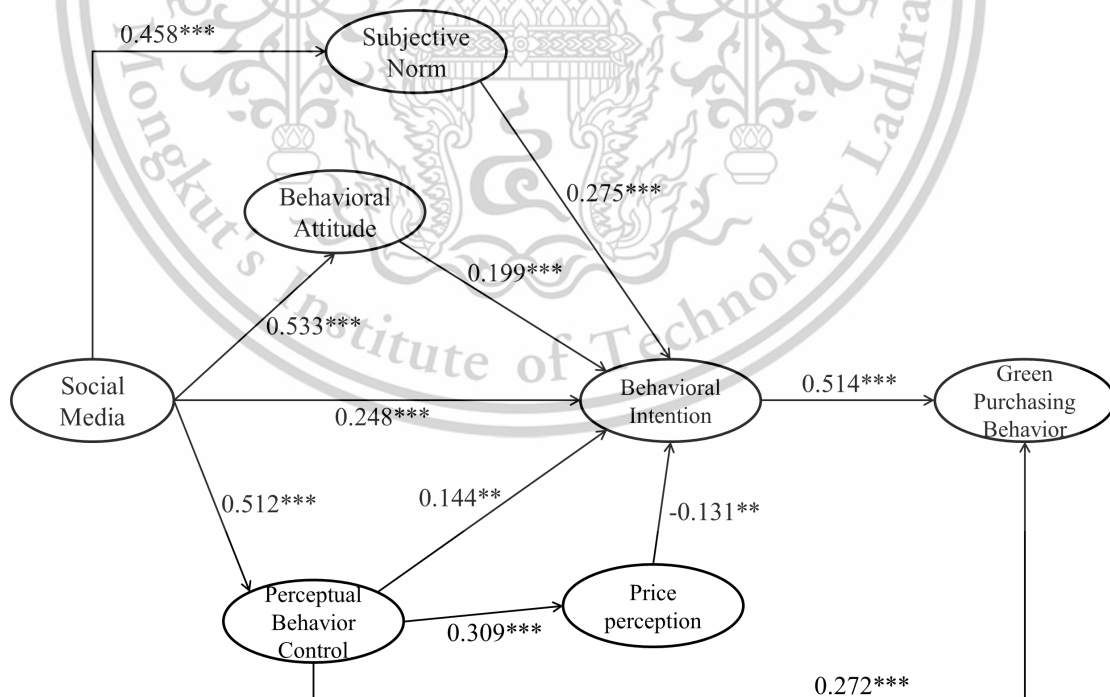
Behavioral Intention has a significant positive influence on Green Purchasing Behavior, with the standardized regression coefficient $\beta=0.514$ and the significance test result $p<0.001$, so the original hypothesis H6 is established. As shown in Figure4.2.

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Table 4.18 Test of the influence relationships among variables

Path	b	β	SE	CR	p	Label
SM → PBC	0.688	0.512	0.075	9.150	<0.001	H1d
SM → SN	0.595	0.458	0.072	8.316	<0.001	H1a
SM → BA	0.766	0.553	0.080	9.629	<0.001	H1b
PBC → PP	0.279	0.309	0.046	6.095	<0.001	H3b
SM → BI	0.370	0.248	0.111	3.327	<0.001	H1c
BA → BI	0.213	0.199	0.060	3.551	<0.001	H2
PBC → BI	0.159	0.144	0.061	2.600	0.009	H3a
PP → BI	-0.160	-0.131	0.056	-2.887	0.004	H4
SN → BI	0.315	0.275	0.057	5.523	<0.001	H5
PBC → GPB	0.311	0.272	0.049	6.338	<0.001	H3c
BI → GPB	0.531	0.514	0.045	11.814	<0.001	H6

**Figure 4.2** Test results of the influence relationships among variables

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4.7. Mediation Effect Analysis

Based on the test results of the direct influence relationships, we further analyze the significance of each indirect influence relationship in the model. Among them, the mediation effect sizes are all corrected for bias by sampling 5,000 times using the bootstrap method. According to the test results of each mediating relationship, the indirect effect sizes of social media on Behavioral Intention and energy-efficient purchasing behavior through variables such as behavioral attitude, perceptual behavior control, subjective norm, and price perception all reach a significant level, with the 95% confidence intervals not containing zero, as shown in Table 4.19. In addition, the indirect effect sizes of perceptual behavior control on behavioral intention and energy-efficient purchasing behavior through price perception also reach a significant level, with the 95% confidence intervals not containing zero. Thus, each indirect influence relationship in the model is established.

Table 4.19 Mediation effect analysis results

	Estimate	BootSE	Lower	Upper	p
SM→SN→BI	0.187	0.031	0.131	0.250	0.002
SM→BA→BI	0.164	0.040	0.086	0.256	0.001
SM→PBC→BI	0.110	0.035	0.047	0.180	0.002
SM→PBC→PP→BI	-0.031	0.010	-0.055	-0.015	0.001
PBC→PP→BI	-0.045	0.014	-0.078	-0.022	0.001
SM→PBC→GPB	0.214	0.042	0.140	0.298	0.002
SM→SN→BI→GPB	0.100	0.018	0.069	0.139	0.001
SM→BA→BI→GPB	0.087	0.024	0.043	0.139	0.002
SM→PBC→BI→GPB	0.058	0.019	0.027	0.100	0.001
SM→PBC→PP→BI→GPB	-0.016	0.006	-0.031	-0.008	0.001
PBC→PP→BI→GPB	-0.024	0.008	-0.043	-0.011	0.001

4.8 Comparison of multiple sets of results

After specifically comparing the standardized regression influence coefficients in each model, the standardized coefficients of each regression path are basically the same in the multi-group analysis of gender and age, which is also consistent with the results of the equivalence test of the restricted model. However, in the multi-group analysis of different monthly income levels, the influence relationships among variables in the high-income group are significantly lower than those in the other two income groups. The coefficient values are relatively low or do not reach the significance level. In contrast, the influence relationships among variables in the low-income group are relatively strong, and the standardized regression coefficients are significantly higher than those in the middle-income and high-income sample groups.

Table 4.20 Results of the influence relationships among variables in multi-group structural equation models

Path	Gender		Age			Monthly Income		
	Male	Female	Generation Z	Generation Y	Generation X	Less than 3,500	3,501 — 10,000	Over 10,000
	SM→PBC	0.502***	0.528***	0.518***	0.512***	0.510***	0.612***	0.455***
SM→SN	0.447***	0.472***	0.462***	0.456***	0.454***	0.680***	0.359***	-0.006
SM→BA	0.538***	0.564***	0.558***	0.552***	0.550***	0.671***	0.507***	0.032
PBC→PP	0.303***	0.308***	0.310***	0.309***	0.309***	0.384***	0.262**	0.251*
SM→BI	0.239***	0.251***	0.251***	0.248***	0.248***	0.264*	0.261*	-0.003
BA→BI	0.204***	0.205***	0.201***	0.201***	0.201***	0.193*	0.187	0.068
PBC→BI	0.142*	0.142*	0.142*	0.142*	0.142*	0.207**	0.198*	-0.073
PP→BI	-0.132**	-0.129**	-0.129**	-0.130**	-0.130**	-0.191**	-0.064	0.035
SN→BI	0.274***	0.272***	0.273***	0.273***	0.274***	0.306***	0.213*	0.155
PBC→GPB	0.270***	0.272***	0.271***	0.271***	0.271***	0.265***	0.246***	0.126
BI→GPB	0.515***	0.518***	0.516***	0.515***	0.515***	0.580***	0.550***	0.171

The analysis results show that Generation Z is the most significantly influenced by social media in green purchasing. Specifically, the impacts of social media on the Perceptual Behavior

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Control and Subjective Norm of Generation Z are more significant than those of Generation Y and Generation X. When it comes to purchasing green air conditioning, female consumers are more likely to be influenced by social media. Another significant characteristic is that the higher the income level, the less significant the influence of social media is, indicating that low-income groups are more easily influenced by social media when buying green air conditioning.

4.8.1 Sociological Insights into the Impact of Social Media from a Generational Perspective

Age-related differences significantly shape how social media influences green-consumption behavior, with Generation Z exhibiting the highest responsiveness. Our multi-group comparison (Figures 4.3-4.6) reveals marked generational disparities: Generation Z shows the strongest effects of social-media exposure on perceived behavioral control and subjective norm. As true digital natives, Gen Z consumers integrate social platforms into their socialization, using virtual networks to form identity and internalize group norms. Compared to Generations Y and X, they rely more heavily on online communities and are particularly susceptible to influencers and trending topics, thereby reinforcing their green-consumption norms. Furthermore, social media's interactive functionalities bolster Gen Z's perceived ability to enact eco-friendly purchases, making green buying feel readily attainable. This pattern exemplifies social-learning theory and underscores the need for marketers to tailor communication strategies to Generation Z's digital preferences.

Meanwhile, further in-depth analysis reveals that. (1) The influence of social media on mediating variables shows a phenomenon of intergenerational convergence. There is no significant difference in the influence of social media on perceived behavioral control (PBC), subjective norms (SN), and behavioral attitudes (BA) among the three generations. The core reason might lie in the fact that the information dissemination mechanisms of social media (such as algorithmic recommendations and the KOL effect) are universal for all age groups, resulting in relatively small intergenerational differences in the initial information reception stage. (2) In terms of the transformation from behavioral intention to purchase behavior, there exists a phenomenon of intergenerational differentiation. Although the influence of behavioral intention (BI) on purchase behavior (GPB) was not different among the three generations, the path coefficients of perceived behavioral control (PBC) were highly consistent, indicating that the older group did not significantly inhibit action transformation due to resource constraints (such as income and purchasing power). The possible contradiction point is that the PBC coefficient of Generation X is the same as that of Generation Z, but the actual purchasing behavior may be restricted by other factors (such as family decision-making power and brand loyalty), and further analysis needs to be carried out in combination with income data.

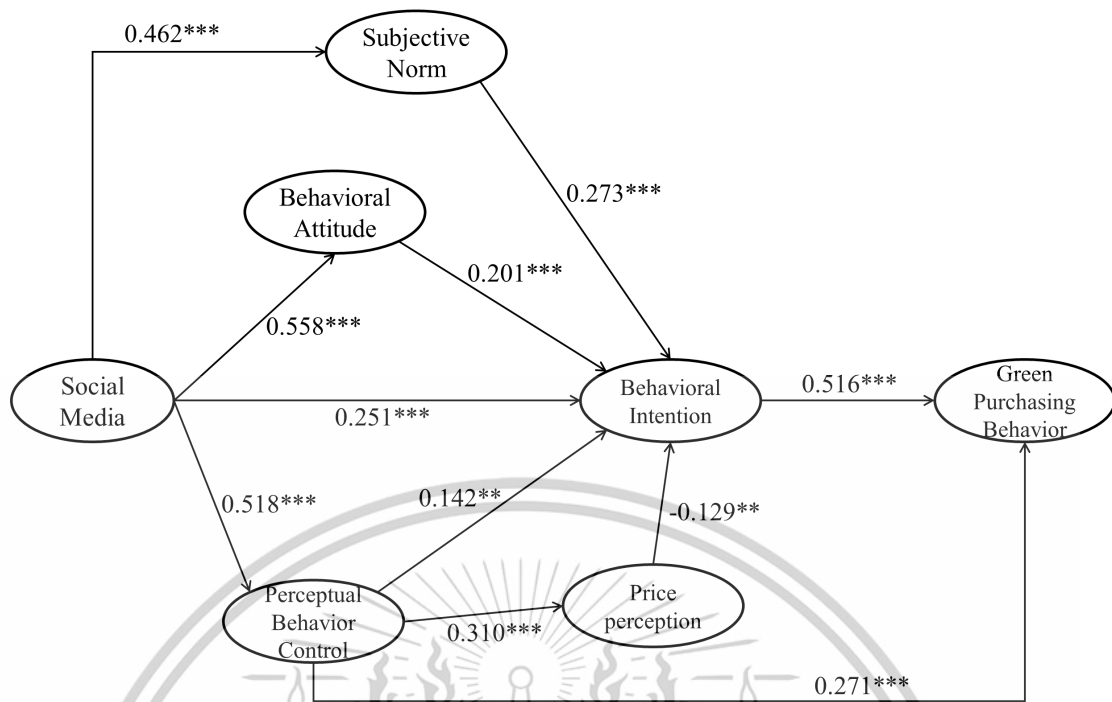


Figure 4.3. Multi-group analysis and test results of the Generation Z group

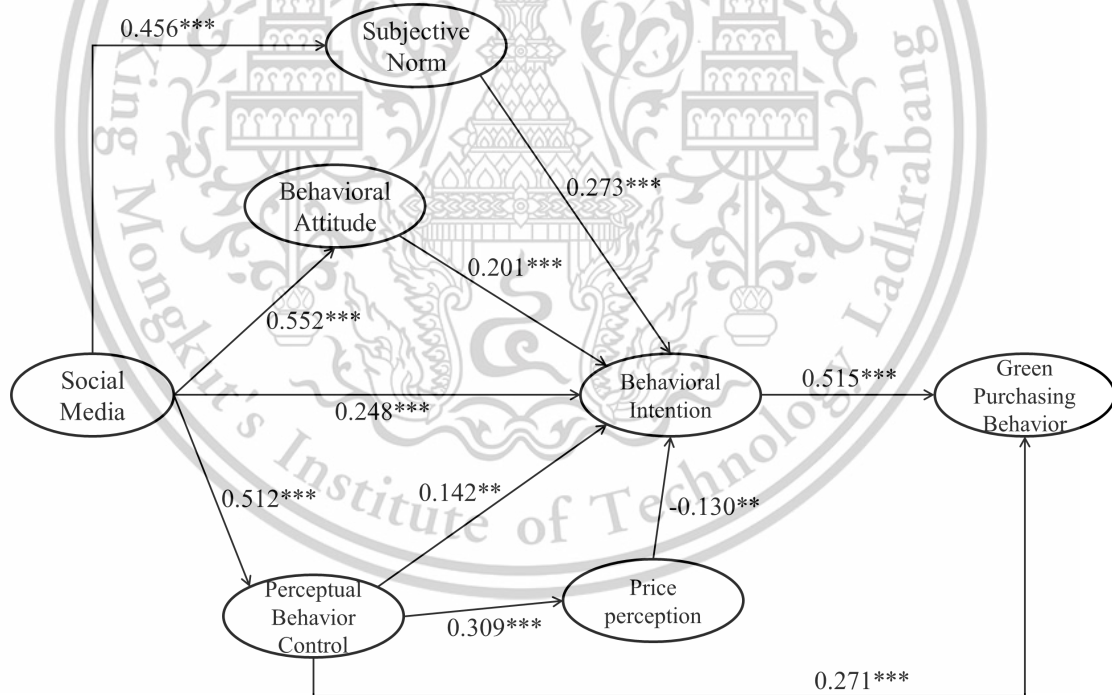


Figure 4.4 Multi-group analysis and test results of the Generation Y group

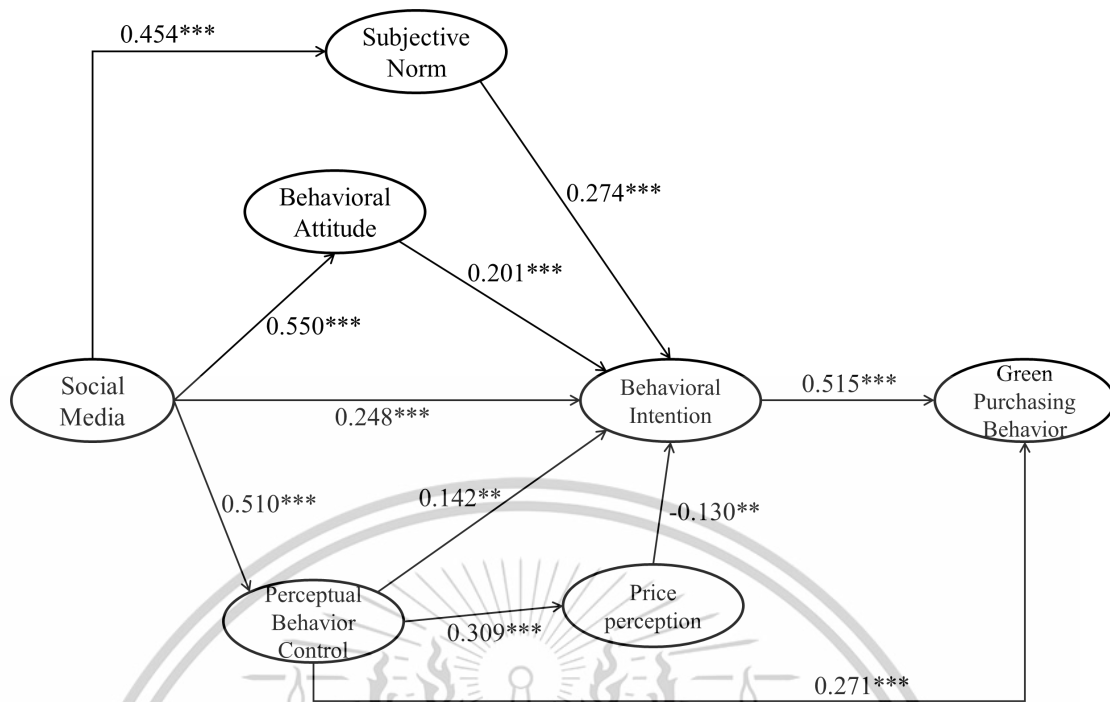


Figure 4.5 Multi-group analysis test results of Generation X group

4.8.2 Psychological Insights into the Impact of Social Media from a Gender Perspective

Multi-group analysis shows that female consumers are markedly more responsive to social-media influence in green-air-conditioner purchases (Figures 4.6–4.7). Psychological research indicates that women generally exhibit higher empathy and environmental sensitivity, making them especially receptive to emotional narratives and scenario-based marketing conveyed via social platforms. Moreover, peer recommendations and rich visual product presentations align with women’s information-processing preferences, activating their concerns for family well-being and environmental stewardship and thereby strengthening their purchase intentions. This evidence highlights how marketing-psychology principles—by tailoring social-media content to gender-specific traits—can effectively engage the female segment in sustainable consumption.

Further detailed analysis shows that (1) in terms of perceived behavior control (PBC), women (0.528) are more likely than men (0.502) to enhance their purchasing confidence through social media. The possible reason is that, according to the social role theory, women are more inclined to obtain information and build trust (such as sharing environmental protection certifications) through social networks, while men may rely more on independent decision-making. In terms of subjective norms (SN), women (0.472) are more sensitive to the social pressure of social media, while men (0.447) are more autonomous. This can be supported by the usual empirical evidence. Women attach more importance to others' evaluations (such as friend recommendations and social media comments) in shopping decisions. (2) In terms of

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behavioral attitude (BA), there are significant differences between different genders in this aspect. Women (0.564) have a stronger positive attitude towards green air conditioners than men (0.538), which may be driven by values. Women pay more attention to the social significance of environmental protection issues (such as carbon emission reduction), and it may also be due to the symbolic nature of consumption. Green air conditioners are regarded as a symbol of women's "refined life", while men pay more attention to functionality. (3) Regarding the transformation from behavioral intention to purchase behavior, although there was no significant difference in the SM→BI and BA→BI pathways between men and women, the coefficient of women in PBC→PP (Perceived Behavioral Control → willingness to pay) was slightly higher (0.308 vs. 0.303). It indicates that when women have purchasing confidence, they are more likely to convert it into actual payment behavior.

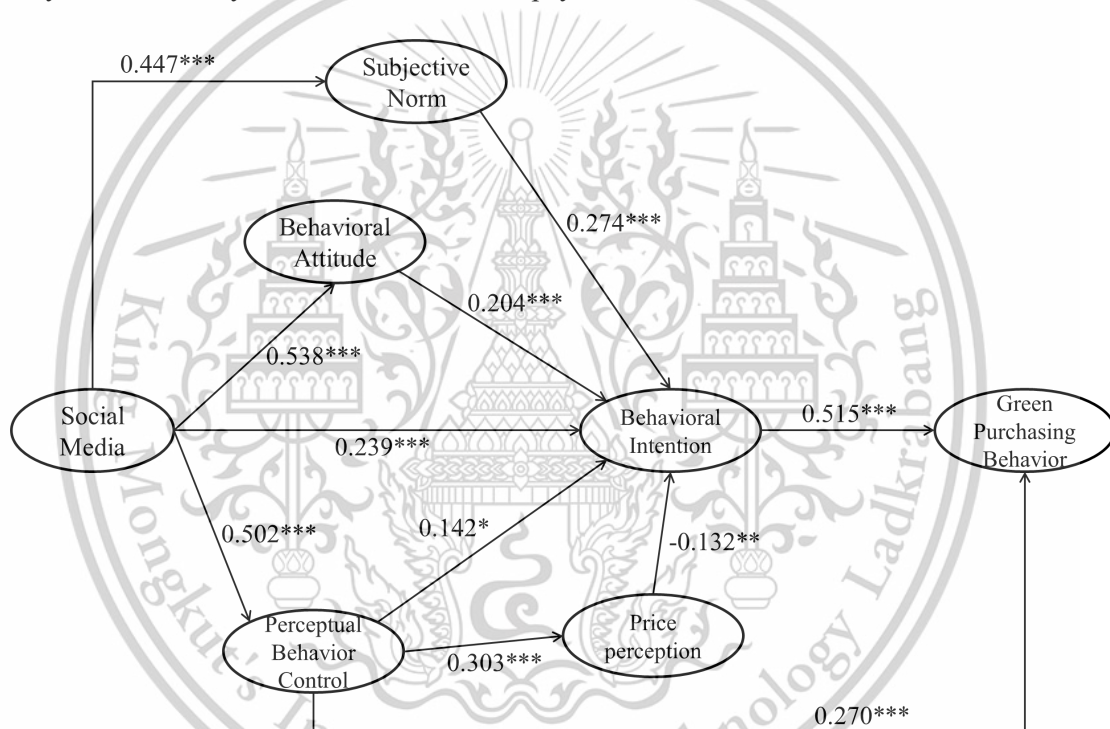


Figure 4.6 Test results of multi-group analysis of the male group

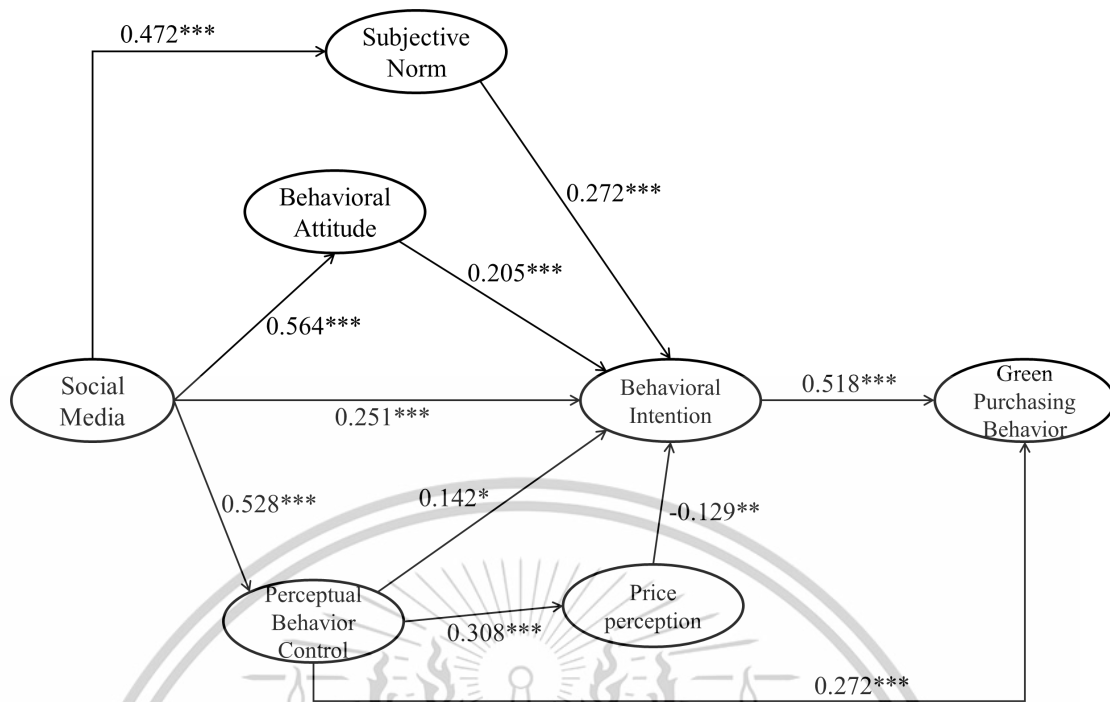


Figure 4.7 Test results of multi-group analysis of the female group

4.8.3. Economic Insights into the Impact of Social Media from an Income Perspective

Income has a significant impact on consumers' purchasing behavior. Therefore, this paper divides the income into three groups for analysis based on the scope of income. Multi-group comparisons (Figures 4.8–10) reveal an inverse relationship between household income and social-media influence on green-air-conditioner purchases: lower-income consumers are more impacted by social-media content. Economically, budget-constrained consumers face higher relative search costs, so the abundant, free information on social platforms reduces their decision-making burden and serves as a primary information source. Conversely, higher-income groups—less sensitive to cost considerations—can afford missteps and instead prioritize factors such as brand equity and premium service experiences, diminishing the relative importance of social-media signals. These findings suggest that manufacturers should segment the market by income level and deploy cost-effective, social-media-driven marketing strategies to stimulate green demand among lower-income consumers.

Further analysis shows that in terms of the influence of social media on the population, for the low-income group, the influence of social media is relatively strong (SM→PBC=0.618, SM→SN=0.68, SM→BA=0.671), all of which are much higher than those of the middle-income and high-income groups, indicating that the low-income group is greatly influenced by the opinions of others. In terms of price sensitivity, high-income groups are not affected by prices, indicating that due to their high income, they do not focus on prices. However, both middle-income and low-income groups are affected by prices, with a negative correlation, and

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low-income groups are most affected by prices. Middle-income earners are in the "information sensitive period". Social media not only conveys environmental protection values (enhancing SN),but also faces price concerns (suppressing SM→PBC).

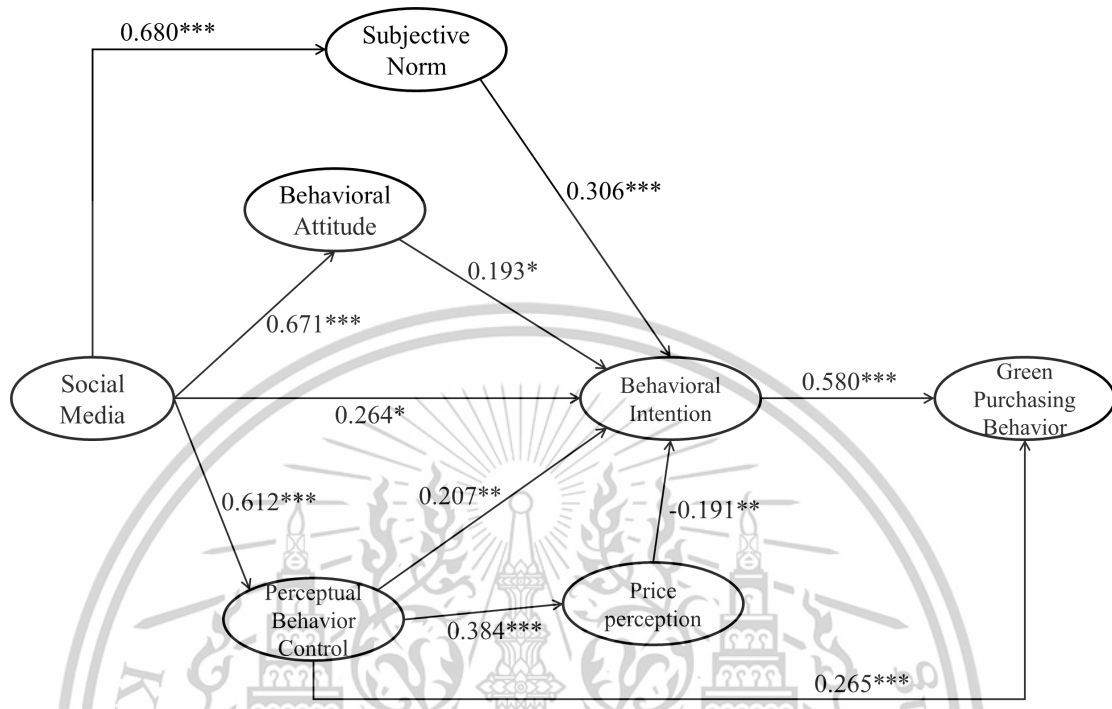


Figure 4.8 Test results of multi-group analysis for low-income groups

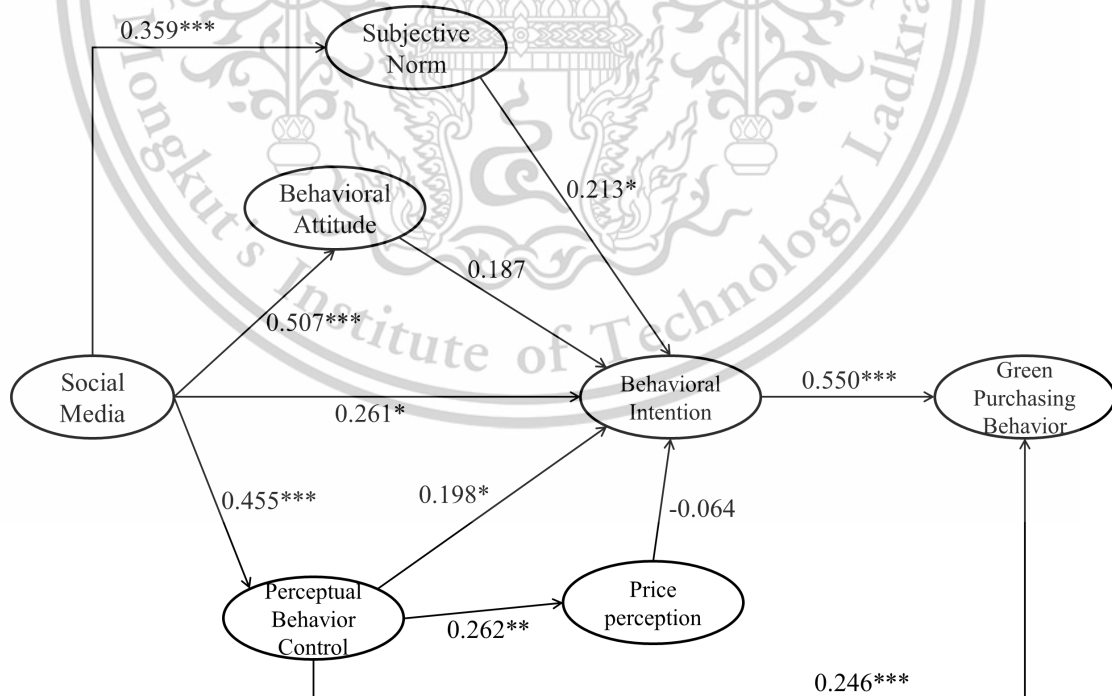


Figure 4.9. Test results of multi-group analysis tests for the middle-income group

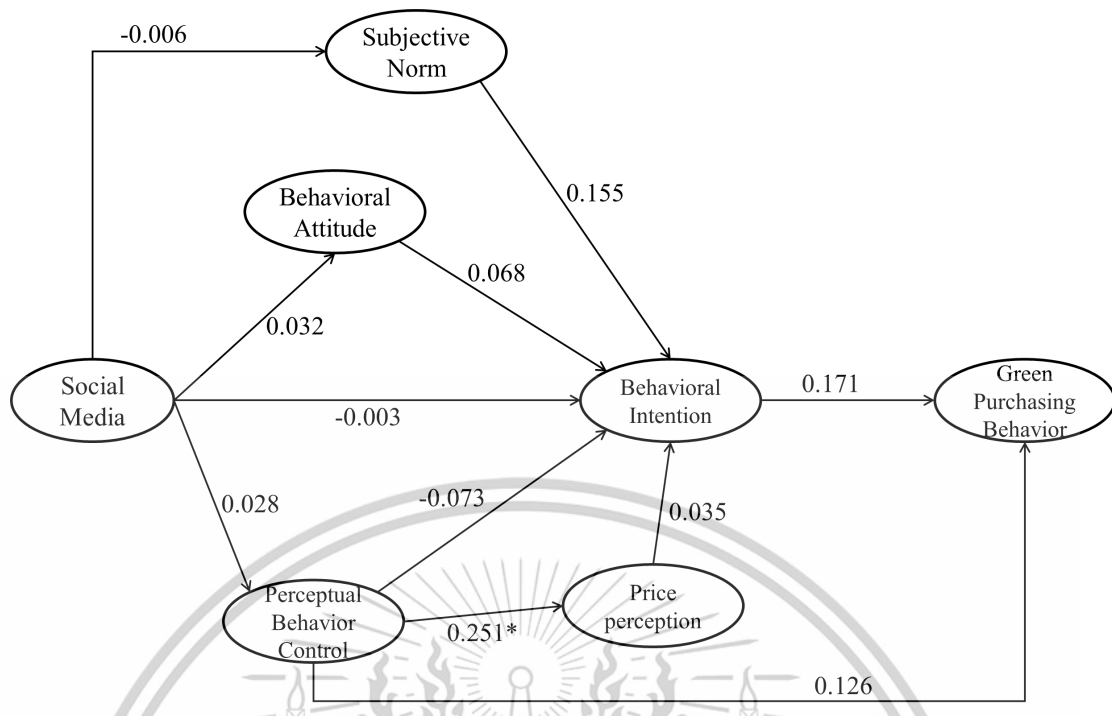


Figure 4.10 Test results of multi-group analysis of the high-income group

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CHAPTER 5

CONCLUSIONS AND DISCUSSION

5.1. Conclusions

This study explores the impact and its mechanisms through which social media influences green purchasing behavior, focusing on air conditioning—a representative essential good—as a case study. Amid exponential growth of the digital economy, and widespread social media adoption, this study examines emerging green purchasing trends. By integrating price perception as a critical factor to extend the TPB framework, we empirically examine the impact of consumer exposure to social media on air conditioning purchase behaviors and systematically uncover their underlying drivers. The principal findings are as follows:

(1) Price perception strengthens the TPB framework. Integrating price sensitivity into TPB significantly increases its explanatory power for green air-conditioning purchases, improving model fit and robustness across alternative specifications.

Our extended TPB analysis reveals that price perception significantly and negatively influences consumers' intention to purchase green air conditioners. Empirical data show a clear inverse relationship: as perceived cost rises, green-purchase intention declines. This result aligns with consumer-behavior theories that underscore cost-benefit trade-offs in decision-making: when consumers overestimate purchase costs, their intention to buy diminishes. In the green-air-conditioning market—despite growing environmental awareness—economic rationality remains paramount. Elevated price perceptions trigger risk-aversion, impeding the transition from intent to actual purchase. These insights not only validate the TPB framework in green-consumption contexts but also signal to manufacturers and marketers that, while green attributes enhance product value, pricing must be calibrated carefully to respect consumers' price elasticity and avoid market rejection.

(2) Social media drives green purchasing intentions and behaviors. Empirical results show that exposure to social media content positively and significantly influences both consumers' intentions to purchase green air conditioners and their actual eco-friendly purchasing behavior.

(3) Price sensitivity moderates social media's impact. Multi-group analyses reveal that the effect of social media on green-purchase intentions is contingent on consumers' price sensitivity: the influence is stronger among low-price-sensitivity respondents and attenuated among highly price-sensitive groups.

(4) Demographic heterogeneity shapes underlying mechanisms. Stratified by age, income, and gender, the pathways differ in strength and form—e.g. younger and higher-income segments exhibit stronger social media effects, while gender differences emerge in perceived behavioral control—underscoring the need for targeted strategies.

These conclusions highlight the multifaceted role of price perception and social media in steering green consumption, demonstrate the value of extending TPB with economic factors, and point to demographic-tailored interventions for promoting sustainable purchasing in the digital era.

5.2. Theoretical and Managerial Implications

This study makes several contributions to theoretical research.

(1) Extension of the TPB Framework. By integrating price perception into the traditional Theory of Planned Behavior (TPB), this study highlights the importance of economic considerations in green consumption decisions. The negative association between price perception and purchase intention underscores that financial constraints act as a barrier, even when behavioral attitudes and norms are favorable. This extension enriches TPB by incorporating a critical real-world factor often overlooked in traditional models, enhancing its applicability to pro-environmental behaviors in cost-sensitive contexts.

(2) Mechanisms of Digital Influence. The findings reveal how social media indirectly shapes purchase intentions through attitude, subjective norms, and perceived behavioral control. This clarifies the influence pathways through which digital social media platforms operate, such as social media fosters Subjective norm like Family and friends influence help to add pro-environmental intentions. Social media may amplify positive attitudes via targeted content or normative messaging, thereby refining understanding of digital interventions in behavioral change.

(3) Heterogeneity in Consumer Responses. The multi-group analysis demonstrates that the effects of social media and price perception vary significantly across age, gender, and income cohorts. For example, Generation Z and women exhibit higher susceptibility to social media influence, while low-income groups prioritize price. This reveals that theoretical models like TPB must account for contextual moderators (e.g., demographic factors) to capture the complexity of real-world decision-making, advancing theories of technology adoption and environmental behavior.

This study has several managerial implications for enterprises.

(1) Targeted Digital Marketing Strategies. Through multiple sets of comparative analyses, the paper finds that different groups have different levels of participation in social media activities. The platform should give priority to Generation Z and female consumers, taking

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advantage of their higher participation in social content to further carry out publicity and precise content push. This can amplify the perceived behavioral control and subjective norms, thereby promoting green consumption behavior. Social media algorithms could prioritize green product promotions for these high-impact demographics. And further stimulate the generational values and enable the younger generation to take sustainability as a life choice.

(2) Price Sensitivity Mitigation. Based on the analysis of price perception in the paper, to counter the negative impact of price perception among low-income groups, policy-makers or retailers could offer discounts, installment plans, or energy-saving rebates to reduce upfront costs. Provide clear comparisons of long-term energy savings versus purchase prices on digital platforms to reframe cost-benefit perceptions.

This study advances both theory and practice by demonstrating how digital platforms can be leveraged to promote sustainability while accounting for economic realities and demographic diversity. For policymakers and firms, it provides actionable insights to design inclusive, platform-specific interventions that maximize energy-efficient consumption.

5.3. Limitation and Future Research

Despite its contributions, this study has several limitations and suggests avenues for future research. First, although we obtained 600 valid responses across China's administrative regions, restricting the sample to a single country may limit the findings' representativeness and generalizability to other cultural or socioeconomic contexts. Second, our TPB extension included price sensitivity but omitted key drivers—such as cultural values, policy incentives (e.g., green appliance subsidies), and psychological constructs like environmental self-efficacy—which may mediate or moderate social media's effects. Third, the cross-sectional design precludes causal inference; future research should adopt longitudinal and cross-national designs to capture dynamic, culturally nuanced relationships between social media engagement and green purchasing behavior.

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APPENDIX A
Questionnaire

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Appendix A
QUESTIONNAIRE

INFLUENCE MECHANISM OF SOCIAL MEDIA ON CONSUMERS' GREEN PURCHASING BEHAVIOR OF AIR CONDITIONERS IN CHINA

Dear Respondent 尊敬的受访者

Thank you for taking the time out of your busy schedule to participate in this questionnaire survey. We are conducting a doctoral dissertation research on the topic of " INFLUENCE MECHANISM OF SOCIAL MEDIA ON CONSUMERS' GREEN PURCHASING BEHAVIOR OF AIR CONDITIONERS" Your responses will provide us with valuable data support and help us gain a deeper understanding of the role of social media in promoting green consumption. 非常感谢您抽出宝贵的时间参与本次问卷调查。我们正在进行一项关于“社交媒体对消费者购买绿色空调行为的影响机制”的博士论文研究。您的回答将为我们提供宝贵的数据支持，有助于我们更深入地了解社交媒体在促进绿色消费方面的作用。

This questionnaire aims to collect information about your habits on social media using, your awareness of green air conditioners, and your purchasing decisions. The questions in the questionnaire involve your personal opinions and experiences, and your responses will be kept strictly confidential and only used for academic research purposes. 本次问卷旨在收集您对社交媒体使用习惯、对绿色空调的认知以及购买决策等方面的信息。问卷中的问题涉及您的个人看法和经历，您的回答将被严格保密，并仅用于学术研究目的。

Screening Question:

1. Are you aware of the availability of environmentally friendly or "green" air conditioner models? (您是否知道有环保或“绿色”空调型号的存在?)

() Yes 是 () No (stop doing the questionnaire) 不 (停止作答)

2. If yes, have you ever considered purchasing a green air conditioner (an environmentally friendly model)? (如果是，您是否考虑过购买绿色空调(即环保型号)?)

() Yes 是 () No (stop doing the questionnaire) 不 (停止作答)

Part 1 Characteristics of Respondents (受访者特征)

Note: Please mark \surd into () in the multiple-choice (请在多选题中的括号 () 内打勾 \surd)

1. Gender (性别)

() Male 男 () Female 女

2. Age (年龄)

- () Generation Z (Born between 1995 and 2010)
() Generation Y (Born between 1981 and 1994)
() Generation X (Born before 1980)

3. Education (教育程度)

- () Below bachelor's degree (本科以下学历) () Bachelor's degree (本科学历)
() Master's Degree (硕士学历) () Doctoral Degree (博士学历)

4. Monthly Income (CNY) (月收入)

- () Less than 3,500
() 3501 — 10,000

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() Over 10,000(超过 10000)

5. Occupation (职业)

- () Student (学生) () Personal Business (个体经营者)
 () Sales and Retail (销售员) () Healthcare and Medicine (医疗卫生与医药)
 () Finance and Accounting (财务)() Marketing, Advertising, and PR (市场营销)
 () General administration (综合行政管理)() Unemployed (待业者)
 () Others (Please specify) _____ (其他, 请填写)

6. Which part of China do you live or work in? 你生活或工作在中国的那个区域?

- () North China (Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia Autonomous Region)
 () Northeast China (Liaoning, Jilin, Heilongjiang)
 () Northwest China (Shaanxi, Gansu, Qinghai, Ningxia, Xinjiang)
 () East China (Shandong, Jiangsu, Anhui, Zhejiang, Fujian, Shanghai)
 () South China (Guangdong, Guangxi, Hainan)
 () Southwest China (Chongqing, Sichuan, Guizhou, Yunnan, Xizang)

Part2 Habits of using social media (社交媒体的使用习惯)

7. Which social media platforms do you use most frequently? (Select all that apply) 您最常使用哪些社交媒体平台? (多选)

- () Wechat 微信 () Weibo 微博
 () Douyin 抖音 () Others (Please specify) _____ 其他 (请填写)

8. How long do you spend using social media every day? 每天使用社交媒体的时间多久?

- () Less than 1 hour 少于 1 小时 () 1-3 hours 1-3 小时
 () 4-6 hours 4-6 小时 () Over 6 hours 超过 6 小时

9. What are your main purposes of using social media? (Multiple choice) 您使用社交媒体的主要目的是什么? (多选)

- () Social interaction (such as chatting) 社交互动, 聊天
 () Sharing life experiences 分享生活体验
 () Obtaining news and information 获取资讯和信息
 () Entertainment and recreation (such as watching videos, playing games) 娱乐和消遣
 (如观看视频, 玩游戏)
 () Learning new knowledge or skills 学习新知识或技能
 () Others (Please specify) _____ 其他 (请填写)

Part3 Knowledge about green air conditioner 关于绿色空调知识

10. Do you understand the energy efficiency ratings or related certification standards of green air conditioners? 您是否了解绿色空调的能效等级或相关认证标准?

- () Very well-informed 非常了解 () Slightly informed 略有了解
 () Not very informed 不太了解 () Completely uninformed 完全不了解

11. What factors will influence your decision to purchase a green air conditioner? (Select all that apply) 您认为哪些因素会影响您购买绿色空调的决策? (多选)

- () Price 价格 () Brand reputation 品牌信誉
 () Energy efficiency rating 能效等级 () After-sales service 售后服务
 () Recommendation from friends 朋友推荐 () Other 其他

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12. What advantages do you think green air conditioners have compared to traditional air conditioners? (Select all that apply) 您认为绿色空调相比传统空调有哪些优势? (多选)

- () Higher energy efficiency, more energy-saving 能效更高, 更节能
- () Eco-friendly materials, reducing pollution 环保材料, 减少污染
- () Air purification function 具有空气净化功能
- () Lower noise, more comfortable to use 噪音更低, 使用更舒适
- () Easier to maintain, longer lifespan 更容易维护, 寿命更长

Part 4 Level of Each Variables

Please mark \checkmark in to () that you most agree with.

Variable	Opinion				
	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
	(5)	(4)	(3)	(2)	(1)
1 Social media 社交媒体					
1.1 Frequency of social media use 社交媒体使用频率					
1) I use social media platforms regularly to connect with friends and family. 我经常使用社交媒体与家人和朋友联系					
2) I often search about green air conditioners on social media platforms 我经常在社交平台搜索关于绿色空调的信息					
3) I often engage with content (e.g., posts, videos, photos) shared by others on social media. 我经常参与社交媒体上的互动 (如帖子、视频、照片)					
1.2 Degree of trust in social media 社交媒体信任程度					
4) I trust the information shared by others on social media platforms. 我相信社交媒体平台上的别人分享的信息					
5) I perceive social media is an important channel to get information about green air conditioning 我认为社交媒体是了解绿色空调购买的重要信息渠道					
6) The recommendations or reviews of green air conditioners on social media have influenced my purchasing decisions 社交媒体上的推荐或者评论会影响我的购买决策					
2 Behavioral Attitude 行为态度					
2.1 Perceived Importance of Green Purchasing 绿色购买感知重要性					

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Variable	Opinion				
	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
	(5)	(4)	(3)	(2)	(1)
7) I believe that engaging in green consumption is important for preserving the environment. 我认为从事绿色消费对环境可持续发展很重要					
8) My motivation is to purchase environmentally friendly air conditioners. 我的动机是购买绿色空调					
9) It is important for me to support companies that prioritize sustainability and environmental protection. 对我来说, 支持那些优先考虑可持续发展和环境保护的公司是很重要的。					
2.2 Perceived Benefits of Green Purchases 感知绿色购买的好处					
10) I consider the environmental impact of my purchasing decisions. 我会考虑我的购买决定对环境的影响					
11) My attitude towards products labeled as environmentally friendly is favorable. 我对标有环保标签的产品持赞成态度					
12) I think green air conditioning, although the initial investment is high, can save energy costs in the long run 我认为绿色空调虽然初期投资较高, 但长期来看能够节省能源费用					
3.Perceptual Behavior Control 知觉行为控制					
3.1 Information acquisition and understanding 信息获取与理解					
13) I can easily access information about green air conditioning 我能够轻松获取关于绿色空调的信息					
14) I feel confident in my ability to make environmentally friendly purchasing decisions. 我自己做出环保采购决定的能力很有信心					
15) I am able to compare different brands and models of green air conditioners to make an informed choice 我能够比较不同品牌和型号的绿色空调, 以做出明智的选择					
3.2 Economic capacity and resource 经济能力与资源					
16) I believe that purchasing a green air conditioner is within my financial means. 我认为购买绿色空调在我的经济承受范围之内。					

Variable	Opinion				
	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
	(5)	(4)	(3)	(2)	(1)
17) I am confident in my ability to choose eco-friendly products over non-environmentally friendly alternatives. 我相信我有能力选择环保产品而不是非环保产品。					
18) I can afford the operation and maintenance costs of green air conditioning 我能够负担得起绿色空调的运行和维护成本。					
3.3 Self-efficacy dimension 自我效能维度					
19) I believe that I can influence environmental outcomes through consumer behavior. 我相信我可以通过消费行为来影响环境的结果					
20) I believe I can make the right purchase decision and choose the right green air conditioner for me 我相信自己能够做出正确的购买决策, 选择适合自己的绿色空调					
21) I believe that I have been able to control over environmental impact through purchasing choices. 我认为我通过购买选择已经能够控制对环境的影响					
4. Subjective Norm 主观规范					
4.1 Family and friends influence 家庭与朋友影响					
22) My family thinks I should buy green air conditioner 我的家人认为我应该购买绿色空调					
23) My friends and acquaintances recommended that I buy a green air conditioner 我的朋友和熟人推荐我购买绿色空调					
24) I feel much pressure from friends and family to make environmentally friendly purchasing choices. 感到来自朋友和家人的很大压力, 要求我做出环保的购买选择。					
4.2 Social opinion and expectation 社会舆论与期望					
25) People important to me believe it is important to make environmentally friendly purchasing decisions. 对我来说重要的人认为做出环保购买决定很重要					
26) I feel obligated to consider environmental factors when making purchasing decisions based on the opinions of others. 在根据别人的意见做出购买决定时, 我觉得有义务考虑环境因素。					
27) I am influenced by experts or opinion leaders that buying green air conditioners is in line with the current trend of					

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Variable	Opinion				
	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
	(5)	(4)	(3)	(2)	(1)
social environmental protection 我受到行业内专家的影响认为购买绿色空调是符合当前社会环保趋势的					
4.3 Group belonging and identity 群体归属感与认同维度					
28) I wanted to get in line with the environmental community by buying green air conditioners 我希望通过购买绿色空调来与环保群体保持一致					
29) It is important for me to align my purchasing choices with the environmental values of my social circle. 让我的购买选择与我社交圈的环境价值观保持一致是重要					
30) I think the environmental views of my peers influence my own purchasing decisions. 我认为同龄人对环境的看法影响了我自己的购买决定					
5. Behavioral Intention 行为意向					
5.1 Purchase intention 购买意愿					
31) I intend to make environmentally friendly purchasing decisions in the future. 我打算在未来做出环保的购买决定。					
32) I am likely to actively seek out environmentally friendly products when making future purchasing decisions. 在未来的购买决策中，我可能会积极寻找环保产品。					
33) I plan to incorporate environmental considerations into your future purchasing behaviors. 我打算把环境因素纳入你未来的购买行为中。					
5.2 Recommendation intention 推荐意愿					
34) I would like to recommend buying green air conditioners to my family and friends through social media 我愿意通过社交媒体向家人和朋友推荐购买绿色空调					
35) I will share my experience and feelings about buying green air conditioners on social media 我会在社交媒体上分享我购买绿色空调的经历和感受					
36) I think green air conditioning is an environmentally friendly product worth showing to others 我认为绿色空调是值得向他人展示的环保产品					
5.3 Environmental action intention 环保行动意愿					

Variable	Opinion				
	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
	(5)	(4)	(3)	(2)	(1)
37) I am committed to consistently choosing environmentally friendly options in future purchases. 我承诺在未来的购买中始终如一地选择环保的选项。					
38) I would like to support the cause of environmental protection by buying green air conditioners 我愿意通过购买绿色空调来支持环保事业					
39) I think buying a green air conditioner is one way I can contribute to the environment. 我认为购买绿色空调是我为环保做出贡献的一种方式。					
6.Price perception 价格感知					
6.1 Price sensitivity 价格敏感度维度					
40) I believe that environmentally friendly products are generally priced higher than non-environmentally friendly alternatives. 我认为环保产品的价格通常高于非环保替代品					
41) The perceived price of environmentally friendly products influences my purchasing decisions. 环保产品的感知价格影响我的购买决定					
42) I consider the price of environmentally friendly products when making purchasing decisions. 我在做出购买决定时会考虑环保产品的价格。					
6.2 Price Elasticity and Payment Willingness 价格弹性与支付意愿维度					
43) I am willing to pay a premium for environmentally friendly products compared to non-environmentally friendly alternatives. 我愿意为环保产品支付比非环保产品更高的价格					
44) I perceive the affordability of environmentally friendly products compared to non-environmentally friendly alternatives. 我认为环保产品的价格相对于非环保产品来说是比较合理的					
45) I am willing to pay a reasonable price for a green air conditioner, even if it is more expensive than other air conditioners 愿意为绿色空调支付合理的价格，即使它比其他空调更昂贵					
7.Green Purchasing Behavior 绿色购买行为					
7.1Purchase intention and decision 购买意愿与决策					

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Variable	Opinion				
	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
	(5)	(4)	(3)	(2)	(1)
46) I often intentionally choose environmentally friendly air conditioners over conventional alternatives. 我经常选择环保型空调, 而不是传统的替代品					
47) I consider environmental factors when making purchasing decisions of air conditioners. 当我做购买决策时我会考虑环保因素					
48) I often actively seek out information about the environmental credentials of a product, such as its energy efficiency or eco-friendly features, before purchasing air conditioners. 在购买空调之前我经常收集关于绿色环保的知识					
49) The environmental label will influence my choice of air conditioning products. 环保标签会影响我对空调产品的选择					
7.2 Buying frequency and loyalty 购买频率与忠诚度					
50) I have bought many green air conditioning products in the past period of time 我在过去一段时间内购买了多次绿色空调产品					
51) I tend to keep buying air conditioner brands with environmental certification 我倾向于继续购买具有环保认证的空调品牌					
52) I have a long-term loyalty to buying green air conditioning products 我对购买绿色空调产品保持长期忠诚					

Part 5 Other 其他建议

Suggestion

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