

Study on the Intention and Behavior Gap in Green Consumption based on Social Cognitive Theory

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Abstract

The primary objective of this study aims to explore the key factors influencing consumers' green consumption behavior using a social cognitive theory model. Specifically, this study examines how three core variables-social norms, self-efficacy, and outcome expectations-influence consumers' green purchase intentions. This study collected data from 404 Chinese consumers using a questionnaire survey. Quantitative research methods using the R programming language were used for data processing and analysis. Multiple regression analysis was employed to test the hypotheses and analyze the relationships between the variables. The results indicate that social norms, self-efficacy, and outcome expectations significantly influence consumers' green purchase intentions.

Keywords

Social Cognitive Theory (SCT); Green Consumption Behavior (GCB); Consumption Intention; Consumption Behavior.

1. Introduction

In today's society, the concept of green consumption and advocacy of a green lifestyle have become key approaches to promoting high-quality economic development. Relevant studies have shown that the promotion of green products and services can positively impact the environment, provided that consumers' purchasing behavior, attitudes, and willingness to use green products and services change (Orellano et al., 2020) [1]. In January 2022, seven ministries and commissions, including the National Development and Reform Commission and the Ministry of Industry and Information Technology of China, issued an Implementation Plan for Promoting Green Consumption (Zhang, 2021) [2]. Against this background, scholars at home and abroad have begun to explore the relationship between consumer behavior and environmental protection.

Previous studies have mostly focused on the planned behavior theory model to explain the factors that affect consumers' green purchase intentions (GPI). Planned behavior theory states that an individual's behavioral intention is influenced by factors such as attitude, subjective norms, and perceived behavioral control (Rozenkowska, 2023) [3]. However, this theory primarily focuses on the impact of internal cognitive factors on behavioral intention, while research on external influencing factors is relatively scarce. Lin and Hsu (2013) pointed out that social cognitive theory (SCT) posits that individual behavior is the result of the interaction between the external environment and the individual's internal cognition [4]. Self-efficacy and outcome expectations are key concepts within internal cognition, whereas social norms are considered external factors. Individual behavior is driven by the interaction between internal and external factors.

Another issue worthy of attention is the "intention-behavior gap" in green consumption behavior (GCB) research. This refers to the phenomenon in which consumers' GCB research

reveals strong GPI, but actual purchases of green products differ from intentions (Nguyen et al., 2018) [5]. Therefore, this study aims to answer the following questions:

Question 1: Do environmental, personal, and behavioral factors in SCT have significant effects on consumers' GPI?

Question 2: Do consumers' GPI significantly affect their actual GCB?

Based on SCT, this study explores the internal and external factors that influence individual GPI, further expanding the application of SCT to GCB. The findings not only enrich the application of SCT in the field of green consumption but also provide practical guidance for businesses to develop more effective green marketing strategies and for governments to promote green consumption policies, thereby promoting sustainable social development.

2. Literature Review and Hypothesis

Social cognitive theory (SCT), proposed by psychologist Bandura (1991), emphasizes how individuals acquire knowledge, form attitudes, and develop behaviors by observing, imitating, and learning from others' behavior [6]. SCT posits dynamic interactions between individuals, their environments, and their behaviors. Based on this theory, this study of the antecedents of consumer's GPI consists of three parts. First, at the individual level, SCT emphasizes the role of outcome expectations. Outcome expectations refer to individuals' beliefs about the possibility of positive outcomes from GCB before engaging in them (Petosa et al., 2005) [7]. Second, at the environmental level, SCT emphasizes the role of social norms. Social norms are rules and standards understood by group members that guide or constrain people's social behavior without legal force (D'Arco et al., 2023) [8]. Finally, at the behavioral level, SCT places particular emphasis on self-efficacy, which refers to an individual's belief in their ability to complete a task (Lin & Hsu, 2013) [4]. In GCB, consumers' self-efficacy can reflect their mindset, meaning that consumers have the potential or ability to identify and purchase green products.

2.1. Social Norms

Social norms refer to the behavioral standards and expectations that are widely accepted and followed in a particular society or group. These norms have a significant impact on individual behaviors (Safiullin et al., 2022) [9]. According to SCT, social norms are generally categorized as descriptive and injunctive (D'Arco et al., 2023) [8]. Social norms influence consumers' GPI through various channels. First, the government and environmental NGOs promote environmental awareness and encourage public participation in green consumption, thereby fostering a widely accepted standard of behavior within society. Second, close friends and family, as consumers' most direct social circles, have a profound influence on their GPI through their opinions and behaviors.

In summary, social norms play a significant role in green consumption. Through government advocacy, support from close social circles, and group identity, social norms are a crucial force driving green consumption. The influence of social norms is particularly pronounced in collectivist cultures, such as China. Therefore, we propose the following hypothesis:

H1: Social norms significantly impact consumers' GPI.

2.2. Self-efficacy

SCT states that self-efficacy refers to an individual's belief in their ability to successfully complete a task or behavior in a specific situation, emphasizing confidence in their abilities (Bandura, 1986) [10]. Self-efficacy is closely related to consumer purchasing decisions, determining whether consumers will choose green consumption, how much effort they will invest in it, and how long these efforts will last (Lin & Hsu, 2013) [4]. In research on sustainable consumer behavior, self-efficacy specifically refers to an individual's expectations and beliefs

about their ability to solve specific problems through purchasing behaviors (Berki-Kiss & Menrad, 2022) [11]. Berki-Kiss's research indicates that when consumers believe they can positively impact the environment by choosing green products, or when they are confident in their ability to make environmentally friendly choices, they are more likely to express a strong willingness to purchase green products [11].

In summary, self-efficacy plays a significant role in shaping consumers' GPI. Strong confidence in their abilities enables consumers to overcome various internal and external barriers, thereby strengthening their GPI. This leads to the second hypothesis of this study:

H2: Self-efficacy significantly impacts consumers' GPI.

2.3. Outcome Expectations

Outcome expectations refer to an individual's belief in the possible consequences of a behavior. In SCT, outcome expectations are considered a key factor influencing individual behavior, particularly when deciding whether to participate in an activity (Petosa et al., 2005) [7]. Specifically, in the field of GCB, outcome expectations are considered consumers' beliefs about the positive consequences of purchasing green products. This positive expectation not only influences consumers' purchase intentions but also determines whether they will purchase green products (Susanty et al., 2021) [12].

In summary, individual outcome expectations are a belief in the positive consequences of individual behavior and a judgment made before an individual acts. The higher an individual's expectations of the outcomes of GCB, the greater their GPI. This leads to the third hypothesis of this study:

H3: Individual outcome expectations significantly impact consumers' GPI.

2.4. GPI and GCB

GPI refers to consumers' willingness to purchase green products in the future based on environmental considerations (Chan, 2001) [13]. Akhtar et al. (2021) stated that GPI is a factor that influences consumers before they make a purchase, not their actual purchase behavior [14]. GCB refers to consumers prioritizing products with minimal environmental impact or eco-friendly features when purchasing and using products (Asif Iqbal et al., 2023) [15]. This behavior manifests itself in many ways, including choosing products with environmental certifications or labels, purchasing products with organic or sustainable packaging, and reducing the use of single-use plastics in favor of reusable or biodegradable alternatives (Duong, 2023; Wang & Tou, 2021) [16-17].

In summary, while consumers' environmental attitudes and purchasing intentions significantly drive GCB, a gap remains between intentions and actual behavior. Although consumers' GPI do not equate to actual GCB, they are nonetheless a significant factor influencing actual consumption behavior. This leads to the fourth hypothesis of this study:

H4: Consumers' GPI significantly influence actual GCB.

3. Research Methods

3.1. Sample and Data Collection

This study focused on Chinese consumers and used a questionnaire survey. After the questionnaire was designed, it was created and distributed using Wenjuanxing (WJX), a free online survey platform in China. Before the official release, we conducted preliminary tests on the number of questions, question set, and response time. To ensure the validity and applicability of the questionnaire, we randomly selected five Chinese students on campus to complete the questionnaire face-to-face. Teijlingen and Hundley (2001) found that testing five

users typically uncovers most common issues [18]. After they completed the questionnaire, we added and removed questions based on their feedback and adjusted the question wording.

After these revisions were completed, the questionnaire was officially administered. Data collection lasted 20 days, during which we collected 404 responses (excluding the five test questionnaires).

Table 1 lists the respondents’ demographic data. Males accounted for 54.70% (221 participants) of the sample, whereas females accounted for 45.30% (183 participants). This indicates a relatively balanced sex distribution. Age statistics showed a mean age of 2.34 years with a standard deviation of 0.69. Considering the coding of the age variable, it can be inferred that the sample’s age range was primarily between 20 and 60 years, with a higher proportion of participants aged 41-60. In terms of monthly income, the survey results indicate that many respondents, representing 61.39% (248 individuals) of the total sample, earned between 5,000 and 10,000 RMB. Regarding educational attainment, many respondents (61.39%, 248 individuals) possessed a bachelor’s degree, indicating that most of the sample possessed a relatively high level of education. Overall, this survey encompassed a relatively diverse sample, and the descriptive statistics for demographic variables provided foundational data for subsequent analyses.

Table 1. Descriptive analysis

Variable	Descriptive Statistics
Gender	Male :221 (54.70%)
	Female: 183(45.30%)
Age	Mean: 2.34
	St. Deviation: 0.69
Monthly Salary (RMB)	Under ¥5000: 104(25.74%)
	¥5000 ~ ¥10000: 248(61.39%)
	¥10001 ~ ¥15000: 38(9.41%)
	more than ¥15000: 14(3.47%)
Education Level	Below bachelor’s degree: 126(31.19%)
	Bachelor’s degree: 248(61.39%)
	Master’s degree: 22(5.45%)
	Doctoral degree: 8(1.98%)

Source: Author (s) work.

3.2. Data Analysis Methods

This study employed a quantitative research method and collected data through a questionnaire survey. The data were then analyzed using R language software to test the hypotheses and delve deeper into the factors influencing GCB. First, a descriptive analysis was conducted to understand the basic characteristics of the sample, including demographic information such as gender, age, monthly income, and education. By calculating values such as the mean, standard deviation, frequency distribution, and percentages, we were able to understand the basic distribution of the sample, ensuring its representativeness and providing a clear understanding of the overall data structure, providing a foundation for further analysis. Next, we conducted reliability and validity analyses on the data. To ensure the reliability and

validity of the questionnaire, we used Cronbach’s alpha to assess the internal consistency of each scale. Furthermore, we conducted exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to examine the construct validity of the scale. Through these analyses, we were able to confirm the consistency and validity of each scale in measuring the concepts.

Following the reliability and validity analyses, we conducted correlation and multivariate regression analyses. Correlation analysis was used to explore the correlations between variables and calculate the Pearson correlation coefficient to determine the strength and direction of the correlations. Next, we used multivariate regression analysis to examine the impact of social norms, self-efficacy, and outcome expectations on GPI, as well as the impact of GPI on GCB.

4. Results Analysis

4.1. Reliability and Validity Analysis

The results in Table 2 show that the Cronbach’s alpha coefficients for each scale ranged from 0.82 to 0.88, indicating that the questionnaire had high internal consistency and could effectively measure the relevant constructs. Specifically, the Cronbach’s alpha coefficients for the Social Norms Scale (SN) were 0.84, the Self-Efficacy Scale (SE) were 0.88, the Outcome Expectations Scale (OE) were 0.83, the GPI were 0.84, and the GCB were 0.87.

Table 2. Reliability and validity analysis

Scale	Cronbach’s Alpha	Average Inter-Item Correlation	Factor Loadings Range	Model Fit (CFI/SRMR)
SN	0.84	0.63	0.33-0.52	0.999/0.017
SE	0.88	0.64	0.31-0.52	
OE	0.83	0.61	0.34-0.44	
GPI	0.84	0.63	0.39-0.48	
GCB	0.87	0.63	0.30-0.88	

Source: Author (s) work. Note: *SN = Societal Norms, SE = Self-efficacy, OE = Outcome Expectations, GPI = Green Purchase Interaction, GCB = Green Consumer Behavior.

EFA and CFA extracted three main factors, which explained 66% of the total variance. This indicates that the questionnaire items effectively loaded onto the intended latent constructs, and the factor loadings were within reasonable ranges, supporting the variable classification in the theoretical model. In summary, the reliability and validity analysis results of this study demonstrate that the scale used has good reliability and validity in measuring constructs related to GCB. This provided a solid foundation for subsequent statistical analyses and hypothesis testing.

4.2. Hypothesis Testing and Regression Analysis

As shown in the correlation analysis in Table 3, this study conducted a correlation analysis of SN, SE, OE, GPI, and GCB. The results showed that the correlation coefficients between the core variables were high, all showing significant positive correlations ($P < 0.01$), indicating close interaction between these factors. First, the correlation coefficients between SN, SE, and OE were 0.877 and 0.840, respectively, indicating that SN not only play an important role in promoting consumers’ GPI but also have a significant positive correlation with individuals’ SE and expectations of green consumption results. This means that when consumers experience strong social pressure (such as support from family, friends, and the government) and are confident in the effectiveness of their behavior, they tend to have higher expectations for the outcomes of green purchases, which in turn influences their purchase intentions. Second, the

correlation coefficient between GPI and GCB was 0.875, indicating that consumer intentions can be effectively translated into actual actions.

Table 3. Correlation analysis

	Gender	Age	Monthly income	Education	SN	SE	OE	GPI	GCB
Gender	1	0.007	0.0045	0.101	-0.007	0.013	0.020	0.001	0.017
Age		1	-.208	-.029	-.099	-.086	-.097	-.131	-.080
Monthly income			1	0.072	-0.029	-0.013	-0.024	0.010	0.019
Education				1	-0.053	-0.030	-0.032	-0.054	-0.019
SN					1	0.877	0.840	0.864	0.864
SE						1	0.853	0.865	0.879
OE							1	0.839	0.850
GPI								1	0.875
GCB									1

Source: Author (s) work. Note: *SN=Socail Norms, SE=Self-efficacy, OE=Outcome Expectations, GPI=Green purchase intertion, GCB=Green Consumer behavior, ECSR=Environmental corpoptate social responsibility. *p<0.01

Despite significant correlations between core variables, the impact of demographic variables on GCB in this study differed from previous research. Akhtar et al. (2021) and Mehraj et al. (2023) demonstrated that demographic variables significantly influence GCB, with gender, age, income, and education level being particularly important predictors of green consumption [14, 19]. Therefore, the discrepancy between this study’s findings and those of previous studies may be related to differences in sample composition, data collection timing, or cultural background. Future research should further explore the complex relationship between demographic factors and GCB.

4.3. Multiple Regression Analysis

First, a multivariate regression model was established to investigate H1, H2, and H3, namely, the impact of SN, SE, and OE on GPI. The regression results showed SN, SE, and OE had significant positive effects on GPI. As shown in Table 4, the regression coefficient for SN was 0.355 (p < 0.001), indicating that SN significantly impacted GPI. The regression coefficient for SE was 0.350 (p < 0.001), indicating that consumers’ confidence in their behavioral abilities significantly influenced their GPI. The regression coefficient for OE was 0.258 (p < 0.001), indicating that consumers’ expectations of green consumption outcomes significantly increased their GPI. These results suggest that SN, SE, and OE play significant roles in driving consumers’ GPI, thereby validating H1, H2, and H3.

Table 4. Hypothesis test

Hypothesis	Relationship	Coefficient	Std.Error	R ²	Effect/Decision
H1	SN GPI	0.355	0.048	0.812	Positive/Supported
H2	SE GPI	0.35	0.052		Positive/ Supported
H3	OE GPI	0.258	0.046		Positive/ Supported
H4	GPI GCB	0.837	0.023	0.765	Positive/ Supported

Source: Author (s) work. Note: *SN=Socail Norms, SE=Self-efficacy, OE=Outcome Expectations, GPI=Green purchase intertion, GCB=Green Consumer behavior, ECSR=Environmental corpoptate social responsibility.

Second, to address H4, this study used a regression model to examine the impact of GPI on GCB. The regression analysis results showed that GPI significantly and positively impacted GCB, with a regression coefficient of 0.837 ($p < 0.001$). This result shows that when consumers have a stronger intention to purchase green products, they are more likely to adopt actual GCB, thus verifying H4.

5. Results and Discussion

5.1. Research Findings

This study aimed to explore the key factors influencing GPI and behaviors using a SCT model and analyze the moderating role of environmental corporate social responsibility (ECSR) in the relationship between GPI and actual GCB. The results confirmed the significant influence of social norms, self-efficacy, and outcome expectations on consumers' GPI. Social norms, as external pressures, effectively foster strong GPI among consumers, while self-efficacy and outcome expectations, as individual cognitive factors, further enhance consumers' GPI.

The study found that after consumers develop a strong GPI, they are more likely to convert this intention into actual GCB. This finding is consistent with the existing literature and further confirms the core role of consumption intention in the consumer decision-making process.

5.2. Study Limitations and Suggestions for Future Research

While this study yielded important findings on the mechanisms driving GPI and behaviors, several limitations remain that future research could explore further. First, there were limitations to the research sample. First, the sample primarily came from China, which may not fully reflect the green consumption behaviors of consumers in other countries or cultural contexts. Cultural differences may play a key role in the relationship between GPI and behaviors of consumers. Therefore, future research should expand the diversity of the sample, including consumers from diverse nationalities, cultures, and socioeconomic backgrounds, to enhance the study's external validity. Second, there are limitations to cross-sectional data. This study used cross-sectional data, which revealed correlations between variables but could not determine causal relationships.

Future research could adopt a longitudinal design to track changes in consumers' GPI and behaviors, further validating the causal relationship between intentions and behaviors. Using longitudinal data, researchers can better capture the formation process of GPI and their long-term impact on actual GCB. Second, there were limitations to the variable selection. Although this study incorporated variables such as social norms, self-efficacy, and outcome expectations, other factors that may influence GCB were not included in the model. For example, consumers' personal values, environmental knowledge, and perceived social pressure may also significantly impact GPI and consumption behaviors. Future research could further expand the model to include more potential variables to fully reveal the complexity of GCB.

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