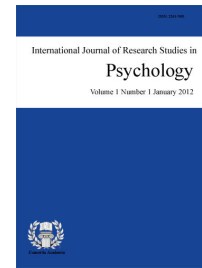


# Consumer psychological cognition, consumer social norms and consumer empathy: Basis for green consumption behavior framework

Cao, Xiangye ✉

Graduate School, Lyceum of the Philippines University - Batangas, Philippines



ISSN: 2243-7681  
Online ISSN: 2243-769X

Received: 30 August 2024

Revised: 20 September 2024

Accepted: 22 September 2024

OPEN ACCESS

Available Online: 22 September 2024

DOI: 10.5861/ijrsp.2024.034

## Abstract

With the development of society and economy, environmental problems have become increasingly serious. The reduction of biodiversity, frequent haze weather, decreased forest area, and climate deterioration are partly due to people's non-green consumption behavior. Green consumption behavior covers the entire process of consumer consumption and use of goods, including a series of consumption decision-making behaviors that reduce resource depletion and environmental pollution, and minimize negative impacts on the environment. It has the characteristics of moderation and moderate consumption, environmental protection, and minimal ecological impact. It is a consumption method that is conducive to sustainable social development and has gradually become an important research topic in the field of behavior. This article adopts descriptive research methods and questionnaire surveys as the sources of data collection. Statistical analysis is conducted using regression analysis. According to the survey, consumer psychological cognition, social norms, and consumer empathy are closely related to green consumption behavior. When consumer psychological cognition improves, there is a significant relationship between social and cultural cognition, environmental knowledge cognition, and ecological values cognition and consumer psychological cognition. The higher the consumer's psychological cognition, the more positive their green consumption behavior will be. When enhancing social norms, there is a significant relationship between social learning, social influence, social atmosphere, and consumer social norms. The stronger the social norms, the more proactive consumers' green consumption behavior will be. When consumer empathy is enhanced, there is a significant relationship between cognitive empathy, emotional empathy, and value empathy and consumer empathy. The higher the level of empathy among consumers, the more proactive green consumption behavior will be. Finally, a system framework for managing green consumption behavior was proposed, and suggestions were made to enhance green consumption behavior.

**Keywords:** consumer psychological cognition, social norms, consumer empathy, green consumption behavior

## **Consumer psychological cognition, consumer social norms and consumer empathy: Basis for green consumption behavior framework**

### **1. Introduction**

The vigorous development of industrialization has promoted economic development. Against the backdrop of rapid accumulation of material wealth, society has developed values of excessive consumption and hedonism. The large-scale centralized production and consumption of lifestyle have caused serious damage to the natural environment, and problems such as excessive resource consumption and environmental pollution are becoming increasingly prominent. Developed Western countries have all been plagued by air and water pollution, and it took over 100 years for European countries to complete their governance. The history of environmental pollution and governance in European countries shows that human understanding of nature has gone through a process from ignoring nature to valuing it, which is also a transformation of human environmental values from unscientific to scientific. With the process of industrialization, China's environmental problems have become increasingly prominent. Land desertification, sharp reduction of forest resources, increasingly severe soil erosion, severe damage to biodiversity, and increasingly serious urban environmental pollution. The large accumulation of household waste has reduced the quality of the urban environment. The history of environmental pollution and governance in European countries has provided us with good reference. China can no longer follow the old path of "development first, governance later". China must adhere to green development, change its thinking and approach, and achieve comprehensive, coordinated and sustainable development of harmonious coexistence between humans and nature.

More and more research in academia is paying attention to the environmental damage caused by human behavior. In 1962, American biologist Rachel Carson was the first to study the environmental pollution and ecological damage caused by excessive use of chemicals and fertilizers, which remains a hot research topic to this day. Niu et al. (2019) study suggests that due to the negative externalities of human behavior, individuals often exhibit opportunistic tendencies towards free riding, and shared resources are often overutilized, making it difficult to form effective collective action in environmental governance, leading to the described "collective action dilemma" in environmental governance. Due to the widespread existence of transaction costs, monitoring individual behavior and clearly defining property rights require high costs, which makes it difficult for government regulations and market mechanisms to effectively address environmental issues. John et al. (1993) regarded this public dilemma as a social trap and found it difficult to break it. From the perspective of the harm of individual consumption behavior to the environment, cases of environmental pollution caused by human consumption activities can be seen everywhere, such as the impact of using plastic bags on the environment. From the perspective of resource waste caused by the use of plastic bags, plastic bags are made of petroleum. Although they may not be eye-catching for personal use, from the perspective of regional or national use, regional or national consumption is huge. According to the Plastic Recycling Professional Committee of the China Plastics Association, the daily usage of various plastic bags in China exceeds 2 billion. Due to the huge consumption, serious resource waste has been caused. From the perspective of environmental pollution caused by plastic bags, most of the plastic bags currently available in the market are non degradable. If used as garbage bags, it will seriously harm the environment.

Plastic bags buried underground take about 200 years to rot and seriously pollute the soil; If incineration treatment is adopted, it will produce harmful smoke and toxic gasses, which will pollute the environment for a long time. For example, household appliances that use Freon as a refrigerant pose a threat to the environment. As a refrigerant that has been used for over 100 years, Freon has the advantages of low price, good refrigeration effect, and good safety performance. However, the release of fluorocarbons into the air and exposure to high temperatures or radiation can damage the ozone layer and ecological environment, which is not conducive to

environmental protection. This is also the reason why many countries implement "fluorine ban laws". Because many environmental issues are caused by individual behavior, internationally, individual behavior that has a significant impact on the environment has always been a cutting-edge field and a new frontier in the field of environmental governance.

Green consumption embodies the ideas of energy conservation and environmental protection, and is another significant progress in human society after agricultural and industrial civilization. The environmental problems caused by consumption activities account for more than one-third of all environmental problems, so promoting green consumption has become an important measure to solve environmental problems. Under the prominent environmental contradictions and consumer health demands, green consumption has developed rapidly in China. China has launched green consumption policies covering various aspects of society, mainly including energy-saving and environmentally friendly products, energy-saving and land saving housing, green consumption places, resource recycling and utilization, etc. However, there are still many imperfections, such as the green consumption policy has not yet formed a system, the policy role is not obvious enough, the market based economic policy regulation is not strong, the current green consumption policy mainly relies on fiscal subsidies, the incentive and regulatory effect on consumer behavior is not strong, the participation of market forces is low, and the efficiency of funds is low.

There are still many factors that hinder the implementation of green consumer behavior. The current issue is that individual behavior change is often difficult, and what methods should be taken to change consumer consumption behavior? Why do consumers implement green consumption behavior, that is, what psychology does green consumption behavior belong to? How to promote and guide consumer green consumption behavior, that is, how can green consumption behavior be sustainable? What are the deep-seated psychological attributions of green consumption behavior and how do these psychological attributions affect the mechanism of green consumption behavior? What intervention paths and strategies are used to guide consumers towards green consumption behavior, and how effective and sustainable these intervention paths and strategies are.

**Objectives of the Study** - This study explores the relationship of consumer psychological cognition, social norms, and consumer empathy on green consumption behavior, laying the foundation for establishing a good social ecological environment. Specifically, described consumer psychological cognition from three aspects: social and cultural cognition, environmental knowledge cognition, and ecological values cognition. Described consumer social norms from three aspects: social learning, social influence, and social atmosphere. Described consumer empathy from three aspects: cognitive empathy, emotional empathy, and value empathy.

## 2. Methods

**Research Design** - Researchers use descriptive correlation methods to analyze the relationship between consumer psychological cognition, social norms, consumer empathy, and green consumption behavior. Descriptive research method is a simple and effective research tool that describes and explains phenomena, patterns, and theories to understand the relationships between variables. In this study, researchers gathered information from respondents to understand the interactions among these three domains. This method helps to reveal how consumer psychological cognition and other factors affect green consumption behavior, as well as the possible interactions between them.

**Participants of the Study** - The questionnaire is distributed through the Internet and may cross geographical restrictions. 25 questionnaires were distributed for this pre survey, and approximately 500 survey questionnaires were collected for the formal survey. The research object is green consumption behavior, so most of the respondents are already working people aged 20-62. Therefore, this study has typicality and representativeness.

**Data Gathering Instrument** - According to the research objectives, a predictive study was conducted using Questionnaire Star. A complete questionnaire was constructed through effective methods such as interviews, open-ended questionnaires, and literature review. And the reliability of the questionnaire was tested and verified.

The first part of the survey questionnaire is a brief introduction to the participants, such as age, gender, educational background, occupation, and income. The second part investigates, analyzes, and statistically analyzes consumer psychological cognition, social norms, and consumer empathy, and obtains data through online questionnaire surveys. Questionnaire describes consumers' psychological cognition from the perspectives of social and cultural cognition, environmental knowledge cognition, and ecological values cognition. Describe social norms from the perspectives of social learning, social influence, and social atmosphere, and describe consumer empathy from the perspectives of cognitive empathy, emotional empathy, and value empathy. Describe green consumption behavior from the perspectives of green purchasing behavior, green product usage, and waste disposal. According to the Likert four point scale, the higher the score, the higher the degree of agreement, and the lower the score, the lower the degree of agreement. "4" indicates strong agreement, "3" indicates agreement, "2" indicates disagreement, "1" means strongly disagree.

Reliability testing is required to determine the validity and reliability of the question items. Reliability refers to the stability of results determined by measurement methods and the consistency of data obtained through measurement tools. It has the following characteristics: firstly, reliability specifically refers to the stability (or consistency) presented by the measurement data results, not the scale itself. Therefore, the measurement object of reliability is the data obtained using the measurement tool, not the non measurement tool itself. Secondly, the consistency of reliability data results refers to the consistency in a certain type of context, such as a specific experimental scenario, and the consistency under all conditions. Reliability data will display different data results due to various factors such as time and experimenters. Thirdly, the prerequisite for good validity is good reliability, but good reliability results do not necessarily mean good validity.

The most commonly used coefficient in consumer behavior research is the Cronbach's alpha coefficient. The Cronbach's coefficients are all above 0.7. Among them, the coefficients of social and cultural cognition, environmental knowledge cognition, ecological environment values cognition, social learning, social atmosphere, social influence, consumer cognitive empathy, emotional empathy, value empathy, green purchasing behavior, green product use, and waste disposal are all greater than 0. The conclusion is 'good'. The maximum coefficient is 0.413 and the minimum coefficient is 0.173. The results indicate that the reliability and quality of the research data are very high and can be used for large-scale investigations.

**Data Gathering Procedures** - To obtain more sample data, this study used the paid survey service provided by "Wenjuanxing". This platform is a relatively professional research website with a large number of sample members. It can use design to screen effective samples by identifying items and questions. At the same time, time limits were imposed on the design of the answer sheet (answer sheet time greater than 120 seconds), and IP addresses were set (each address is limited to answering one questionnaire). From May 9th, 2024, to May 15th, 2024, a total of 589 samples were interviewed and simultaneously answered the questionnaire within a one week period. After manually eliminating a total of 89 questionnaires with identical and contradictory answers to multiple consecutive questions, 500 usable questionnaires were obtained with an effective rate of 84.89%.

**Data Analysis** - This study aims to explore the role of consumer psychological cognition, knowledge of social norms, and consumer empathy in green consumption behavior. Different analytical tools were used to statistically analyze the data. Using weighted mean to describe consumer psychological cognition, including social and cultural cognition, environmental knowledge cognition, and ecological values cognition. Describe social norms from three aspects: social learning, social influence, and social atmosphere. Describe consumer empathy from three perspectives: cognitive empathy, emotional empathy, and value empathy. Describe green consumption behavior from the aspects of purchasing green products, using green products, and waste disposal. Using Pearson correlation method to examine the relationship between consumer psychological cognition, social norms, consumer empathy, and green consumption behavior. SPSS 28.0 software was used to analyze and interpret the data results.

**Ethical Consideration** - Ethical considerations have been taken into account during the conduct of this study.

To ensure that the collected information is used for research purposes, only the quality and completeness of the research are guaranteed. When conducting surveys and research, this article takes into account the privacy concerns of the respondents, ensuring that every piece of information collected is only used for research purposes and maintaining the quality and integrity of the study. Respondents should communicate through communication or the internet to ensure that the target can answer necessary questions related to the research in advance. The researchers also ensured the confidentiality of the respondents, collected as little personal information as possible, ensured anonymity, and did not ask for their names when answering the questionnaire. The respondents were also assured that they voluntarily answered the questionnaire, and their safety was the top priority.

### 3. Results and discussion

**Table 1**

*Summary Table on Consumer Psychological Cognition*

Key Result Areas	Composite Mean	VI	Rank
Social and Cultural Cognition	3.47	Agree	3
Environmental Knowledge Cognition	3.50	Strongly Agree	2
Ecological Values Cognition	3.56	Strongly Agree	1
Grand Composite Mean	3.51	Strongly Agree	

*Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree*

Table 1 is a summary of consumer psychological cognition. It explains the relevant indicators of consumer psychological cognition from three aspects: social and cultural cognition, environmental knowledge cognition, and ecological values cognition. The average value of this index is 3.51. The lowest average value is 3.47. The results indicate that these three aspects are appropriate indicators for explaining consumer psychological cognition.

According to the analysis of data in standard 3.4, respondents believe that social and cultural cognition has a significant impact on green consumption behavior. The social and cultural cognition score is 3.56, ranking first. Sociocultural cognition can shape people's consumption habits and behavioral patterns. In some cultures that prioritize environmental protection and sustainable development, green consumption is seen as a reflection of social responsibility and personal culture. In such a cultural atmosphere, people are more likely to accept green consumption and are willing to pay a premium for it. Therefore, social and cultural cognition helps promote consumers to actively practice green consumption behavior. Environmental knowledge cognition is an important factor affecting green consumption, ranking second with a score of 3.50. The level of awareness of environmental knowledge is directly related to consumers' environmental awareness and consumption decisions (Wang et al., 2021). If consumers have strong environmental knowledge, they can identify which behaviors are environmentally friendly and which have a negative impact on the environment. They are more likely to choose green consumption behavior when consuming. In addition, the lack of environmental knowledge may lead consumers to misunderstand green consumption and even doubt its effectiveness. Therefore, through education and publicity, enhancing public awareness of environmental knowledge can help deepen the understanding of the importance of green consumption. Ecological values cognition is the deep driving force behind promoting green consumption, ranking third with a score of 3.47. Ecological values are people's fundamental views on the relationship between humans and nature. It affects the behavioral orientation of individuals and society (Zhou et al., 2019). If consumers agree with the values of ecological priority and sustainable development, they are more likely to consider environmental factors in their consumption decisions and choose green consumption. On the contrary, if consumers excessively pursue personal interests or believe that environmental issues are unrelated to themselves, they may overlook the importance of green consumption. Enhancing consumers' awareness of ecological values is crucial for promoting green consumption.

**Table 2***Summary Table on Consumer Social Norms*

Key Result Areas	Composite Mean	VI	Rank
Social Learning	3.50	Strongly Agree	1
Social Influence	3.48	Agree	2.5
Social Atmosphere	3.48	Agree	2.5
Grand Composite Mean	3.49	Agree	

*Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree*

Table 2 is a summary of consumer social norms. It explains the relevant indicators of consumer social norms from three aspects: social learning, social influence, and social atmosphere. The average value of this index is 3.49, and the lowest average value is 3.48. The results indicate that these three aspects are appropriate indicators for explaining consumer social norms.

According to the analysis of data in section 4.4, respondents believe that social learning has the greatest impact on green consumption behavior, ranking first with a score of 3.50. In the context of green consumption, people often form their own consumption concepts through the consumption patterns of those around them. For example, if a person sees friends, family, or colleagues around them actively choosing green products, especially those that are environmentally friendly, they may be influenced and try to imitate this behavior (Zhang et al., 2023). This kind of imitation not only manifests as the behavior of purchasing green goods, but may also bring deeper thinking and attention to environmental issues. Therefore, social learning promotes green consumption by influencing individuals' attitudes and behavioral choices. Social impact ranks second with a score of 3.48. The social impact of green consumption can come from multiple levels, including family, friends, colleagues, and broader social groups. Research has shown that when people realize that their consumption behavior is influenced by the expectations or evaluations of others, they are more likely to make socially responsible choices, such as choosing environmentally friendly products. In addition, the social image of enterprises and brands also has a significant impact on consumer choices. If a company actively advocates sustainable development and launches green products, consumers often choose the brand due to its positive impact on brand image. Therefore, social influence not only comes from interactions between individuals, but also includes collective consumption behavior driven by factors such as group pressure and social expectations (Morais et al., 2021). The social atmosphere ranks second with a score of 3.48. Social atmosphere reflects the values and behavioral patterns commonly held by a society at a certain moment. A good social atmosphere can create a positive environment and encourage the public to choose green consumption. With the increasing global awareness of environmental protection, more and more countries and regions have formed a social atmosphere advocating sustainable development. In such an atmosphere, green consumption is no longer just a personal choice, but has become a universal consensus in society. People are more susceptible to the influence of their surrounding environment and view green consumption as a fashion and responsibility. Therefore, in a positive social atmosphere, individuals are more likely to actively participate in green consumption and promote overall environmental protection actions in society.

**Table 3***Summary Table on Consumer Empathy*

Key Result Areas	Composite Mean	VI	Rank
Cognitive Empathy	3.43	Agree	3
Emotional Empathy	3.46	Agree	1.5
Value Empathy	3.46	Agree	1.5
Composite Mean	3.45	Agree	

*Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree*

Table 3 is a summary of consumer empathy. It explains the relevant indicators of consumer empathy from three aspects: cognitive empathy, emotional empathy, and value empathy. The average value of this index is 3.45, and the lowest average value is 3.43. The results indicate that these three aspects are appropriate in explaining the relevant indicators of consumer empathy.

According to the analysis of data in standard 5.4, respondents believe that value empathy and emotional empathy have the greatest impact on green consumption behavior, with scores of 3.49 and ranks first. In green consumption, value empathy is the process by which individuals integrate their own values with those of others or society as a whole. When consumers identify with social values related to environmental protection, they are more likely to adopt corresponding consumption behaviors. For example, many people consider sustainable development as an important symbol of social progress and are willing to pay higher prices for green products. If their social circle or collective exhibits a strong environmental awareness, individuals may unconsciously develop value empathy and change their consumption habits to integrate into this common set of values. Emotional empathy is reflected in consumers' emotional responses to environmental issues and their impacts. When individuals see scenes of organisms or humans suffering from environmental pollution living in poor quality environments, they may experience strong emotions such as anger, sadness, or guilt. This emotional response not only prompts attention to relevant issues, but may also lead to changes in consumer behavior. For example, videos about wildlife being injured due to plastic pollution may resonate emotionally with viewers, prompting them to take action, choose environmentally friendly products, and support initiatives to reduce plastic use. Therefore, promoting emotional stories related to environmental protection can effectively stimulate public emotional empathy and encourage their participation in green consumption. The score of cognitive empathy is 3.43 and ranks third. Cognitive empathy can help consumers realize the positive impact of environmental behavior on others and society. When individuals understand that their consumption choices not only affect their own lives, but may also have profound impacts on others and the future environment, they are more likely to adopt green consumption behaviors. For example, understanding the harm of plastic pollution to marine life can encourage consumers to reduce the use of disposable plastic products. This understanding prompts consumers to elevate their choices to the level of caring for others and nature, encouraging them to actively choose more environmentally friendly products.

**Table 4**

*Relationship Between Consumer Psychological Cognition and Consumer Social Norms*

Variables	rho	p-value	Interpretation
<b>Social and Cultural Cognition</b>			
Social Learning	0.241**	< .001	Highly Significant
Social Influence	0.234**	< .001	Highly Significant
Social Atmosphere	0.234**	< .001	Highly Significant
<b>Environmental Knowledge Cognition</b>			
Social Learning	0.280**	< .001	Highly Significant
Social Influence	0.189**	< .001	Highly Significant
Social Atmosphere	0.189**	< .001	Highly Significant
<b>Ecological Values Cognition</b>			
Social Learning	0.241**	< .001	Highly Significant
Social Influence	0.231**	< .001	Highly Significant
Social Atmosphere	0.231**	< .001	Highly Significant

\*\**. Correlation is significant at the 0.01 level*

Table 4 describes the relationship between consumer psychological cognition and social norms. It systematically analyzed the three dimensions of consumer psychological cognition: socio-cultural cognition, environmental knowledge cognition, and ecological value cognition, and their correlation with consumer psychological cognition, with p-values all less than 0.01. This means that there is an important relationship between social norms and consumer psychological cognition. That is, the higher the consumer's psychological cognition, the stronger the social norms, and the more positive the green consumption behavior.

Green consumption behavior is an important means of environmental protection and promoting sustainable development. In this process, consumers' psychological cognition is not only influenced by social norms, but also has a significant impact on social norms in turn. Consumers' environmental awareness, attitudes, and behavior patterns can shape and reshape society's expectations and standards for green consumption.

Firstly, consumers' positive attitudes towards green consumption contribute to the formation of a broader

social norm (Hu et al., 2023). When consumers become aware of the severity of environmental issues such as climate change and excessive resource consumption, they tend to be more inclined to support green consumption. When a group of consumers generally recognize and prefer green products and services, this cognition will gradually penetrate into the mainstream consciousness of society, promoting a shift in social norms towards environmental protection. For example, more and more people are choosing organic food and products made from renewable materials, which has increased society's recognition of these consumption behaviors and formed a positive interactive cycle. Secondly, consumers' psychological cognition is also reflected in their motivation to participate in green consumption.

Secondly, consumers' psychological cognition is also reflected in their motivation to participate in green consumption. According to social identity theory, individuals tend to participate in behaviors that align with their values and beliefs (Ali et al., 2019). When consumers gain positive personal experiences through green consumption, such as psychological satisfaction and a sense of belonging from purchasing environmentally friendly products, they are more willing to share this behavior with others. This approach not only strengthens individuals' environmental awareness, but also influences those around them, gradually changing their consumption behavior and further promoting social recognition and expectations of green consumption.

In addition, the values and lifestyle changes of the new generation of young consumers are also reshaping social norms. They attach great importance to environmental protection and social responsibility. They share the concept and practice of green consumption through social media and other platforms to influence their peers and a wider group. This bottom-up influence prompts society to gradually accept the behavioral standards of green consumption, forming more positive and effective social norms. However, consumers' psychological cognition may also lead to limitations or changes in social norms. When individuals have insufficient understanding or misunderstandings about green consumption, it may lead to non-standard consumption behavior. For example, some consumers may have doubts about the authenticity of certain green products, which may reduce their willingness to consume green products. This confusion and distrust will affect the overall green consumption atmosphere of society. In summary, consumers' psychological cognition plays an important role in green consumption, and through individual cognition, attitudes, and behaviors, it can influence and shape social norms. The interaction between individuals and society is subtle and complex, and only by enhancing consumers' environmental awareness and sense of responsibility can a positive green consumption environment be created. Social norms are evolving towards sustainability.

**Table 5**

*Relationship Between Consumer Psychological Cognition and Consumer Empathy*

Variables	rho	p-value	Interpretation
<b>Social and Cultural Cognition</b>			
Cognitive Empathy	0.301**	< .001	Highly Significant
Emotional Empathy	0.249**	< .001	Highly Significant
Value Empathy	0.201**	< .001	Highly Significant
<b>Environmental Knowledge Cognition</b>			
Cognitive Empathy	0.268**	< .001	Highly Significant
Emotional Empathy	0.308**	< .001	Highly Significant
Value Empathy	0.297**	< .001	Highly Significant
<b>Ecological Values Cognition</b>			
Cognitive Empathy	0.291**	< .001	Highly Significant
Emotional Empathy	0.354**	< .001	Highly Significant
Value Empathy	0.219**	< .001	Highly Significant

\*\* Correlation is significant at the 0.01 level

Table 5 illustrates the relationship between consumer psychological cognition and consumer empathy. It systematically analyzed the correlation between three dimensions of consumer psychological cognition: socio-cultural cognition, environmental knowledge cognition, and ecological values cognition and consumer empathy, and obtained p-values all below the 0.01 level. This means that there is an important relationship between consumer psychological cognition and consumer empathy. That is to say, the higher the consumer's



psychological cognition, the stronger the consumer's empathy, and the more positive the green consumption behavior.

Green consumption is not only related to environmental protection and sustainable development, but also closely related to consumers' psychological cognition and empathy. Empathy is an individual's ability to understand and feel the emotions of others, and in green consumption, empathy can promote consumers' attention and action towards environmental protection and social responsibility (Wang et al., 2023). The impact of consumers' psychological cognition on empathy is reflected in multiple aspects. Firstly, consumers' awareness of environmental issues directly affects their ability to empathize. When consumers understand the impact of climate change, environmental pollution, and ecological destruction on others (including future generations), they are more likely to develop empathy. For example, when individuals realize that plastic pollution not only harms marine life, but also poses a threat to communities that rely on clean water sources, the emotional resonance triggered by this knowledge can drive them to take action, choose biodegradable products or reduce plastic use. This emotional drive helps promote positive green consumption behavior. Secondly, consumers' psychological frameworks can also influence their empathetic responses (Kou, et al. 2019). Studies have shown that when consumers combine environmental issues with their personal and societal values, their emphatic abilities become stronger. If consumers view environmental protection as a social responsibility or moral obligation, they often experience stronger emotional reactions when exposed to information related to environmental protection. For example, when consumers see promotional activities initiated by environmental organizations, they are more willing to share their content, participate in volunteer activities, or choose to support local sustainable brands. This emotional resonance is not only reflected in individual behavior, but also influences others' choices through social networks, forming a certain collective effect. In addition, marketing and promotional strategies also play an important role in stimulating empathy among consumers. If brands can effectively convey stories and emotions related to environmental protection, consumers' psychological cognition will deepen, and their empathy for environmental issues will also be enhanced (Wu et al., 2018). For example, many brands use real-life cases and emotional stories to showcase the impact of their environmental measures. This effective narrative style can touch consumers' emotions, thereby making them aware of the importance of their own consumption behavior and encouraging them to actively choose green products. Therefore, a reasonable way of information dissemination and moderate emotional arousal are very important.

In summary, consumer psychological cognition plays a key role in green consumption by influencing empathy. Enhancing consumers' awareness of the environment, combined with effective communication strategies, can promote their emotional resonance with social and environmental issues, thereby driving more positive green consumption behavior. By guiding consumers' psychological cognition and empathy, not only can it drive individual consumption choices, but it also helps to enhance society's overall attention and action towards sustainable development goals.

Table 6 illustrates the relationship between social norms and consumer empathy. It systematically analyzed the correlation between the three dimensions of consumer psychological cognition and consumer empathy, and obtained p-values all below the 0.01 level. This means that there is an important relationship between social norms and consumer empathy. That is to say, the stronger the social norms, the stronger the consumer empathy, and the more positive the green consumption behavior.

Social norms play an important role in the field of green consumption, and have a profound impact on consumers' empathy and behavioral choices. Social norms refer to widely accepted behavioral standards and values in society, which not only shape individuals' consumption habits but also affect their emotional responses and empathy abilities. Firstly, social norms can increase consumers' awareness of environmental issues. When green consumption becomes the mainstream of society, consumers will feel the expectations and pressure from those around them. This social pressure can trigger empathy among individuals, making them more concerned about environmental issues. For example, when the public generally recognizes low-carbon living, consumers are more likely to be aware of the impact of their choices on the environment, thereby inspiring sympathy for the

environment and the affected population. This empathy not only makes consumers willing to support environmentally friendly products, but also helps to form collective action and promote the overall transformation of society towards green consumption.

**Table 6***Relationship Between Consumer Social Norms and Consumer Empathy*

Variables	rho	p-value	Interpretation
<b>Social Learning</b>			
Cognitive Empathy	0.310**	< .001	Highly Significant
Emotional Empathy	0.224**	< .001	Highly Significant
Value Empathy	0.413**	< .001	Highly Significant
<b>Social Influence</b>			
Cognitive Empathy	0.264**	< .001	Highly Significant
Emotional Empathy	0.271**	< .001	Highly Significant
Value Empathy	0.341**	< .001	Highly Significant
<b>Social Atmosphere</b>			
Cognitive Empathy	0.264**	< .001	Highly Significant
Emotional Empathy	0.271**	< .001	Highly Significant
Value Empathy	0.341**	< .001	Highly Significant

\*\* . Correlation is significant at the 0.01 level

Secondly, social norms promote empathy through the role model effect. When people around actively participate in green consumption, individuals subconsciously crave consistency with others. Attention to the behavior of others can stimulate empathy (Liang et al., 2019), prompting consumers to reflect on the social impact of their own actions. For example, when neighbors, friends, or celebrities choose to use environmentally friendly products and share their experiences, others will feel a sense of social responsibility and be willing to understand and participate in green consumption. This emotional connection is not only reflected in purchasing decisions, but may also drive broader social change. In addition, social norms can also drive the improvement of consumer empathy through education and promotion. Various environmental organizations and public welfare activities help consumers establish empathy for green consumption by spreading the urgency of environmental issues, showcasing the true stories of affected communities and organisms. For example, through the display of environmental protection and environmental content, consumers can understand how ecological destruction directly threatens people's lives and future. This information transmission has formed a social voice, inspiring consumers to actively pay attention to and support green consumption behavior, and promoting the formation of new social norms. Creating a positive and inclusive social environment is crucial for promoting empathy among consumers.

In summary, social norms play an important role in green consumption and can effectively enhance consumers' empathy. By increasing attention to environmental issues, encouraging social participation in environmental education, and promoting social norms, consumers are encouraged to make more responsible choices in green consumption (Kim et al. 2019). Only in such a virtuous cycle can green consumption behavior in society be effectively promoted.

***Propose a Framework for Green Consumption Behavior***

This proposes a framework for green consumption behavior that promotes and encourages every consumer to actively engage in green consumption behavior. Actively advocating green consumption based on social psychological cognition, social norms, and empathy, so that people can feel the benefits that green consumption behavior brings to themselves and society. This is a good way to improve the ecological level of society and promote sustainable development. According to the results, these three variables are statistically correlated, which is also supported by multiple regression. These variables (social psychological cognition, social norms, and consumer empathy) significantly predicted green consumption behavior statistically, with  $F(2498)=289.12$ ,  $p < 0.01$ ,  $r^2 = 0.489$ . All variables have a statistically significant impact on the prediction,  $p < 0.01$ . This indicates that the variables of social psychological cognition, social norms, and consumer empathy have strong

statistically significant correlations. That is to say, the higher the social and cultural awareness, the more willing the respondents are to engage in green consumption behavior. It also has a significant impact on social norms, and the stronger the social norms, the more positive the green consumption behavior. The higher the level of consumer empathy, the more green consumption behavior there will be.

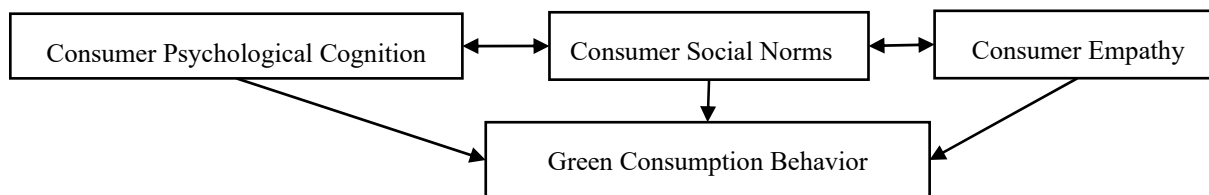


Figure 1. Framework of Green Consumption Integration

From the above figure, it can be seen that social psychological cognition, social norms, and consumer empathy jointly influence green consumption behavior and interweave with each other, forming profound effects. Social psychological cognition reflects people's understanding and values of environmental issues. This cognition determines how individuals perceive the necessity and importance of green consumption. Different cultural backgrounds and social environments can lead to differences in people's acceptance of the concept of sustainable development, thereby affecting their decision-making when it comes to consumption. Social norms, as expectations of individual behavior, play an important role in green consumption behavior. When society generally advocates for environmental protection and sustainable behavior, this norm can drive individuals to make choices that meet social expectations. Consumers are largely influenced by their surroundings and social environment to tend to conform to these norms. Consumer empathy is an individual's understanding of the emotions and situations of others. In terms of environmental protection, when consumers can feel the consequences of environmental issues, they may adopt positive green consumption behaviors. Empathy ability can encourage individuals to focus on overall interests, thereby enhancing their environmental awareness and actions when consuming. In summary, social psychological cognition, social norms, and consumer empathy collectively shape consumers' green consumption behavior. Through a deep understanding of these factors, we can promote the development of sustainable consumption behavior and advance the process of environmental protection in society.

#### 4. Conclusions and recommendations

This study qualitatively and quantitatively analyzed the role of consumer psychological cognition, social norms, and consumer empathy in people's green consumption, and drew the following conclusions: The respondents agreed on the consumer psychological cognition in terms of social and cultural, environmental knowledge, and ecological values cognition; The respondents agreed that social learning, social influence and social atmosphere affect consumer social norms; It was agreed by the respondents that cognitive empathy, emotional empathy and value empathy enhancement affect consumer empathy; There is a highly significant relationship among consumers' psychological cognition, social norms and consumers' empathy; A framework was developed to improve green consumption behavior. The government may improve consumer psychological cognition by strengthening environmental education and publicity, guide consumers to accept social culture, understand environmental knowledge, and establish good ecological values by understanding the seriousness of the ecological crisis. The government may guide consumers' social norms of green consumption, and use social learning to enhance social norms, and use the social impact and social atmosphere to establish good social norms. The government may stimulate consumers' empathy. Combining cognitive empathy to enhance consumer green knowledge, stimulate consumers green emotions through emotion, cultivate the environmental values of consumption through value empathy. Business owners may adopt the framework develop, it offers a comprehensive approach to understanding and influencing green consumption behavior, providing valuable

insights for developing effective strategies. Future researcher may use other variables like the role of perceived consumer effectiveness (PCE) to assess how consumers' beliefs about their ability to impact environmental issues influence their green behavior.

## 5. References

- Ali M, Puah C H, Ali, A, (2019). Green intellectual capital, green HRM and green social identity toward sustainable environment: a new integrated framework for Islamic banks. *International Journal of Manpower*, 43 (3): 614-638.
- Hu X J, Meng H, (2023). Digital literacy and green consumption behavior: Exploring dual psychological mechanisms. *Journal of Consumer Behaviour*, 22 (2): 272-287
- John A. McCarty L J, Shrum, (1993). A structural equation analysis of the relationships of personal values, attitudes and beliefs about recycling, and the recycling of solid waste products[. *Advances in Consumer Research*, (20): 641-647.
- Kim S H, Seock Y K, (2019). The roles of values and social norm on personal norms and pro-environmentally friendly apparel product purchasing behavior: The mediating role of personal norms. *Journal of Retailing and Consumer Services*, (51): 83-90.
- Kou X, Konrath S, Goldstein T R, (2019). The relationship among different types of arts engagement, empathy, and prosocial behavior. *Psychology of Aesthetics Creativity and the Arts*, 14(4): 481-492
- Liang D P, Hou C X, Jo M S, (2019). Pollution avoidance and green purchase: The role of moral emotions. *Journal of Cleaner Production*, (210): 1301-1310.
- Morais L H, Pinto D C, Cruz-Jesus F, (2021). Circular economy engagement: Altruism, status, and cultural orientation as drivers for sustainable consumption. *Sustainable Production and Consumption*, (27): 523-533.
- Niu S Y, Liu C L, Chang C C, (2019). What are passenger perspectives regarding airlines' environmental protection? An empirical investigation in Taiwan. *Journal of Air Transport Management*, 55(8): 84-91.
- Wang J, Wang J, (2021) A Model of influencing factors on low carbon consumption patterns of the public and government regulatory policies: an exploratory study based on grounded theory[. *Managing the World*, (4): 58-68.
- Wang L T, Sheng G H, She S X, (2023). Impact of empathy with nature on pro-environmental behaviour. *International Journal of Consumer Studies*, 47(2): 652-668.
- Wu B, Yang Z, 2018. The Impact of moral identity on consumers' green consumption tendency: the role of perceived responsibility for environmental damage. *Journal of Environmental Psychology*, (59): 74-84.
- Zhang Y, Du J, Boamah K, (2023). Green climate and pro-environmental behavior: addressing attitude-behavior gaps towards promoting sustainable development. *Sustainable Development*, 31(4): 2428-2445.
- Zhou P, Liu G, (2019) The change in values for ecological footprint indices following land-use change in a Loess Plateau watershed in China. *Environmental Earth Sciences*, 59(3): 529-536.