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ARTICLE

How Environmental Attitudes Affect Consumers' Willingness to Engage in Green Consumption Behaviors: The Moderating Role of "Plastic Restriction"

Yuxiang Zheng Hangqi Wang*

School of Economics & Management, Shanghai Maritime University, Shanghai, China

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1. Introduction

With the rapid development of China's economy, a series of real problems of lack of resources and environment have emerged. In such a situation, China insists on the construction of ecological civilization, and promoting the reform of consumption structure, establishing sustainable consumption pattern and developing green consumption civilization is the way to go. In today's society, when people choose to dine out, the concept of opposing table

ABSTRACT

Consumers' willingness to engage in green consumption behavior will be guided by internal psychological factors and also influenced by external environmental factors. One of the most common external interventions is the issuance of scientific policies and regulations. The government may introduce policies and regulations that help to increase the willingness of green consumption behavior, such as energy-saving and emission reduction policies and policies to restrict plastic products. In this paper, the authors study the mechanism of the effect of environmental attitudes on consumers' willingness to engage in green consumption behavior from the perspective of "plastic restriction", and conclude that the magnitude of the effect of policies and regulations on the willingness to engage in green consumption behavior varies significantly at different levels of environmental attitudes. This study provides scientific implementation ideas and targeted management suggestions for the government to formulate effective external intervention policies for green consumption.

waste and practicing conservation is becoming more and more prevalent; when people buy new cars, new energy vehicles such as Tesla and Azera begin to become the primary choice; when people walk into supermarkets and other outlets, the green attributes of products gradually become an important indicator of shopping. Green transformation is being carried out. In recent years, China has made great progress in actively developing green economy and promoting consumer civilization, but the social

Hangqi Wang,

School of Economics & Management, Shanghai Maritime University, Shanghai, China;

Email: vthepark@163.com

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^{*}Corresponding Author:

reality shows that there is still a need to improve the supply side of green consumption products, comprehensively enhance social security and reward and punishment mechanisms and raise the national awareness of green consumption, etc. Actively promoting the development of green consumer civilization and sustainable development requires the concerted participation of the whole society to promote the scientific construction of China's ecological civilization, high-quality economic development, and the implementation of the goal of building a beautiful China.

According to some scholars, consumers' willingness to engage in green consumption behavior is guided by internal psychological factors and also influenced by external environmental factors. Therefore, corporate organizations and government agencies, among others, often resort to external means to influence consumers' willingness to engage in green consumption behavior. One of the more common external interventions is the issuance of scientific policies and regulations. Issuing scientific policies and regulations is a relatively common means of external intervention. According to the actual situation, the government will issue some policies and regulations that will help increase the willingness of green consumption behavior, such as energy conservation and emission reduction policies and restrictions on plastic products. According to the research survey, these green consumption-related regulations and policies issued by the government may guide consumers' willingness to green consumption behaviors to a certain extent. Wang's (2011) [1] research shows that government-related policies are an important factor influencing consumers' low-carbon behavior. In June 2008, our country promulgated the "Plastic Restriction Order", requiring all retail places such as shopping malls, supermarkets, and bazaars to no longer provide plastic bags for free, thereby restricting the use of plastic products. After more than ten years, the use of plastic products has become somewhat weak, and the implementation of the "Plastic Restriction Order" policy has also become weak. In July 2020, the Ministry of Ecology and Environment jointly issued the "Notice on Solid Promotion of Plastic Pollution Control", which increased the management of plastic pollution, from "plastic restriction" to "plastic ban", the "plastic restriction" has been upgraded in a big step.

In the context of China's environmental problems and rising public anxiety about the environment and ecology, the questions of how to promote green consumption scientifically and how government policies and regulations affect consumers' willingness to engage in green consumption behavior need to be addressed. Based on this, this paper investigates the mechanism of policy and regulation

on consumers' willingness to green consumption behavior from the perspective of "plastic restriction", and provides scientific implementation ideas and targeted management suggestions for the government to formulate an effective external intervention policy on green consumption.

2. Review of Related Studies and Hypothesis Models

2.1 Green Consumer Behavior Intentions

Green consumption is an altruistic environmental behavior, green products usually cost more, and buying green products is good for the social environment ^[2]. Other scholars believe that green consumption behavior is the consumer's decision making process to evaluate the environmental attributes or characteristics of products and the purchase of environmentally friendly goods ^[3]. Ajzen (2001) argues that consumers' intention to consume green products reflects the degree of demand and desire to consume green products, and that pre-intentions have a strong correlation with actual behavior and can be used as an important indicator to predict actual green consumption behavior ^[4].

Green consumption behavior is a research topic that has been widely concerned by academics, and many researchers at home and abroad have conducted a lot of discussions and studies on this topic, and the factors influencing consumers' willingness to green consumption behavior are the main research hotspots. From the literature, it can be concluded that the factors influencing consumers' willingness to green consumption behavior are mainly demographic variables, consumer psychological factors and other external contextual factors. Researchers have generally found that demographic variables, although easy to measure and apply, have a limited impact on consumers' willingness to engage in green consumption behavior [2]. Since the explanatory power of demographic factors alone is not high, scholars prefer to study the mechanism of internal psychological factors on consumers' willingness to engage in green consumption behavior, focusing on psychological factors such as consumers' values and perceptions, environmental perceptions and attitudes, green emotions, and consumer innovativeness. A summary of the various types of psychological factors in the study of consumers' willingness to engage in green consumption behavior is shown in Table 1.

In conclusion, although psychological factors variables are not easy to manipulate compared to demographic variables, they have a stronger and more stable explanatory power for consumers' willingness to engage in green consumption behavior. A large body of literature has inves-

Table 1. Various psychological factors in the study of green consumer behavior intention

Researchers	Influencing Factors	Research findings
Wang Jianming (2015)	Green emotions of consumers	Both positive and negative green emotions have a significant effect on green purchasing behavior ^[5] .
Wu Bo (2016)	Environmental Values	Environmental values have a moderating role in the influence of participation in environmental protection activities on consumers' subsequent consumption ^[6] .
Sheng Guanghua (2018)	Consumer Environmental Responsibility	A sense of environmental responsibility has a significant positive effect on the willingness to purchase green products ^[7] .
Julia Bao (2019)	Positive emotional appeal	In the positive affective state, consumers' perceived green responsibility significantly and positively affects their green purchase behavior and significantly mediates positive affect and green purchase behavior [8].
Ji Junrong (2019)	Consumer values, environmental attitudes	Consumption values have a significant positive effect on green consumption behavior intentions; environmental attitudes mediate the relationship between consumption values and green consumption intentions ^[9] .
Lyudiya (2020)	Perceived behavioral effectiveness, perceived risk	Perceived behavioral effectiveness positively affects willingness to purchase green behavior; perceived risk negatively affects willingness to purchase green behavior [10].

tigated the factors influencing the willingness to engage in green consumption behavior from the perspective of different consumer psychological factors, such as consumers' environmental values, environmental emotions and environmental attitudes, as well as their perceptions of green consumption, which may have some influence on the willingness to engage in green consumption behavior.

2.2 The Direct Role of Environmental Attitudes

Differences in the definition of environmental attitudes have arisen due to the different research fields of scholars. According to domestic researchers, environmental attitudes are the general perceptions or opinions that people have about certain environmental behaviors [11]. Some other scholars believe that environmental attitudes reflect human emotions about environmental concerns, and it is a psychological state that is based on beliefs and thoughts about pollution, technology, all interdependent and equally important living things, human dependence on the earth's limited resources, and human behavior and power to transform the environment [12]. This state is based on beliefs and reflections about pollution, technology, the interdependence of all living things of equal importance, human dependence on the Earth's finite resources, and human behavior and power to transform the environment. Environmental attitudes can be subdivided into "general environmental attitudes" and "specific environmental attitudes", with "general environmental attitudes" referring to the general views and attitudes that most groups hold about the environment and environmental issues, and "specific environmental attitudes" referring to the general views and attitudes that most groups hold about the environment and environmental issues. The "general environmental attitudes" refers to the general views and attitudes that most groups have about the environment and environmental issues, while "specific environmental attitudes" is an attitude toward specific environmental behaviors [13]. In the present study, the main study was conducted to examine the general attitudes towards the environment. In this study, the main research is general environmental attitudes, that is, consumers' general attitudes towards environmental issues.

Through reading a large amount of research literature, research on environmental attitudes has focused on three main areas: what the dimensions of environmental attitudes are and how they are measured; what factors influence environmental attitudes; and the relationship that exists between environmental attitudes and environmental behaviors. Currently, research on the relationship between environmental attitudes and environmental behaviors and the factors influencing them is the key research areas. In the related research between environmental attitudes and environmental behavior, a large number of domestic and foreign researchers have studied and put forward many classical attitude-behavior theories based on "attitudes influence behavior", the most prominent of which is Ajzen's

theory of planned behavior, that is, behavioral attitudes determine behavioral intentions. Around the theory of planned behavior, domestic and foreign scholars generally show that environmental attitudes significantly affect environmental behavior. Huang Jingbo (2017) argues that environmental attitudes can explain environmental behavior well and that positive environmental attitudes positively influence consumers' environmental behavior [14]. In addition to this, Lili Pan (2018) explored the mediating role of environmental attitudes and argued that environmental attitudes have a mediating role in the influence of subjective norms on tourists' intention to behave environmentally [15]. As a result, this study proposes the following hypothesis.

H1: Environmental attitudes positively influence consumers' willingness to engage in green consumption behavior.

2.3 The Direct and Adjustable Role of External Policy and Regulatory Intervention

Situational factors, also known as external conditions, refer to the external environment in which people engage in some environmental behaviors. Both objective situational factors and subjective psychological factors are important variables that influence consumers' environmental behaviors. A large number of scholars at home and abroad have explored the mechanisms by which external contextual factors influence environmental behavior, and have generally shown that contextual factors have a significant effect on driving or hindering consumers' environmental behavior. Government policies and regulations have a planning and control role and can play an important role in regulating some group conflicts, interest conflicts, behavioral conflicts, and consciousness deviations, making the society more and more stable and harmonious by regulating and solving these problems, and promoting people to change their backward old ideas and promote social development with the guidance of social values and behavioral norms, and developing the values advocated by policies. Values. Among the external factors that influence the willingness of green consumption behavior, government policies and regulations are the key contextual variables. Environmental resources have public attributes, and the balance between the costs and benefits of consumers' behavior in the process of implementing green consumption behavior often leads to externality situations, which need to be solved by government interventions for externalities such as environmental pollution [16]. The problem of externalities such as environmental pollution needs to be solved by government intervention. Some researchers have studied government intervention strategies as external situational factors on environmental behavior, mainly in terms of the direct impact of intervention strategies on environmental behavior. There are many types of intervention strategies or intervention tools, mainly including economic, legal, political, social and other aspects, and policy regulations, economic incentives, information intervention and social influence are the main types of intervention [17]. This study focuses on policy and regulations in intervention strategies.

Liudiya (2020) shows that government actions (economic instruments, policies and regulations, and publicity on environmental protection or green consumption) can increase consumers' awareness of green consumption and have a positive effect on consumers' willingness to engage in green consumption behavior [10]. The relationship between governmental actions (economic instruments, policies and regulations, and environmental protection or green consumption propaganda) can increase consumers' awareness of green consumption and have a positive effect on their willingness to consume green. Han Na (2015) argues that policies and regulations can intervene in green consumption behavior through green consumption attitudes [16]. As a result, this study proposes the following hypothesis.

H2: Policies and regulations positively influence environmental attitudes.

H3: Policies and regulations positively influence consumers' willingness to engage in green consumption behaviors

H4: There is a moderating effect of policies and regulations on the relationship between environmental attitudes and consumers' willingness to engage in green consumption behavior.

The theoretical model of this study is shown in the figure below:

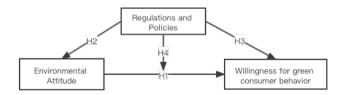


Figure 1. Diagram of the theoretical model of this study

3. Data Collection and Processing

3.1 Questionnaire Design

In this paper, the method of questionnaire survey is used to measure the research variables, and the scale is modified and adjusted on the basis of referring to the research of relevant scholars, and combined with the assumptions put forward in this paper, the content of the

questionnaire survey is divided into the following parts: the first part is the basic personal information of the respondents; the second part is the environmental attitude of consumers, using the NEP scale [18] and and the research formed by Hanshew [19], etc., and a total of 2 items are set up. The content of the third part is the willingness of consumers to consume green behavior. It adopts the scale research prepared by Wang and other scholars, and sets a total of 4 items [20]. The fourth part is about policies and regulations, with reference to Sun Yan (2006) [21] and Yang Honggang (2006) [22]. The fourth part is about policies and regulations, referring to the relevant studies by Sun Yan (2) and Yang Honggang (2), and a total of 3 items were set. Finally, this questionnaire adopts the five-point Likert scale method.

3.2 Sample Selection

This study was conducted by means of online research, a total of 900 questionnaires were placed, 871 questionnaires were returned, and the number of valid questionnaires after screening was 628. The population distribution of valid questionnaires was 50.80% female and 49.20% male; the proportion of subjects with bachelor's degree or above was more than 65.6%; the structural distribution of age, up 25to 35 years old accounted for 58.12%; in terms of occupation, company employees accounted for 32.96%;

in the part of personal disposable monthly income, more than 40% of the sample chose 5000-10000 RMB.

3.3 Empirical Test

3.3.1 Reliability and Validity Tests

The current studies use Cronbach's alpha coefficient for reliability testing, and from Table 2, it can be obtained that the Cronbach's coefficient of each study variable is higher than 0.7, which means that the scale reliability of the current study is good, and the data results are relatively stable and consistent, which is very much in line with the requirements of the study. The combined reliability (CR) of all groups in this study was higher than 0.7, and the average variance extracted (AVE) was higher than 0.5. This means that the convergent validity of the variables in all groups in this study was good. The validity was verified using KMO and Bartlett's test, and the KMO value was greater than 0.8, which means that the validity of the study data was good.

As shown in Table 3, the square roots of the AVE values of all three variables were greater than the correlation coefficients between the other latent variables, indicating that there were large differences between the variables in this study and that the discriminant validity of the scale was good.

Study variables	Measurement issues	Standardized factor loadings	Cronbach's alpha	AVE	CR
Environmental	The current environmental pollution problem, nature does not always clean itself.	0.903	0.788	0.8109	0.8956
Attitude	The "environmental crisis" is not just a gimmick.	0.898			
	I think we should promote green consumption behavior in society.	0.642		0.5242	0.8143
Willingness for green	I am willing to spend more money on products that are less harmful to the environment.	0.728	0.792		
consumer behavior	When buying a product, I will consider whether it is environmentally friendly.	0.78	0.792		
	I am willing to buy plastic products made from recyclable materials.	0.739			
Regulations and Policies	The government's "Plastic Restriction Order" has prompted me to actively purchase products that are less harmful to the environment.	0.733		0.5123	0.7591
	The government's "plastic restriction" has prompted me to buy plastic products made from recyclable materials.	0.704	0.737		
	The government's "Plastic Restriction Order" will be more effective in promoting green consumer behavior.	0.71			
KMO value		0.827			
Bartlett sphericity test	Approximate cardinality	1890.529			
	df	36			

Table 2. Reliability and convergent validity analysis table of each variable

Table 3. Discriminant validi	ty test results
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Variables	Environmental Attitude	Willingness for green consumer behavior	Regulations and Policies
Environmental Attitude	0.900		
Willingness for green consumer behavior	0.164	0.724	
Regulations and Policies	0.083	0.644	0.715

3.3.2 Model Fitness Check

In this study, the structural equation model was selected to test the hypotheses, and the results are shown in the Table 4: χ^2 =80.242, df=24, χ^2 /df=3.343, RMSEA=0.061, CFI=0.97, IFI=0.97, NFI=0.958, GFI=0.973, TLI=0.955, and each indicator reached a good level, indicating that the structural model of this study has a good fitness and can be used to The model can be used to test the hypotheses.

3.3.3 Direct Effects Test

As shown in the Table 5, the standardized path coefficient value is 0.644 when policies and regulations affect the willingness to green consumption behavior, and the path has a 0.01 level of significance. So the hypothesis H3 is verified. When environmental attitudes influence green consumption behavior, the standardized path coefficient value is 0.164 and the path is significant at the 0.01 level, which indicates that environmental attitudes have a significant positive influence on green consumption behavior, which verifies hypothesis H1. The standardized path coef-

ficient value is 0.084 and the path is significant at the 0.05 level of 0.01, which indicates that policies and regulations have a significant positive effect on environmental attitudes, and the hypothesis H2 is verified.

3.3.4 Testing the Regulatory Role of Policies and Regulations

With the help of model F1, the effect of environmental attitudes on willingness to engage in green consumption behavior can be obtained when the interference of the moderating variable policy and regulations is not considered, and the effect of environmental attitudes on willingness to engage in green consumption behavior is significant (t=4.149, p=0.000<0.05). As can be obtained from the Table 6, the interaction term between environmental attitudes and policies and regulations showed significance (t=3.088, p=0.002<0.05). This indicates that the magnitude of the influence of environmental attitudes on the willingness of green consumption behavior when policies and regulations at different levels are significantly different, and hypothesis H4 was verified.

Table 4. Various fit indices for the model

Index	χ^2/df	GFI	RMSEA	CFI	NFI	IFI	TLI
Conceptual Model	3.343	0.973	0.061	0.97	0.958	0.97	0.955

Table 5. Direct effect test table

Research Path			Non-normalized path coefficient	SE	z (CR value)	p	Standardized path coefficient
Environmental Attitude	\rightarrow	Willingness for green consumer behavior	0.075	0.018	4.156	0.003	0.164
Policies and Regulations	\rightarrow	Willingness for green consumer behavior	0.654	0.031	21.081	0.000	0.644
Policies and Regulations	\rightarrow	Environmental Attitude	0.184	0.088	2.101	0.036	0.084

Table 6. Test of regulatory effect of regulat	tory policy
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	Variables	F1	F2	F3
Independent variable	Environmental Attitude	0.075** (4.149)	0.051** (3.652)	0.061** (4.269)
Adjustment variables	Regulations and Policies		0.645** (20.892)	0.640** (20.875)
Interaction items	Environmental Attitude* Regulations and Policies			0.084** (3.088)
	\mathbb{R}^2	0.027	0.427	0.436
	Adjustment R ²	0.025	0.425	0.433
	F value	F (1,626)=17.216,p=0.000	F (2,625)=232.838,p=0.000	F (3,624)=160.522,p=0.000
	$\triangle \ R^2$	0.027	0.4	0.009
	\triangle F value	F (1,626)=17.216,p=0.000	F (1,625)=436.483,p=0.000	F (1,624)=9.533,p=0.002

4. Conclusions and Recommendations

This study examines how environmental attitudes affect consumers' willingness to engage in green consumption behavior under the influence of the "plastic restriction" policy and regulations. A conceptual model of the relationship between consumers' willingness to engage in green consumption behavior, environmental attitudes, and policies and regulations was developed, and some conclusions were drawn.

Firstly, environmental attitudes will have a significant positive influence relationship on the willingness of green consumption behavior; secondly, policies and regulations will have a significant positive influence relationship on environmental attitudes and policies and regulations will have a significant positive influence relationship on the willingness of green consumption behavior; finally, when environmental attitudes are influenced on the willingness of green consumption behavior, policies and regulations have a significant difference in the magnitude of influence at different levels. The followings are the opinions and suggestions made through both government and consumer levels.

4.1 Government Level

Government departments should continue to improve relevant policies and regulations, especially those related to green consumption and policies. The "plastic restriction" details the production of plastic bags and the use of regulations, but no clear definition of plastic bags recycling treatment. Policies and regulations positively influence consumers' willingness to green consumption behavior, and promote consumers' green consumption behavior by restraining and guiding individual attitudes and behaviors. The government should make efforts to improve the consumption policy and supporting laws and regulations to provide legal protection for the green consumption behavior of consumers in light of the real situation. Government departments should improve the management mechanism of green energy consumption, improve the management level of people's green consumption, and strengthen the ability of regulating and guiding people's green consumption behavior. It should build a management system with government departments as the core and involve the people to form a multi-level, all-round, scientific assessment, timely feedback and supervision in place. Relevant government departments should combine various intervention strategies to guide the green consumption behavior of consumers.

The promulgation of policies and regulations such as the "plastic restriction order" can affect the environmental behavior of consumers to a certain extent, but due to the high cost of implementation, consumers also have a rebellious mentality. In order to make consumers' green consumption behavior long-term and stable, it is necessary to combine appropriate economic incentives and social education. The relevant government departments can provide feedback and incentives to consumers' green consumption behavior by providing appropriate economic subsidies, such as incentive policies for waste recycling, green product purchase subsidies, etc. At the same time,

it is necessary to vigorously promote green consumption and environmental protection behaviors. In addition to traditional media such as TV and radio, new media such as WeChat public number, micro-blog and mobile applications can be used to make consumers clearly understand the importance of green consumption, raise environmental awareness, establish a correct attitude towards green consumption, and establish a foundation for green consumption behaviors from the ideological level.

4.2 Consumer Level

Consumers' environmental attitudes have a positive influence on the willingness of green consumption behavior. First of all, from the perspective of consumer psychology, it is crucial to improve the cognition of green consumption as well as to cultivate a positive and healthy attitude towards green consumption. Improving the awareness and recognition of green consumption behavior, getting rid of the prejudice against green products and green consumption, and learning green consumption knowledge comprehensively are conducive to the long-term development of green consumption. It is suggested that government departments and various social organizations actively carry out various green consumption science and education activities that meet the needs of the public and have long-term effects, enhance the quality of ecological and environmental civilization of the public, strengthen scientific and rational green consumption values, and thus effectively promote green consumption behavior.

Secondly, improving the incentive model for consumers to consume green is a very efficient way, such as implementing a green consumption point system and issuing green consumption stars. Establish a "green credit mechanism" for consumers, and when consumers engage in green consumption behavior, they will be given appropriate green points, which can be used for subsequent consumption purposes. Combine green consumption behavior with incentive mechanisms to continuously strengthen green consumption awareness through incentives. Appropriate preferences and benefits are given to consumers with outstanding contributions, which can make people realize the benefits of their green consumption behavior to the environment, thus gaining a sense of accomplishment and stimulating the endogenous motivation of green consumption. At the same time, through the demonstration effect of green consumption role models and the promotion role of new media, we can establish new era green consumption models, guide and promote the participation of all people in green consumption activities, and form a new trend of social and normalized green consumption.

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Conflict of Interest

Authors declare no conflict of interests.

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