

# *A Review of Green Consumption Research*

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**Abstract:** Promoting green consumption is a profound change in the consumption field, which is related to the green and low-carbon transformation of the whole production and lifestyle. However, the existing research on green consumption is numerous and miscellaneous. Based on the existing research on green consumption, this paper combs the relevant research contents of scholars on green purchase intention, sorts out the existing research methods, and summarizes various influencing factors of green consumption. After summarizing the existing research, it points out the limitations of existing green consumption research and the possible direction of future research on green consumption.

## **1. Introduction**

Since the reform and opening up, China's economy has been developing continuously, but with the continuous deterioration of environmental conditions, the development of economic conditions has brought an unbearable burden to the environment. To promote green and low-carbon development, we should not only regulate and adjust the pollution behavior at the production end, but also pay attention to the cultivation of green behavior at the consumption end. The daily consumption of consumers has a very important impact on carbon emissions, and the total amount and proportion of carbon emissions in the consumption process also show an increasing trend. Therefore, starting from families Reducing consumers' carbon emissions in the process of daily consumption has become an important entry point for environmental protection [1]. Recently, China released the action plan for reaching the peak of carbon by 2030, which points out that during the "14th five-year plan" period, green production methods should be widely implemented, and during the "15th five-year plan" period, green lifestyle should be made a conscious choice of the public. The plan emphasizes the need to promote green and low-carbon national action, strengthen ecological civilization education, and promote green and low-carbon lifestyle. In November, 2021, the "implementation plan for carrying out green and low-carbon leading actions in public institutions to promote carbon peak" was officially released, and five key measures were also put forward, including accelerating the development of green and low-carbon energy utilization, providing green and low-carbon operation level of buildings, promoting the use of green and low-carbon technology products, carrying out green and low-carbon demonstration and creation, and strengthening the construction of green and low-carbon management capacity.

## 2. Research on purchase intention of green products

The so-called green products, in a narrow sense, refer to pure natural food or products made of natural plants that do not include any chemical additives. In a broad sense, they refer to products whose production, use and treatment processes meet environmental requirements, are harmless or minimally harmful to the environment, and are conducive to resource regeneration and recycling. Collect and sort out the existing research on consumers' consumption of green products or low-carbon products, which can be classified according to different research objects or research methods.

### 2.1. Classification according to the research object

From the perspective of consumers, green products can be divided into five categories: clothing, food, housing, transportation and tourism. The research on product purchase intention mainly focuses on four aspects: green food, green residence, green travel and green tourism.

#### (1) Green food

The research on the public's willingness to buy green food is mostly about the willingness to buy low-carbon livestock products, vegetables and so on. Tranter et al. (2009) explored the level of consumers' willingness to pay for organic food by using the single boundary dichotomy of conditional value assessment, and believed that consumers' motivation to pay a premium for low-carbon pork came from altruism and egoism [2]. In animal products, in addition to the research on the purchase intention of pork, some scholars also studied the purchase intention of consumers for beef and carbon labeled milk. Lee et al. (2011) studied the impact of positive and negative information of traceable imported pork on the willingness to pay of Korean consumers [3]; In addition to the research on livestock products, many scholars have also conducted a series of studies on consumers' willingness to buy organic and environmentally friendly vegetables. Roitner et al. (2008) found that consumers' willingness to pay for organic vegetables is significantly affected by factors such as age, years of education, income and awareness [4]. A small number of scholars have also studied the purchase intention of organic aquatic products [5], organic fruits [6] and Ecological Rice [7].

#### Green residence

At present, there have been studies on the willingness to pay for green housing, focusing on green low-carbon building materials, low-carbon electricity and other aspects. Wang Zhenshuang et al. (2018) used logistic and multiple linear regression models to study consumers' willingness to pay for low-carbon building materials through a questionnaire survey [8]. Liu Haifeng et al. (2011) applied the conditional value assessment method to estimate Beijing residents' willingness to pay for low-carbon electricity using the single boundary bisection survey method [9]. The results showed that 50.2% of the respondents were willing to pay. Lv Yuanfang et al. (2021) analyzed the energy conservation and environmental protection of prefabricated buildings from the aspects of design scheme, construction process, material application and so on [10].

#### (3) Green travel

Green travel refers to the use of public transport and other relatively environmentally friendly travel tools to reduce carbon emissions and achieve the sustainable use of environmental resources. It involves manpower, animal power, electricity, energy, etc., including walking, bike sharing, car sharing, public transport, new energy vehicles and other tools. The public's own environmental awareness and whether the urban environment is conducive to green travel are important factors for the public to make green travel decisions [11-12]. With the continuous development of the new energy vehicle industry, more and more researchers have carried out in-depth research on new energy vehicles, focusing on the impact of new energy vehicle related technologies, new energy vehicle consumption promotion policies and individual characteristics of consumers on the

purchase intention of new energy vehicles [13]. In the early stage of new energy vehicles entering the market, policies such as price incentives and tax incentives play a vital role[14]. With the continuous popularity of new energy vehicles, more and more consumers tend to pay attention to charging concessions, toll concessions and other related preferential policies in the process of use.

#### (4) Green tourism

Tourism also occupies a certain position in economic development. Under the background of green development, "green tourism" has also become the focus of scholars' research. Green tourism can be divided into broad sense and narrow sense. Green tourism in a broad sense refers to all kinds of tourism products and services with the characteristics of being close to the environment or environmental protection. In a narrow sense, green tourism refers to a kind of fashion tourism that is far away from noise and pollution, close to nature, and can obtain healthy spiritual interest on the premise of protecting the environment and protecting the ecological balance. It usually refers to rural tourism, that is, activities in rural areas, mountainous areas, fishing villages, etc. The related research of green tourism has many focus contents, and the existing research mainly focuses on three aspects: green tourism decision-making, tourism consumption behavior, tourism destination and so on. Fu Shiqin et al. (2015) summarized the main factors affecting green tourism behavior in tourism from the perspective of personal and psychological factors, and believed that personal factors such as income level, education level, lifestyle and psychological factors such as public cognition and attitude towards green tourism are important variables affecting their green tourism decision-making [15]. Pan Hao et al. (2020) studied the consumption behavior of green tourism with national parks as the research object, and found that the feasibility, consumption atmosphere and consumption experience of green tourism consumption will affect the intention of green tourism consumption [16]. Geng Shufeng et al. (2019) made a comprehensive evaluation of the suitability of China's green tourism base, and found that the suitable areas for green tourism in China are clustered, with better in the middle and weaker in the West [17].

## 2.2. Classification according to research methods

From the perspective of research methods, the existing research on the purchase intention of green products mainly adopts the early hypothetical experimental methods abroad or domestic non-hypothetical research methods, which can be further divided into the following types:

(1) Questionnaire survey method; Foreign scholars Gracia et al. (2002) found that Spanish consumers have a high evaluation of the positive effects of the beef traceability system by analyzing the data of the questionnaire [18]. Consumers' cognitive level of traceable food directly affects their preferences, willingness to pay and purchase behavior. Cui et al. (2013) learned from the conditional value assessment method, and through a questionnaire survey, they learned about the willingness to pay of urban consumers in Jiangsu Province for the superposition of the safety attributes of agricultural products, and found that consumers' potential willingness to buy failed to translate into additional willingness to pay [19].

(2) Value appraisal method; Value evaluation method is the main method for scholars to study consumers' preferences and willingness to pay in recent years. Value evaluation method can be further divided into declarative preference method and explicit preference method. Declarative preference method is based on the idea of "preference consumer choice", while explicit preference method is based on the idea of "consumer choice preference", The explicit preference method needs to use observable real market data for research. However, due to the limited market share of green food (low-carbon food) and the lack of actual market purchase data, the declarative preference method is currently more suitable for studying consumers' willingness to pay for green products [20]. The declarative research method is based on attribute utility theory, random utility theory and

discrete choice model. On the basis of asking consumers' declarative preference data, it deduces consumers' willingness to pay for related products. Declarative preference methods can be further divided into conditional valuation method CVM [21], selective experimental method Ce [22] and experimental auction method EA [23].

(3) In addition to questionnaires and economic experiments, some scholars have used situational analysis and structured interviews to conduct relevant research. Wu Yi et al. (2020) used scenario analysis to simulate three shared bicycle development scenarios: waste cycle, product cycle and service cycle, and compared and analyzed the interaction mechanism and environmental benefits of social interface and technical interface under each simulation scenario [12]. Li Xiang et al. (2015) studied consumers' willingness to pay for tomatoes with different organic certification labels based on structured interview research and selection experiments, and found that the order of consumers' willingness to pay from high to low was EU label - Brazil label - Japan label and China label [24].

### **3. Research on the influencing factors of green consumption behavior**

Scholars have carried out a series of studies on the influencing factors of green consumption, which can be summarized as the following aspects: consumer individual factors, product factors, external social norms, external policy regulation and so on.

#### **3.1. Individual factors of consumers**

Consumption is divided into production consumption and personal consumption. Green consumption belongs to personal consumption, which refers to the behavior or process used to meet personal life needs. Therefore, consumers' individual factors will inevitably affect their own consumption decisions. At present, scholars generally study the impact of individual attributes on their consumption decisions from the perspective of individual demographic characteristics of consumers, and believe that consumers with high education, high income, high age, and minor children or elderly people in their families will be more willing to buy green products. In addition to demographic characteristics, scholars also have an impact on consumers' psychological level on their green consumption decisions. Scholars generally believe that consumers who pay more attention to health, environment and environmental protection are willing to pay higher prices for green products [25].

#### **3.2. Product factors**

The so-called green consumption, in the final analysis, belongs to the consumption level, which is only the further performance of consumption in the field of environmental protection. Therefore, like ordinary consumption, consumption objects (i.e. products) will have a great impact on public consumption. As for the impact of product factors on public green consumption, scholars generally believe that price, variety, quality, brand, packaging, etc. will significantly affect public green consumption decisions [26]. Ge et al. (2019) believe that product brands will have a significant impact on green consumption. In order to reduce the purchase risk of green products, consumers will tend to buy products of well-known brands [27].

#### **3.3. External social norms**

Every consumer is an individual in a certain external environment, whose behavior is not only affected by itself and the consumption object, but also by the external influence of the environment. Just like the viewpoint of social person theory, employees who are active in society do not exist in

isolation, but belong to "social people" as a member of a certain group. People have social needs. The relationship between people and the sense of belonging of the organization can motivate people's behavior more than economic reward. Therefore, in order to integrate into the surrounding environment and gain the recognition of others, consumers' behavior choices will be affected by others around them, including relatives, friends, colleagues, classmates, and even strangers in the same environment will affect their own choices. From this perspective, scholars believe that consumers' sense of morality, subjective norms, face awareness, etc. will promote green consumption [28].

### **3.4. External policy regulation**

Although green consumption has selfishness, for consumers, it is more about the environmental protection and altruism of products, and the price of green products is mostly higher than that of ordinary products. Therefore, the government still needs to issue relevant incentive policies to better promote the public's green consumption. The existing policy documents to promote public green consumption can be divided into economic incentive type, command control type and so on. The economic incentive type mainly makes up for the green consumption behavior by giving subsidies or consumption vouchers to consumers, in order to cushion the impact of high prices of green products on Consumption Willingness to a certain extent. Command control mainly controls non-green consumption behavior by prohibiting the production, circulation and use of non-green products.

### **4. Green consumption is the driving force of green production**

The public is the core subject of green consumption, and enterprises are the responsible subject of green supply. Since the country began to encourage the use of clean energy, accelerate the transformation of low-carbon energy utilization, and promote the use of green and low-carbon technology products, China's high-energy consumption industries are constantly facing pressure from outside. The external coercive factors faced by enterprises can be divided into two categories: one is the coercive pressure from the government, which is the subjective and dynamic influence under target management, and the other is the coercive pressure from the market, which is the objective environmental influence under the action of the market [29]. Scholars have carried out extensive and in-depth research on the adverse effect of consumption on production. Deng Kui et al. (2013) believed that the backward mechanism of energy mainly includes four basic aspects: controlling the total energy consumption, increasing the proportion of non-fossil energy, and reducing the intensity of energy consumption and carbon emissions [30]. Liu Hui et al. (2015) found that consumption upgrading has a strong role in promoting the optimization of industrial structure through the study of changes in the consumption structure of products and services [31].

### **5. Summary and Outlook**

Through combing and summarizing the literature related to green consumption at home and abroad, this paper reviews the public's willingness to green consumption, research methods, and the internal and external influencing factors of green consumption at this stage. The green purchase intention of consumers is summarized from five aspects, such as clothing, food, housing, transportation and travel. The research methods are divided into questionnaire survey, economic experiment, situational analysis, etc. the influencing factors are summarized from four aspects: consumers' own factors and product factors, external social norms, external policy regulation factors, The individual factors of consumers are subdivided into two dimensions: demographic

characteristics (high education, high income, high age, and family member attributes), psychological factors (health concerns, environmental concerns, environmental awareness). The external situational factors are subdivided into market product factors (price, type, quality, brand, packaging), external social norms factors (moral sense, subjective norms, face awareness) External policy regulation (economic incentive policy, command control policy) three dimensions, summarizes the impact of internal and external factors on consumers' green consumption behavior.

After sorting out and analyzing the relevant research conclusions of green consumption at home and abroad, it is found that most scholars regard the public's green consumption will as the outcome variable, and equate the will with consumption behavior in their research. However, relevant studies have also found that there is no consistency between willingness and behavior, and many consumers' purchase intention cannot be successfully transformed into real consumption behavior. Therefore, in future research, we can take green consumption intention and behavior as two independent variables, and study them separately to further study how to better transform purchase intention into purchase behavior. In addition, at present, most domestic scholars only study the influence mechanism of green consumption from one aspect of consumers themselves or situational factors, ignoring the joint effect of internal and external factors on consumers, and unable to truly reflect consumers' consumption scenarios. Therefore, the future research on green consumption should focus on the factors of consumers themselves, introduce the influence of external situational factors on green consumption behavior, jointly study the influence mechanism of green consumption from inside and outside, and build a comprehensive research system to promote green consumption.

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