A Review on Green Consumption

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Abstract. In environmental protection activities, consumers play an increasingly important role, and green consumption is the embodiment of environmental protection behavior in the consumption field. Although there have been some studies on green consumption at home and abroad, few studies systematically review the related studies on green consumption. On the basis of clarifying the basic concept of green consumption, this paper combs the relevant literature of green consumption from the aspects of the influencing factors of green consumption and the causes of the attitudinal and behavioral differences of green consumption, and discusses the countermeasures for the development of green consumption from the perspectives of consumer enterprises and the government. Finally, the shortcomings and possible future research directions are summarized.

1. Introduction
In recent years, the shortage of natural resources and environmental pollution caused by human survival and development have become increasingly serious. The ever growing population, increasing material and cultural needs and the need for human development and prosperity have exerted enormous pressure on global resources and the environment. People gradually realize that extensive economic growth at the expense of the environment is not a long term solution. Environmental problems cannot be ignored at present. How to realize the harmonious coexistence of natural environment and human society has become the focus of global attention. In the face of increasingly serious resource and environmental problems, it has become a global consensus to control pollution emissions, improve resource utilization efficiency and achieve ecological civilization and sustainable development. Green consumption is an important way to promote the green development of society, and the research on green consumption is also a hot topic at present, but few articles carry out integrated analysis on it. Therefore, this paper reviews the research on green consumption in order to provide new insights for future research.

2. The concept and measurement of green consumption
When the concept of green, low carbon and environmental friendliness becomes an important part of the strategy of sustainable development, the social economy takes on a brand new look of development, the government and enterprises guide people to pay attention to the content related to green, and the green is gradually derived from the field of production to the field of consumption. Green consumption supports various green activities, advocates and guides consumers to pay attention to ecology, and produces green purchasing behaviors from the perspective of environmental protection. The term "green consumption" first appeared in the 1970s, when people realized that although industrial civilization had brought improvement of living standards, it was also accompanied
by a series of severe environmental problems caused by high pollution and energy consumption, so green consumption began to be recognized and advocated. After sorting out the existing literature, the representative scholars and their definition of green consumption are shown in table 1. In 1987, John and Julia[5] systematically sorted out the research results related to green consumption and defined the concept of green consumption for the first time, which could be simply summarized as the consumption of products that were pollution-free, resource-free and harmless to human safety and national development. On this basis, the majority of scholars further interpret green consumption. Pieters believes that green consumption is the consumption activity that meets human needs and has the least impact on the natural environment. Connolly et al. proposed that green consumption is voluntary participation in environment-friendly consumer behavior. Growing environmental problems have led to market-oriented green consumption[3], whose cycle includes three stages: purchase, use and disposal of products. Correspondingly, the green purchase behavior of consumers is to measure the purchase intention or actual purchase behavior of products, which have environment-friendly characteristics or attributes, while the green use behavior of consumers is all environmentally friendly behaviors that do not involve the purchase and disposal of products, and the green disposal behavior of consumers is mainly reflected in the recycling and reuse of goods. For example, buying organic food, using energy-efficient appliances, recycling waste and so on are the manifestations of green consumption. In addition, people widely use the "5R" principle to summarize the connotation of green consumption, including: Reduce, Reevaluate, Reuse, Recycle, Rescue. For consumers, enterprises, government and the whole society, the protection and development of environmental resources and social responsibility are increasingly important fields[4]. Green consumption encourages consumers to buy environment-friendly products, realizes resource-saving consumption, and emphasizes taking into account the ecological environment while realizing economic development. Green consumption is an inevitable requirement to meet people's consumption needs and environmental needs for a better life.

As an altruistic prosocial behavior, green consumption involves the balance of self-interest and others' interests. Consumers pay a personal cost (for example, extra money or more time) when making green purchases. Although the benefits of green consumption are small for individuals, they are long-term benefits for others and the society. Buying green products, for example, can be understood as an altruistic act. Due to the high requirements on the production process, green products have higher costs than ordinary products. The immaturity of green innovation technology leads to worse quality of green products, but green products are beneficial to the sustainable development of society. Obviously, as a rational economic man and focus on the present consumers, its behavior change is not easy; a lot of changes in consumer behavior is good for the environment, but the personal benefits to consumers is of secondary importance, and this benefits to the environment is often reflected in the distant future, and this kind of behavior change requires consumers pay more cost. Generally speaking, the benefits brought by green consumption behavior to consumers are intangible, high cost and indirect, which brings difficulties to the change of consumer behavior and also brings attitudinal and behavioral gap.

As the connotation of green consumption is rich and there is no uniform definition, it can be regarded as both individuals' intention to their future green consumption behavior and consumers' actions taken to achieve the goal of green environmental protection. Therefore, the tools and methods used by scholars to measure green consumption are mainly divided into two categories: one is questionnaire scale, which measures green consumption intention or green consumption behavior through questionnaire survey; The other is the experimental research method, mainly through the experimental design of individual green consumption behavior to carry out a direct study. In recent years, there has been a gradual increase in the number of studies on green consumption. Regarding the research field of green consumption intention, Zeithaml et al. (1996) prepared questionnaire items to measure consumers' purchase intention of green products. Then Gollwitzer et al. (1999) conducted an in-depth study of green consumption intention and compiled a questionnaire with high reliability and validity. Chan et al. (2001) developed a measurement scale of green consumption intention including three items.
Table 1. Sorting out the concept of green consumption.

| Representative scholar | The concept of green consumption |
|------------------------|----------------------------------|
| John & Julia (1987)    | The products consumed are pollution-free, do not waste resources and are harmless to human safety and national development. |
| Carlson & Grove & Kangun (1993) | The products consumed are pollution-free, do not waste resources and are harmless to human safety and national development. |
| Roozen (2000)        | The green consumption cycle consists of three phases: purchase, use and disposal of products. |
| Lu (2013)            | The concept of green consumption refers to consumers' willingness to buy eco-friendly products with minimal impact on the environment. |

3. Influencing factors of green consumption

The influential factors of green consumption have long been the research focus of scholars. By summarizing the previous literature on green consumption, this paper summarizes the influencing factors of green consumption. Generally speaking, it is mainly discussed from three aspects: individual, organization and society.

3.1. Individual factors

3.1.1. Population characteristics.

Demographic characteristics. At first, scholars studied the factors affecting green consumption behavior from the aspect of demographic characteristics, mainly from the aspects of gender, age, income, education level and social status, etc., trying to find the reasons for consumers' concern about environmental issues and green consumption from the perspective of differences in demographic characteristics. In terms of gender, women generally prefer green consumption more than men, but men respond more positively than women in some aspects. In terms of age, young people are more willing to make green purchase behavior than old people, while old people are more willing to make green recycling behavior. Moreover, groups with higher income, higher education and higher social status are more likely to participate in green consumption. Although population characteristics to a certain extent, can reflect the environmental protection knowledge and attitude of consumer, but in the actual role is very limited on the environmental protection product purchasing behavior, and a lot of demographics variables relationship with consumers' green consumption theory and concept is not very strong, so simply analysis the relationship between demographic variables and consumers' green consumption, tend to have very little strong powers of persuasion.

3.1.2. Psychological factors.

Consumers' green consumption is influenced by internal psychological factors, such as awareness of environmental responsibility, the pursuit of environmental protection knowledge and maintenance of their own interests. Consumers who have environmental conscious will increase the degree of environmental-oriented consideration, which means that environmental conscious consumers have a higher possibility of green consumption. Roszak (1995) believes that environmental awareness integrates the environment and individuals as part of self-concept, and not doing behaviors harmful to the environment means not doing behaviors harmful to oneself. Schlegelmilch (1996) proposed that environmental awareness could be summarized and embodied by environmental knowledge, environmental attitudes and environmental behaviors, which had a positive impact on consumers' green consumption intentions and behaviors. Environmental knowledge refers to consumers' understanding degree and discrimination ability of environmental protection and green products. Environmental attitude refers to the emotion of consumers or attitude towards environmental issues,
that is, the degree to which they are willing to pay actions or money for environmental protection activities; Environmental behavior refers to consumers' past behaviors of purchasing green goods or other green consumption behaviors. Different scholars have different views on the dimensions of environmental awareness. Some scholars think that environmental awareness only involves attitude, some think that it only involves behavior, some think that it involves cognition and emotion, and some think that it involves cognition, emotion and behavioral intention. Consumer perceived utility is often used as a psychological variable to distinguish green consumers from non-green consumers, which refers to the belief of consumers that they can contribute to the solution of specific environmental problems through individual consumption activities. Ellen (1991) et al. believe that consumers' perception of the practical benefits of their behaviors is very important and can play a key role in making green consumption decisions. Consumers believe that their actions will play a practical role in environmental protection, so they are more willing to participate in some environmental practices. Lee and Holden (1999) found that consumer perceived utility significantly predicted high-cost consumer behavior. The research by Straughan and Roberts (1999) shows that consumer perceived utility has a strong explanatory power to consumers' green consumption.

3.2. Organizational factors

3.2.1. Economic incentives.
Green consumption of consumers is often influenced by economic factors. For example, they may be reluctant to buy energy-saving refrigerators because of state subsidies and long-term cost savings, or they may be reluctant to buy green products because they cost more than non-green ones. So companies often use prices to encourage consumers to go green. Many previous studies have supported the positive impact of enterprise economic stimulus on green consumption. However, economic stimulus may lead to the crowding out effect of external motivation, making consumers transfer altruistic green consumption behavior from the moral field to the economic field, thus reducing the influence of such internal factors as moral motivation. For example, a study in the United States shows that public willingness to donate blood is higher in the absence of material incentives, while the number of people who donate blood is lower after the government gives external incentives to donors.

3.2.2. Publicity factors.
Teng et al. (2014) found that different time-distance strategies affected customers' willingness to participate in environmental protection plans of hotels. The analysis results showed that "foot-in-the-door time-distance strategy" increased customers' willingness to participate in environmental protection plans of hotels in the far future, while "result-simulation strategy" increased customers' willingness to participate in environmental protection plans of hotels in the near future. Positive suggestion makes people's attitude towards ecological behavior more favorable, makes them think they are more environmentally friendly, and increases their moral responsibility for the environment. Cornelissen et al. (2008) found that positive suggestion can increase the extent of consumers' green consumption behavior in two ways. The first is accessibility; The second is the degree to which the consumer diagnoses the activity. Royne et al. (2012) found that when advertising use environmental interests, from the perception of the product quality will be lower than the use of personal interests, and the perception of the product price will be higher than the use of personal interests when the perception of price, and different psychological pricing strategy will also affect consumers' green consumption behavior, expanded the consumer understanding of environmental protection product advertisement information cognition. Borin (2011) found that, for consumers, with positive environmental information products than with negative environmental information products more popular, and positive environmental information will have a positive impact on consumers' green consumption behavior, however, negative environmental information has the greatest impact on consumers.
3.3. Social factors

3.3.1. Impression management.
Others' views on their own behavior have a considerable influence on consumers' behavior of purchasing green products. Consumers' behavior is largely influenced by other people's perceptions of their product choices and use. In an environmentally friendly society, consumers generally view environmental friendliness as a reputable and modern way of life. Green product purchase decisions convey consumers' eco-friendly self-image and show others their social image of protecting the environment. Griskevicius et al. (2010) studied the impact of status motivation on consumers' purchase of green products in three experiments. Activating identity motivation leads people to choose green products. When consumers buy green products in public places, and the cost of green products is higher than that of non-green products, the status motive is that the representative of consumer altruism shows the viewpoint of individuals' willingness and ability to bear costs for the interests of others, thus increasing the purchase of green products. Gao and Mattila (2015) found that the social relationship status, self-affirmation and popularity of consumers and other consumers jointly affect consumers' willingness to choose green hotels. When green hotels were portrayed as a popular choice, socially accepted consumers were more likely to choose green hotels in their self-affirmation than socially excluded consumers. On the contrary, in the absence of self-affirmation, socially accepted consumers are less likely to choose green hotels than socially excluded consumers.

3.3.2. Social norms.
The normative belief of consumers is also an important factor affecting their green consumption. Social norms can be divided into descriptive norms and prohibitive norms. Descriptive norms are opinions about what is commonly done in a given situation, providing a standard from which people do not want to deviate, while coercive norms are opinions about things that are generally accepted or not in a culture. White and Simpson (2013) discussed the impact of injunctions, descriptions and interests on consumer behavior[6]. When self is activated at the collective level, prohibition and descriptive normative appeal are the most effective, while interest appeal is less effective in encouraging sustainable behavior. When self is activated at the individual level, interest appeal and descriptive appeal are most effective. Schultz et al. (2007) found through a survey of community energy consumption that different residents have totally different effects on descriptive normative information, depending on whether they are above or below the average energy consumption level of their community at the beginning. Providing energy-intensive households with descriptive normative information about the average household energy use of their neighbours can effectively reduce household energy consumption. In contrast, the same descriptive information increased household energy consumption for households with low initial energy consumption rates. Nolan et al. (2008) found that descriptive normative information can encourage people to save energy and protect the environment more than other information. Goldstein et al. (2008) found that the use of descriptive norms can promote the effectiveness of consumer participation in hotel environmental project signage. In addition, the social norm appeal is most effective in describing the group behavior that takes place in the context closest to the individual's current situation.

4. Green Consumption Attitudes- Behavior Gap
Previous studies have shown that consumers may pay attention to environmental issues, but this concern may not necessarily translate into green purchasing behavior, which is the attitude-behavior gap in environmental consumerism. Consumer's perception of environmental friendliness may not always reflect consumer's environmentally friendly behavior. Although consumers pay attention to environmental issues, there is a lag between environmental awareness and green purchasing behavior. Kronrod et al. (2012) believe that persuading consumers to conduct environmentally friendly behavior is a very challenging task, because the beneficiaries of this behavior are not always consumers themselves, but society or other consumers.
McDonald et al. (2009) found that even the same green consumers will not use the same information sources or decision criteria for products in different industries by comparing the behaviors of the same green consumers in different products and service departments. Individual trust, group identity, expectation of others' cooperation and perceived efficiency are important factors to distinguish between "non-green" and "green" buyers. Different individual consumer characteristics are inconsistent and lack of sufficient knowledge of green consumption due to green products attaches great importance to the environmental protection property, need higher technology innovation, which leads to green product compared with similar products with higher price, and according to the social stereotypes, consumers tend to think high warm has relatively low ability of enterprise, thus its green products with high efficiency low price is that consumers choose the green product is one of the biggest obstacles to action, and green products for the interests of the consumers need time accumulated over a long period. Therefore, consumers' positive attitude towards green products, whether based on intrinsic altruistic motivation or extrinsic selfish motivation, is ultimately difficult to translate into actual behavior when their income level is limited. In addition, consumers lack sufficient knowledge of green consumption and the prevalence of enterprises' green cleaning behaviors make consumers suspicious of green behaviors. This not only increases the perceived risk of consumers, but also increases the cost of time and energy for consumers to obtain, identify and process green environmental information. Carrington et al. (2014) constructed a conceptual model including implementation intention, actual behavior control and situational context as a whole to explain the attitude-behavior gap. Davies (2011) found that compared with ordinary goods, consumers have a significantly lower tendency to consider moral issues in luxury consumption. Davies argues that there are two reasons why the ethical attitudes of consumers in the past literature do not translate into action: research errors (i.e., previous literature relies heavily on out-of-context experiments or self-reported data because few studies have looked at actual ethical purchasing behavior) and cognitive decision-making barriers. This leads to social expectations bias (people feel pressured to react to what they think is socially acceptable) and choice bias. Antonetti and Maklan (2015) divided the gap of green consumption attitude and behavior into four types: altruistic, egoistic, conspicuous and political. It also summarizes the reasons for the gap between attitude and behavior. First, the gap is the result of psychological or physical obstacles, which limit consumers' behavior and the influence of attitude on actual behavior; Second, the gap is the result of the influence of social favorable prejudice in the investigation.

5. Strategies of green consumption development
At present, the development of green consumption has become the inevitable trend of social and economic development. As the common subject of green consumption, its sustainable development is inseparable from the participation of consumers, enterprises and the government.

Consumers are the main body of green consumption. If there are no consumers, there will be no practitioners of green consumption behavior. Only when consumers actively participate in green consumption can green consumption be truly developed. First of all, consumers should change the traditional ideas and set up the green consumption concept of environmental sustainable development. Green consumption involves the tradeoff of consumer interests. In the short run, green consumption will increase consumers' various costs, but in the long run, it will not only benefit the society but also benefit themselves. Therefore, consumers need to actively learn about green consumption through various ways, actively accept green education, and establish the concept of green consumption. At present, the public has a high degree of recognition of green environmental protection behavior, but the recognition is superficial, relatively shallow, and even distorted. For example, consumers should have a deep understanding of the meaning of green consumption and a correct understanding of the connotation of green consumption if they buy energy-saving products only under the encouragement of government policies and corporate propaganda. Secondly, although consumers have a strong sense of green environmental protection and green behavior intention, they are often unable to put into action, forming attitudinal and behavioral gap. This is closely related to the individual characteristics
and consumption habits of consumers. In order to bridge this gap, consumers should actively respond to the social call, take part in the green consumption action, and turn their positive attitude into practical action. The improvement of the public's green consumption behavior is a key step to promote green consumption. Only by starting from everyone and attracting more people to join the ranks can a green consumption trend be formed in the whole society.

Enterprises as the producer and provider of green products, to promote green development and consumption has important social responsibility to implement green development is not only a kind of competitive strategy, but also a wise choice to realize the sustainable development of the first enterprises to establish a correct concept of green development, which layer clear itself in the greening level, coupled with green standards to carry out the green behavior, finally reach the level of the entire organization green at the same time, enterprises in the procurement of raw materials products design and production of products sales marketing waste recycling and processing of all management process should strictly comply with the green development, and follow the principle of ecological and environmental friendly. Second enterprises should be closely combined with the “4 p”theory to green development, increase in product prices channel and promotion levels consumers' environmental awareness, enhance more consumers green consumption willingness in the early part of the green product development, the enterprise needs to collect consumer products on the market demand and hope to improve environmental problems many green consumption attitude performance gap formation is the main reason why green product price is too high and poor performance, the enterprise core competitiveness to win you need to build with leading technology and price advantage of green products, but this cannot leave the enterprise investment in innovation. The improvement of the product function is not only beneficial to change consumer's attitudes towards brand, more conducive to enterprise in addition to maintain the leading position industry, advanced technology can also be compressed raw material and production cost, reduce the pollution in the process of production, thus to lower the price of green products in terms of publicity, the enterprise can by emphasizing the green value of products, green products to build good reputation, to attract more consumers good flat value is the enterprise intangible asset, and with the brand value higher green products to occupy the market gradually, will also promote the general public green consumption, forming a virtuous circle. Enterprises should adopt efficient and appropriate strategies for publicity. For example, in public occasions, enterprises should advocate altruistic strategies due to the existence of impression management motivation. In private, as a rational economic man, an enterprise should promote self-interested strategies and use descriptive normative appeals over prohibitive norms. Finally, enterprises should develop green development forecast reasonable investment, within the expected range as far as possible the implementation of substantive green consumption activity, if the expected input is not enough to support enterprises to implement substantial activity, should try to choose and corporate image of symbolic activities, deepen enterprise green image substantial activities including product driving behavior in the form of pollution prevention and environmental technology innovation activities, such as basic involving the whole process of enterprise production activities link of product research and development and technological innovation, enterprise and pollution prevention and governance activities. Large amount of investment to the enterprise of each department to cooperate with the support of the enterprise all aspects of resources, the effect is very significant, and must provide advantages for the sustainable development of the enterprise but when business is substantial activity expected the under-funded, can choose to carry out some practical significance symbolic activities, such as environmental knowledge, environmental protection, such as propaganda to participate in the activities of environmental protection, makes every effort to popularize knowledge about environmental protection in the activities of civil environmental protection consciousness, and deepen the concept of environmental protection in a business.

The government as the leader of the green consumption, is one of the main body of essential specifications green consumption market firstly, the government should implement green consumption as soon as possible the legislative work, the green consumption into the legal environment, to standardize the order of green consumption market to provide the corresponding legal basis, including
the green product certification standard system, strengthen the green certification, to help consumers identify the real green products, at the same time, the government should improve the information publicity and economic incentives, provide legal guarantee for the promotion of green consumption second government should give appropriate policies to support enterprises and consumers. The high cost and price is an important factor restricting the development of green consumption. For enterprises, the government can introduce economic incentives and tax breaks for green enterprises, provide material and technical support in the process of green research and development, and reduce the cost of green production. For consumers, the government can implement incentive strategy, increase production subsidies in the field of green consumption, and at the same time of lowering the cost of consumers to buy the long term benefit in the end, the government should strengthen the national green consumption education, make the set up green consumption idea, build the social atmosphere of environment friendly government can take advantage of the news media and network platform, actively promoting green consumption idea, to guide the whole society to establish conservation and environmental protection of our ideas about spending and good at using social norms, people in virtually the environmental friendly behavior.

6. Summary and outlook
As a new consumption mode dominated by the concept of green development, green consumption is the general trend of consumption development in the new era, which leads people to pay attention to sustainable development. Green consumption is an inevitable choice for high-quality economic development in the new era. According to the existing literature on green consumption at home and abroad, this paper combs and summarizes the related problems of green consumption, in order to provide some reference and help for further understanding of green consumption.

Existing researches have comprehensively analyzed the problems about green consumption, but there is still room for further research. First, previous studies on green consumption focused on the pre-factors of green consumption, while few studies focused on the post-results and boundary conditions of green consumption. In real life, people do not make decisions in a vacuum environment, and current decisions are likely to be influenced by past behaviors. Then, what kind of influence will the consumer's purchase of green products have on his next purchase decision? If faced with the choice of green products and ordinary products again, how will consumers make decisions? Second, the empirical analysis or empirical research on the related variables of green consumption and economic development is insufficient. Most of the existing studies on green consumption stay at the normative analysis level, with few empirical analysis, which may be related to the limited availability of relevant data in the past. Under the background of big data, the research of green consumption needs to be supplemented and deepened urgently.

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