

Research on the Influence of External Cues on Online Consumers' Green Consumption Intention in China-A Conceptual Paper

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Abstract

Purpose: The aim of this study is to construct a conceptual framework of external cues influencing Chinese online consumers' green consumption intentions, identifying the key external cues and mediating variables involved.

Design/methodology/approach: This study used the literature review and logical deduction methods to construct a conceptual framework of external cues influencing Chinese online consumers' green consumption intention.

Findings: This study constructs a conceptual framework based on the S-O-R model. It takes external cues (positive green eWOM, green certification, Country-of-origin green image, Product green information presentation formats) as the independent variable, perceived value, and perceived authenticity as the mediating variables in the framework to reflect the psychological changes of Chinese online consumers, and consumers' intention to buy as the dependent variable to indicate consumers' convergent responses.

Practical implications: The findings of this study provide valuable insights to e-commerce platforms and e-commerce sellers, enabling them to develop targeted online green marketing strategies.

Originality/value: This study identifies positive green e-word of mouth, country-of-source green image, green certification, and green product information presentation formats as external cues and identifies perceived value and perceived authenticity as mediator variables to explore the influence of multiple external cues on online consumers' willingness to consume green in China.

Keywords: Green consumption intention, Chinese online consumers, external cues

Classification: Conceptual paper

1. Introduction

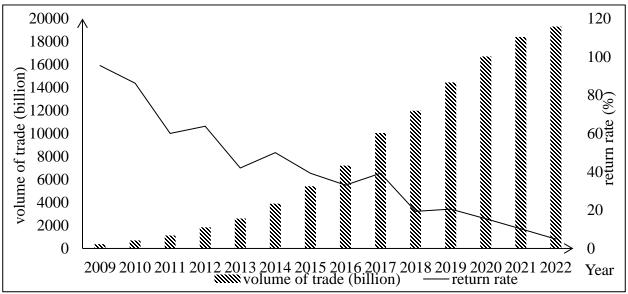
As industrialization and urbanization continue to surge, society faces mounting ecological challenges, encompassing pollution, resource depletion, and climate change (Jiang et al., 2024). These pressing global challenges have spurred the emergence of green consumption, wherein consumers are increasingly concerned about green products and services in their purchasing decisions (Sharma et al., 2022). Such choices consider not only personal benefits but also the broader impact on the environment and the well-being of future generations (Shiel et al., 2020).



Over the preceding decades, China, recognized as the world's largest emerging economy, has experienced an unparalleled surge in industrial and economic growth, albeit, regrettably, accompanied by significant environmental degradation and constraints on vital resources (Li et al., 2022; Ma and Zhu, 2024). China has issued many relevant guidelines and specific programs to promote green living among its residents in recent years (Jiang and Gao, 2023). For example, a comprehensive promotion of green transformation across all aspects of consumption, including diet, clothing, housing, and transportation, is essential (NDRC, 2022).

Green consumption represents a form of consumer behavior that is defined by its focus on conserving resources and prioritizing environmental protection. (De Silva et al., 2021; Naini et al., 2024). While green consumption alone may not offer a definitive solution to environmental problems, shifts in consumer intentions within consumption patterns are integral to the pursuit of environmental sustainability (Singh and Pandey, 2018). Consumption intention, representing a consumer's subjective determination before making consumption decisions, holds substantial predictive power for actual consumption behaviors (Tong et al., 2023).

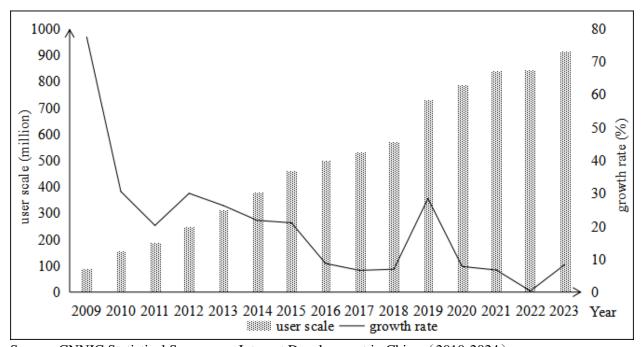
As the leading global online retail market, China's online retail sector encompasses significant economic value and immense environmental importance. Since 2009, the scale of China's e-retail transactions has been increasing annually at an average rate of 41.38%, rising from USD 37.59 billion to an astonishing USD 1,929.942 billion in 2022 (Figure 1). The scale of China's online shopper base has expanded from 89 million in 2009 to 884 million in 2023, showcasing the market's enormous potential (Figure 2).



Source: China Statistical Yearbook (2010-2023)

Figure 1 China E-tailing Market Size and Growth Rate (2009-2022)





Source: CNNIC Statistical Surveys on Internet Development in China (2010-2024)

Figure 2 China online shopping user scale and Growth rate (2009-2023)

The concept of "green consumption" was originally introduced by the International Organization of Consumers (IOGC) in 1963, where it was framed within the context of consumers' environmental responsibility. This approach to consumption involves steering clear of products that cause environmental harm during their production, use, and disposal (Elkington and Hailes, 1988). It centers on the principles of resource conservation and environmental stewardship (Yan et al., 2021).

The convenience, extensive product range, and efficient logistics of e-commerce platforms lead 60.78% of Chinese consumers to prefer purchasing low-carbon products from platforms like Jingdong, Taobao, and Jinduoduo, significantly outnumbering traditional retail and social e-commerce platforms (Syntao, 2023). The growing dominance of e-commerce in consumer goods sales increasingly prompts a critical assessment of its green impacts (Kabaja et al., 2023).

In China's e-commerce retail market, green consumption still faces a series of significant obstacles (MOFCOM, 2023). These barriers include limited consumer awareness of green products (CCICED, 2023), insufficient available information on green practices (iRsearch, 2023), and potentially higher costs associated with green goods (Huang et al., 2023). The level of green consumption awareness among Chinese online shoppers remains an area that requires significant improvement (MOFCOM, 2023). While the general public's awareness hovers around 50%, there is ample room for enhancement, particularly compared to the well-established eco-conscious consumer markets in Europe and the United States (Gao et al., 2022).

Additionally, the fragmented nature of China's green standard certification system adds complexity to the expansion of green consumption in this rapidly developing market (Jiang and Gao, 2023). The "2023 China Sustainable Consumption Report" shows that "it is difficult to recognize whether a product is green or not" "the price is high," and "the choices of green products are limited" are the main reasons why Chinese consumers have not bought green products in the past two years (Syntao, 2023).



To address this, this research constructs a conceptual framework to explore how external cues influence Chinese online consumers' green consumption intentions, particularly within China's rapidly expanding e-commerce context. The research is based on the Stimulus-Organism-Response (S-O-R) model, selected for its effectiveness in revealing the psychological processes that drive consumer behavior, influencing green consumption intentions. Consumers rely on externalc cues as internal cues are not fully available in online shopping (Fei et al., 2021). Therefore, this study focuses on the influence of external cues. Based on the cues utilization theory, external cues are cues that do not belong to the product itself (Kukar-Kinney & Xia, 2017; L. Li et al., 2020). This study focuses on the effects of external cues such as positive green electronic word of mouth (eWOM), country-of-origin green image, and product green information presentation formats on Chinese online Consumers' green consumption intention.

2. Literature Review

2.1 Green consumption intention

Green consumer behavior is defined as consumers' choices, preferences, purchase intentions, and willingness to buy products that are environmentally beneficial throughout their life cycle, or that mitigate environmental harm and reduce resource usage, as described by Tang et al. (2023). Additionally, it encompasses consumers' willingness to recommend such products to others (Tang et al., 2023).

Academics have extensively explored the antecedent variables of green consumption willingness, mainly including the following ideas: first, portraying the characteristics of green consumers and exploring the psychological path of green consumption willingness formation (Barbarossa and De Pelsmacker, 2016; Confente et al., 2020; Dixon and Mikolon, 2021). Secondly, consumers are refined based on individual characteristics, and corporate marketing and social marketing strategies that can drive green consumption behavior are discussed (Costa Pinto et al., 2014; Sun et al., 2019; Wang et al., 2021). Third, some scholars explore the impacts of social norms (Roh et al., 2022), eco-labeling (Dekhili and Nguyen, 2021), media and advertisements (Testa et al., 2021; Zhao et al., 2024), environment (Chen and Lee, 2015).

2.2 Country-of-origin image

Country-of-origin image is defined as the perception or stereotype that consumers have in mind about products from a specific country. The country-of-origin image of a brand contributes to the positive or negative perception toward the brand (Roth and Romeo, 1992). For instance, products from developed countries are perceived to be of high quality, while those from developing countries are perceived to be of low quality (Lee and Nguyen, 2017). The stereotypes about foreign products are more likely to arise when the product is culturally distinct and involves a high level of consumer engagement (Luis-Alberto et al., 2021; Septianto et al., 2020). Therefore, country-of-origin image can influence consumer behavioral intentions (Souiden et al., 2020).

Consumers in developed and developing countries have different perceptions of product origin (Rashid and Byun, 2018). Consumers in developed countries often favor domestic products, driven by a belief in the superior quality of their country's goods and influenced by emotional factors such as national pride and ethnocentrism (Auger et al., 2010).

However, consumers in developing countries tend to favor imported green products over local equivalents (Cakici and Shukla, 2017; Maruyama and Wu, 2014). Their preference is influenced more by personal factors such as income, gender, and product familiarity rather than emotional factors such as national pride or ethnocentrism (Achabou et al., 2023), which are more prevalent



among consumers in developed countries. This distinction underscores the complexity and variability of consumer behavior based on product origin and ecological considerations across different global contexts (Achabou et al., 2023).

2.3 Electronic word of mouth

Many scholars have carried out eWOM research, mainly focusing on the following aspects. The first aspect is the perspective of the disseminator of eWOM information. The credibility, relationship strength, and homogeneity of eWOM information sources affect the usefulness and attitudes of consumers to eWOM (Hussain et al., 2017; Kim et al., 2018). At the same time, Attribution Theory mediates the impact of review valence on perceived credibility (Chiou et al., 2018; Remeir and Benkenstein, 2018). An important factor affecting eWOM communicators' credibility is the motivational attribution of the releasing information (Lee and Youn, 2009). Secondly, the impact of the characteristics of eWOM contents on recipients. The attributes of

Secondly, the impact of the characteristics of eWOM contents on recipients. The attributes of eWOM contents mainly include information quality, eWOM valence, completeness, and quantity (Nieto et al., 2017). The quality of eWOM has an essential impact on the usefulness of information (Jimenez and Mendoza, 2013; Jyh-Shen et al., 2018). The valence of eWOM significantly affects consumers' perceived reliability and willingness to shop (Lin and Xu, 2017). Still, the influence of the number of eWOM on sales is higher than eWOM valence (Rosario et al., 2016).

Thirdly, the degree of response of recipients to eWOM will vary due to individual differences. Individuals' involvement in the product, their level of knowledge, the homogeneity between the senders and receivers, and the strength of the social relationship between the eWOM receiver and the senders will all have an impact on the effect of eWOM (Teng et al., 2014).

2.4 Green certification

Green certification, a pivotal strategy for sustainable development, has gained prominence as governments around the world emphasize green practices (Fan et al., 2022; Pretner et al., 2021). With a growing awareness of health and environmental concerns, consumers prefer products with green certification (Delmas and Gergaud, 2021). Many countries have implemented green certification programs to assist consumers in making informed, environmentally responsible choices, ensuring product quality and environmental friendliness (Luca et al., 2018). These programs also encourage corporate engagement in green product innovation (Shamsi and Siddiqui, 2017; Karthik et al., 2018).

Globally, there are over 460 green product labels related to green certification exist globally (Yokessa and Marette, 2019). Some of the government-supported entities are as follows: f the US Green Seal Certification, the EU Ecolabelling Committee, and Germany's Blue Angel Ecolabel (Gao et al., 2020). Green certification is crucial not only for promoting healthy, eco-friendly consumer choices (Wong & Lai, 2024) but also for preventing negative ecological and health impacts that can arise from non-compliant practices (Sarah, 2020). Green certification positively influences sales and facilitates the marketing of certified products (Li & He, 2024). Thus, green certification is crucial for bridging green production and consumption.

2.5 Product green information presentation formats

How product details are shown on platforms like social media and websites is known as product information presentation (Fan et al., 2024). In the same way, green information presentation focuses on how environmentally related product details are displayed online. In online retail, displaying products effectively entices consumers to visit the website and helps them make



purchasing decisions without physically interacting with the product (Purohit and Srivastava, 2001; Yoo and Kim, 2014). With the advancement of technology, online product information presentation can be presented using a variety of methods, mainly short video messages (Petit et al., 2019), image and text messages (Li et al., 2016), real-time video displays, etc.

The environmental characteristics highlighted in product display details, such as images on e-commerce platforms, have increasingly become a key element in boosting consumers' consumption intention (Ma et al., 2022). expanding the section dedicated to green information on the sales page and presenting details about the product's green production process through videos, images, and other visual means can effectively communicate these attributes to consumers (Roy et al., 2019). For products that are widely sold, sellers should focus on enhancing the depth and variety of green information presented on the product detail pages of e-commerce websites (Wu et al., 2024). Live streaming, as a video and audio form of product green information presentation, not only dynamically displays the green information of products, but also socially influences people's psychological behaviors, which promotes green consumption decisions in different categories displayed in live streaming (Huo et al., 2024). Compared with textual and pictorial information, live streaming provides an immediate display of product information, thus effectively conveying the green message of the product (Wu et al., 2024).

2.6 Perceived authenticity

Authenticity, meaning 'original' and 'real,' was first used in the museum, but there is no academic consensus on its connotations. Grayson et al. (2014) argue that authenticity consists of the following two types: indexical authenticity and iconographic authenticity. Authenticity encompasses both the objective properties of an item and the subjective evaluation of an item by an individual in a given situation (Kumar and Kaushal, 2021). Perceived authenticity, as mentioned in this study, refers to the consumer's subjective perception of a product or service in a particular problem.

So far, some scholars have focused their research on perceived green product authenticity, and the academic community has yet to arrive at a unified definition of the concept of perceived green authenticity (Le et al., 2022). Green product authenticity into the following two parts (Wang et al., 2023): first, objective authenticity, i.e., the actions of green products confer authenticity to their promises; second, constructed authenticity, i.e., the subjective judgment of consumers on whether the actual actions deliver on their promises, during which consumers can initially process information based on the information material they have, which inevitably carries their subjective colors (Pelet et al., 2020).

2.7 Perceived value

Perceived value has been a focal point of extensive research due to its widely acknowledged role as the primary determinant of consumers' purchase intentions (Khan and Mohsin, 2017). The concept of perceived value was initially introduced by Zeithaml (1988), who posited that it constitutes consumers' comprehensive evaluation of the equilibrium between the benefits and sacrifices associated with a product. Woodruff (1997) further refined this concept, defining perceived value as consumers' preferences and assessments of product attributes and performance. On the other hand, green perceived value extends this notion to encompass consumers' holistic evaluation of the balance between what they invest and gain from a product or service, considering their environmental goals, sustainability standards, and preference for green alternatives (Ariffin et al., 2016; Chen and Chang, 2012). As consumers are inherently value-driven, perceived value



shapes their purchase intentions. Understanding its role, businesses focus on enhancing perceived value as a key factor in shaping purchase intentions (Zhang et al., 2021).

2.8 Gaps in previous studies

Previous research studies have examined the antecedents of green consumption intention, particularly individual statistical characteristics, psychological mechanisms, and situational factors. Since online consumers heavily rely on external cues when making consumption decisions (Mavlanova et al., 2016), scholars have also carried out discussions in the green consumption research area, such as eWOM (Jaini et al., 2020), green certifications (Wang et al., 2018), country-of-origin image (Achabou et al., 2023), and information presentations (Chen et al., 2024).

Despite the rapid expansion of e-commerce in China, research on what drives the green consumption intentions of Chinese online consumers remains limited, indicating a need for further investigation. In response to this, this study combines the S-O-R model to explore how external cues like positive green electronic word of mouth, green certification, country of origin green image, and product green information presentation formats influence the green consumption intentions of online consumers in China's e-commerce space.

3. Research Framework

The S-O-R model is a classic model of responsive consumer behavior (Mehrahian and Russell, 1974). This model provides a theoretical way for understanding how environmental stimuli evoke internal psychological states, subsequently driving behavioral outcomes. This study establishes a conceptual framework grounded in the S-O-R model to investigate the green consumption intentions of Chinese online consumers.

Within this framework, external cues are designated as the Stimulus (S). These external cues serve as the initial triggers that influence consumers' psychological processes. The study's external cues contain positive green eWOM, green certification, country-of-origin green image, and product green information presentation formats.

The framework's Organism (O) component is represented by perceived value and perceived authenticity. These mediating variables encapsulate consumers' internal cognitive and affective responses, reflecting their processing and interpretation of the external cues provided.

In this framework, online consumers' green consumption is behavior Response (R). This dependent variable signifies the consumers' resultant behavioral intention, indicating the extent to which the stimuli, mediated through perceived value and authenticity, culminate in green consumption intention.



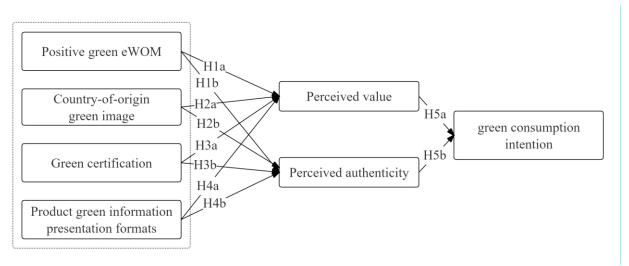


Figure 3 Proposed Research Framework

4. Development of Hypotheses

4.1 Impact of Positive Green eWOM on Perceived Value

Consumers are increasingly inclined to seek out objective information through eWOM (Filieri, 2015). Green Ewom is an evaluation from a consumer or user group. It is often seen as a credible source of information without conflict of interest (D'Acunto et al., 2024). Positive green eWOM is an external stimulus by providing information highlighting a green product's attributes (D'Acunto et al., 2024).

User-generated content is more trusted by consumers, making it a powerful cue in shaping their perceptions (Al-Gasawneh and Al-Adamat, 2020). Green goods' unique green value is also readily appreciated by consumers, who will be more likely to understand and accept the eWOM they receive (Alnoor et al., 2022). Therefore, hypotheses related to positive green eWOM and perceived value and are proposed.

H1a: Positive green eWOM has a significant positive effect on perceived value.

4.2 Impact of Positive Green eWOM on Perceived Authenticity

In this conceptual framework, positive green eWOM is identified as the stimulus, acting as an external cue that provides consumer-generated information, which plays a key role in shaping consumers' perceptions of authenticity (Le et al., 2022). The credibility of this source largely removes consumer skepticism about a company's marketing message and enhances its perceived authenticity.

Positive eWOM serves as social proof that accumulates a large amount of consistent positive feedback (Amblee and Bui, 2011). When consumers from the same source post consistently positive evaluations of a product's green attributes, other potential consumers believed that the product meets its green promises (D'Acunto et al., 2023), which may affect the perceived authenticity of the consumers.



Finally, the response is reflected in consumers' intention to purchase, which is shaped by the stimuli through the mediating effect of perceived authenticity. Therefore, hypotheses related to positive green eWOM and perceived authenticity.

H1b: Positive green eWOM has a significant positive effect on perceived authenticity.

4.3 The effect of Country-of-origin green image on perceived value

Country-of-origin image refers to a broad perception or stereotype that consumers hold about a nation, which significantly shapes their purchasing decisions (Kim et al., 2017). Consumers' perception of a country's image depends on their understanding of its economic, political, and environmental practices (Renko et al., 2017). Country-of-origin image provides a clue for consumers to evaluate green products. Consumers can judge the country-of-origin green image to evaluate the value of green products from this country (Chan, 2000).

Consumer perceptions of green products are closely related to their experiences and understanding of the country-of-origin green image (El Moussawel and Dekhili, 2019). Due to the frequent skepticism surrounding green product claims, especially in e-commerce, the country-of-origin green image becomes important in influencing perceived value.

H2a: Country-of-origin green image has a significant positive effect on perceived value.

4.4 The effect of Country-of-origin green image on perceived authenticity

The country-of-origin green image reflects consumers' overall perception of a nation regarding environmental protection and sustainable development, encompassing various dimensions such as policy attributes, social characteristics, and green product features (Dekhili et al., 2021). This perception serves as an informational cue that affects how consumers determine a product's attributes is the authenticity. Perceived authenticity is the subjective assessment of truthfulness and reliability (Liang et al., 2018). When selecting a product, consumers often use the country-of-origin image to indicate its authenticity (Zhang and Merunka, 2015). The green image associated with a country can significantly influence consumers' trust in the environmental claims made by its products (Hsu et al., 2017).

A positive country-of-origin green image can shape consumers' internal responses, leading them to view the green claims of products from that country as more credible (Götze and Brunner, 2020). This connection exists because a country's green image is often tied to sustainable development policies, environmental regulations, and product quality standards (Dekhili et al., 2021).

H2b: Country-of-origin green image has a significant positive effect on perceived authenticity.

4.5 The impact of green certification on perceived value

Green certification is the recognition of a company's green practices by a third-party organization (Chi et al., 2022). Products with green certifications also tell consumers that a third-party organization has recognized the product's green features. Consumers may be more likely to trust information from independent and reliable organizations rather than in-house information (Wang et al., 2018). Green certification can reduce consumer concerns and increase the product's perceived value (Torma and Thøgersen, 2024). For instance, Chinese consumers perceive beef with green certifications to be of higher value and are more likely to pay extra for it (Fu et al.,



2024). Green certification marks help consumers make environmentally responsible choices (Zhou et al., 2023).

Consumers rely on extrinsic cues as intrinsic cues are not fully available in online shopping. As an extrinsic cue, green certification is online objective information about the characteristics of products displayed by online sellers, which impacts online consumers' internal assessment, particularly their perceived product value. These internal assessments shape their behavioral intention, specifically their intention to purchase green products.

H3a: Green certification has a significant positive effect on consumers' perceived value.

4.6 The impact of green certification on perceived authenticity

As an important external cue, green certificates are issued by authoritative third-party organizations and can provide consumers with reliable information about the environmental performance of products (Wong and Lai, 2024). In cases where a product's green attributes are difficult to assess directly, consumers tend to rely on green certifications to determine the product's authenticity (Velasco et al., 2024). This reliance triggers internal processes, where green certification reduces the uncertainty caused by information asymmetry and enhances consumers' trust in the product's authenticity (Mota-Gutierrez et al., 2024).

Although consumers have varying degrees of trust and willingness to purchase products with or without the green mark, this leads to consumers still having doubts about green certifications that a third party does not recognize, as some companies will use green statements of doubtful authenticity (Oh et al., 2020), or due to the unstandardized process of issuing green certificates by some organizations, which leads to consumers believing that green certification issued by some organizations. For example, authoritative green certification can change consumers' psychological perceptions and increase their desire to buy green appliances (Harun et al., 2022).

H3b: Green certification has a significant positive effect on consumers' perceived authenticity.

4.7 The Effect of Product Green Information Presentation formats on Perceived Value

Product information presentation is a way for sellers to communicate the information about a product online, presented in one or more of the following fomats: text-based, image-based, video-based, and so on (Fan et al., 2024). Effective product presentation can attract buyers' attention and speed up sellers' information processing (Cheng & Zhang, 2023). When the same physical products are presented in different ways or with different information richness, consumers' perception of product attributes is different (Wang et al., 2016).

The richness of product information presentation affects consumers' engagement behavior (Choi et al., 2019). Product green information is part of green product information. The richness of its presentation may also be the consumer's perceived value.

H4a: Richness of product green information presentation formats has a significant positive effect on consumers' perceived value.

4.8 The Effect of Product Green Information Presentation formats on Perceived Authenticity With the progress of technology, there are more and more forms of online product information display, such as text, image, live broadcast and so on (Chesney et al., 2017). When online product



images were presented alongside structured textual information, online shoppers remembered the information better and perceived it as easier to memorize, thus improving the perceived authenticity of the information (Blanco et al., 2010).

E-commerce platforms that incorporate diverse product presentation techniques and feature high-caliber online reviews are more likely to enhance consumers' perceptions of the reliability of organic food information (Yue et al., 2017). The different product green information presentation formats can influence consumers' perceived authenticity level of green product information (Zhang et al., 2020).

H4b: Richness of product green information presentation formats has a significant positive effect on consumers' perceived authenticity.

4.9 The influence of Perceived Value on Green Consumption Intention

Perceived value is defined as the consumer's assessment of the benefits and quality of a product in relation to its cost (Ng et al., 2024), and directly affects their online consumption intention (Zhang et al., 2021). Perceived value mainly includes economic, social, functional and social dimensions. (Nguyen et al., 2024).

For example, diffrent dimmensions of green perceived value helps to increase consumers' green consumption intention (Roh et al., 2022). Perceived functional value is an important factor affecting consumers' purchase intention of green cosmetics (Suphasomboon & Vassanadumrongdee, 2022). Perceived value is an influential factor that causes Chinese millennial consumers to purchase new energy vehicles (Lv et al., 2024).

H5a: Perceived value has a significant positive effect on green consumption intention.

4.10 The Effect of Perceived Authenticity on Green Consumption Intention

Since green product information, such as green certification and geographical indications, still needs to be standardized in China, and some merchants use false information, consumers have doubts about the authenticity of green product attributes. Meanwhile, consumers usually perceive the authenticity of product attributes based on the clues they receive, and the level of perceived authenticity directly affects their purchase intention (Das et al., 2022a; Guo et al., 2024).

In online shopping, where consumers cannot physically interact with product attributes and functions, the degree of perceived authenticity becomes a significant determinant of their purchase intentions (Pelet et al., 2020). Thus, online consumers' higher perceived authenticity of a product's green attributes will also generate higher green purchase intention. Within this framework, perceived authenticity functions as a key internal factor, influencing how consumers evaluate the credibility of green product attributes, affecting their purchase intentions.

H5b: Perceived authenticity has a significant positive effect on green consumption intention.

5. Method

This study employs a literature review and theoretical integration method to construct a conceptual framework exploring the impact of external cues on the intentions of Chinese consumers to consume green online. The study identified relevant literature by searching academic databases including Web of Science, Scopus and Science Direct. Literature related to green consumption



intention, electronic word-of-mouth (e-WOM), country-of-origin image, green certification, green product information display formats, perceived value, and perceived authenticity were highlighted for search and analysis.

Then this study employs the S-O-R model to build a conceptual model suitable for China's e-commerce scenario. Finally, this study analyzes the literature in conjunction with the literature and proposes some hypotheses. These hypotheses are intended to guide future empirical research and encourage empirical studies to test and refine the proposed conceptual framework.

6. Conclusion

By employing the S-O-R model, this study develops a conceptual framework to investigate the possibility that external cues such as positive green eWOM, country-of-origin green image, certifications, and green information display formats of products influence consumers' perceived value and authenticity, and thus their intention to engage in green practices. The study provides valuable insights into green consumer behavior in the online marketplace and lays the groundwork for future empirical research to investigate the possibility of external cues contributing to online green consumer intentions.

References

- Achabou, M. A., Dekhili, S., and Hamdoun, M. (2023). How the country of origin cue affects consumer preference in the case of ecological products: an empirical study in two developing countries. Journal of Strategic Marketing, 31(4), 877–893. https://doi.org/10.1080/0965254X.2021.2004207
- Amblee, N., and Bui, T. (2011). Harnessing the Influence of Social Proof in Online Shopping: The Effect of Electronic Word of Mouth on Sales of Digital Microproducts. International Journal of Electronic Commerce, 16(2), 91–113. https://doi.org/10.2753/JEC1086-4415160205
- Ariffin, S., Yusof, J. M., Putit, L., and Shah, M. I. A. (2016). Factors Influencing Perceived Quality and Repurchase Intention Towards Green Products. Procedia Economics and Finance, 37, 391–396. https://doi.org/10.1016/S2212-5671(16)30142-3
- Barbarossa, C., and De Pelsmacker, P. (2016). Positive and Negative Antecedents of Purchasing Eco-friendly Products: A Comparison Between Green and Non-green Consumers. Journal of Business Ethics, 134(2), 229–247. https://doi.org/10.1007/S10551-014-2425-Z/TABLES/7
- Blanco, C. F., Sarasa, R. G., and Sanclemente, C. O. (2010). Effects of visual and textual information in online product presentations: looking for the best combination in website design. European Journal of Information Systems, 19(6), 668–686. https://doi.org/10.1057/EJIS.2010.42
- Cakici, N. M., and Shukla, P. (2017). Country-of-origin misclassification awareness and consumers' behavioral intentions: Moderating roles of consumer affinity, animosity, and product knowledge. International Marketing Review, 34(3), 354–376. https://doi.org/10.1108/IMR-08-2015-0178/FULL/XML
- CCICED. (2023). Green Transition and Sustainable Social Governance. Green Recovery with Resilience and High Quality Development, 217–289. https://doi.org/10.1007/978-981-19-9470-8 5
- Chen, L., Haider, M. J., and He, J. (2024). Should "green information" be interactive? The influence of green information presentation on consumers' green participation behavior for driving sustainable consumption of fashion brands. Journal of Cleaner Production, 470, 143329. https://doi.org/10.1016/J.JCLEPRO.2024.143329



- Chen, Y. S., and Chang, C. H. (2012). Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. Management Decision, 50(3), 502–520. https://doi.org/10.1108/00251741211216250/FULL/PDF
- Chen, Y., Tong, X., Yang, S., and Zhou, S. (2023). Effects of intrinsic and extrinsic cues on customer behavior in live streaming: evidence from an eye-tracking experiment. Industrial Management and Data Systems, 123(9), 2397–2422. https://doi.org/10.1108/IMDS-10-2022-0606/FULL/XML
- Chesney, T., Chuah, S. H., Dobele, A. R., and Hoffmann, R. (2017). Information richness and trust in v-commerce: implications for services marketing. Journal of Services Marketing, 31(3), 295–307. https://doi.org/10.1108/JSM-02-2015-0099/FULL/XML
- Chi, C. G., Chi, O. H., Xu, X., & Kennedy, I. (2022). Narrowing the intention-behavior gap: The impact of hotel green certification. International Journal of Hospitality Management, 107, 103305. https://doi.org/10.1016/J.IJHM.2022.103305
- Chi, N. T. K. (2021). Understanding the effects of eco-label, eco-brand, and social media on green consumption intention in ecotourism destinations. Journal of Cleaner Production, 321, 128995. https://doi.org/10.1016/J.JCLEPRO.2021.128995
- Confente, I., Scarpi, D., and Russo, I. (2020). Marketing a new generation of bio-plastics products for a circular economy: The role of green self-identity, self-congruity, and perceived value. Journal of Business Research, 112, 431–439. https://doi.org/10.1016/J.JBUSRES.2019.10.030
- Costa Pinto, D., Herter, M. M., Rossi, P., and Borges, A. (2014). Going green for self or for others? Gender and identity salience effects on sustainable consumption. International Journal of Consumer Studies, 38(5), 540–549. https://doi.org/10.1111/IJCS.12114
- D'Acunto, D., Filieri, R., and Amato, S. (2023). Hotels' environmentally-framed eWOM. The moderating role of environmental culture. Tourism Management, 98, 104776. https://doi.org/10.1016/J.TOURMAN.2023.104776
- D'Acunto, D., Filieri, R., and Amato, S. (2024). Who is sharing green eWOM? Big data evidence from the travel and tourism industry. Journal of Sustainable Tourism. https://doi.org/10.1080/09669582.2024.2328103
- De Silva, M., Wang, P., and Kuah, A. T. H. (2021). Why wouldn't green appeal drive purchase intention? Moderation effects of consumption values in the UK and China. Journal of Business Research, 122, 713–724. https://doi.org/10.1016/J.JBUSRES.2020.01.016
- Dekhili, S., Crouch, R., and El Moussawel, O. (2021). The relevance of geographic origin in sustainability challenge: the facets of country ecological image. Journal of Consumer Marketing, 38(6), 664–678. https://doi.org/10.1108/JCM-05-2020-3797/FULL/PDF
- Dekhili, S., and Nguyen, T. P. (2021). Green consumption in Vietnam: Effects of eco-certification, brand, and moderate incongruity of their origins on purchase intent. Recherche et Applications En Marketing, 36(3), 25–49. https://doi.org/10.1177/2051570720984158/ASSET/IMAGES/10.1177_2051570720984158-IMG8.PNG
- Delmas, M. A., and Gergaud, O. (2021). Sustainable practices and product quality: Is there value in eco-label certification? The case of wine. Ecological Economics, 183, 106953. https://doi.org/10.1016/J.ECOLECON.2021.106953
- Cheng, P., & Zhang, C. (2023). Show me insides: Investigating the influences of product exploded view on consumers' mental imagery, comprehension, attitude, and purchase intention.



- Journal of Retailing and Consumer Services, 70, 103168. https://doi.org/10.1016/J.JRETCONSER.2022.103168
- Choi, N. H., Wang, J., & Chen, C. (2019). Brand Public Benefits and Consumer Engagement. The Journal of Asian Finance, Economics and Business, 6(2), 147–160. https://doi.org/10.13106/JAFEB.2019.VOL6.NO2.147
- Dixon, D., and Mikolon, S. (2021). Cents of self: How and when self-signals influence consumer value derived from choices of green products. International Journal of Research in Marketing, 38(2), 365–386. https://doi.org/10.1016/J.IJRESMAR.2020.08.002
- Fan, L., Wang, Y., & Mou, J. (2024). Enjoy to read and enjoy to shop: An investigation on the impact of product information presentation on purchase intention in digital content marketing. Journal of Retailing and Consumer Services, 76, 103594. https://doi.org/10.1016/J.JRETCONSER.2023.103594
- Fan, Y., Ren, M., Zhang, J., Wang, N., and Zhang, C. (2022). Risk identification and assessment on green product certification Model construction and empirical analysis. Journal of Cleaner Production, 370, 133593. https://doi.org/10.1016/J.JCLEPRO.2022.133593
- Fei, M., Tan, H., Peng, X., Wang, Q., and Wang, L. (2021). Promoting or attenuating? An eye-tracking study on the role of social cues in e-commerce livestreaming. Decision Support Systems, 142, 113466. https://doi.org/10.1016/J.DSS.2020.113466
- Fu, R., Li, C., Wang, L., and Gao, Z. (2024). Chinese consumer preference for beef with geographical indications and other attributes. Meat Science, 212, 109475. https://doi.org/10.1016/J.MEATSCI.2024.109475
- Godfrey, D. M., Price, L. L., and Lusch, R. F. (2022). Repair, Consumption, and Sustainability: Fixing Fragile Objects and Maintaining Consumer Practices. Journal of Consumer Research, 49(2), 229–251. https://doi.org/10.1093/JCR/UCAB067
- Götze, F., and Brunner, T. A. (2020). Sustainability and country-of-origin: How much do they matter to consumers in Switzerland? British Food Journal, 122(1), 291–308. https://doi.org/10.1108/BFJ-06-2018-0401/FULL/PDF
- Hsu, C. L., Chang, C. Y., and Yansritakul, C. (2017). Exploring purchase intention of green skincare products using the theory of planned behavior: Testing the moderating effects of country of origin and price sensitivity. Journal of Retailing and Consumer Services, 34, 145–152. https://doi.org/10.1016/J.JRETCONSER.2016.10.006
- Huang, H., Long, R., Chen, H., Sun, K., Sun, Q., and Li, Q. (2023). Why don't more people engage in green practices in China? A policy-oriented approach to promoting green transformation in five consumption areas. Environmental Impact Assessment Review, 101, 107099. https://doi.org/10.1016/J.EIAR.2023.107099
- iRsearch. (2023, May 13). China Consumer Insights White Paper 2023. https://report.iresearch.cn/report_pdf.aspx?id=4181
- Jaini, A., Quoquab, F., Mohammad, J., and Hussin, N. (2020). "I buy green products, do you...?": The moderating effect of eWOM on green purchase behavior in Malaysian cosmetics industry. International Journal of Pharmaceutical and Healthcare Marketing, 14(1), 89–112. https://doi.org/10.1108/IJPHM-02-2019-0017/FULL/XML
- Jiang, Z., and Gao, X. (2023). Text mining and quantitative evaluation of China's green consumption policies based on green consumption objects. Environment, Development and Sustainability, 1–22. https://doi.org/10.1007/S10668-023-02976-W/METRICS



- Koschate-Fischer, N., Diamantopoulos, A., and Oldenkotte, K. (2012). Are Consumers Really Willing to Pay More for a Favorable Country Image? A Study of Country-of-Origin Effects on Willingness to Pay. https://doi.org/10.1509/JIM.10.0140
- Kukar-Kinney, M., & Xia, L. (2017). The effectiveness of number of deals purchased in influencing consumers' response to daily deal promotions: A cue utilization approach. Journal of Business Research, 79, 189–197. https://doi.org/10.1016/J.JBUSRES.2017.06.012
- Kumar, V., and Kaushal, V. (2021). Perceived brand authenticity and social exclusion as drivers of psychological brand ownership. Journal of Retailing and Consumer Services, 61, 102579. https://doi.org/10.1016/J.JRETCONSER.2021.102579
- Le, T. H., Arcodia, C., Novais, M. A., and Kralj, A. (2022). How consumers perceive authenticity in restaurants: A study of online reviews. International Journal of Hospitality Management, 100, 103102. https://doi.org/10.1016/J.IJHM.2021.103102
- Lee, J., and Nguyen, M. J. (2017). Product attributes and preference for foreign brands among Vietnamese consumers. Journal of Retailing and Consumer Services, 35, 76–83. https://doi.org/10.1016/j.jretconser.2016.12.001
- Li, L., Guo, S., Cai, H., Wang, J., Zhang, J., & Ni, Y. (2020). Can China's BEV market sustain without government subsidies?: An explanation using cues utilization theory. Journal of Cleaner Production, 272, 122589.
- Li, X., Hu, Z., Cao, J., and Xu, X. (2022). The impact of environmental accountability on air pollution: A public attention perspective. Energy Policy, 161, 112733. https://doi.org/10.1016/J.ENPOL.2021.112733
- Liang, L. J., Choi, H. C., and Joppe, M. (2018). Understanding repurchase intention of Airbnb consumers: perceived authenticity, electronic word-of-mouth, and price sensitivity. Journal of Travel and Tourism Marketing, 35(1), 73–89. https://doi.org/10.1080/10548408.2016.1224750
- Litvin, S. W., Goldsmith, R. E., and Pan, B. (2008). Electronic word-of-mouth in hospitality and tourism management. Tourism Management, 29(3), 458–468. https://doi.org/10.1016/J.TOURMAN.2007.05.011
- Li, X., & He, J. (2024). Evolutionary mechanism of green product certification behavior in cement enterprises: A perspective of herd behavior. Environmental Technology & Innovation, 33, 103508. https://doi.org/10.1016/J.ETI.2023.103508
- Liu, X., Sun, T., and Feng, Q. (2020). Dynamic spatial spillover effect of urbanization on environmental pollution in China considering the inertia characteristics of environmental pollution. Sustainable Cities and Society, 53, 101903. https://doi.org/10.1016/J.SCS.2019.101903
- Luis-Alberto, C. A., Angelika, D., and Juan, S. F. (2021). Looking at the brain: Neural effects of "made in" labeling on product value and choice. Journal of Retailing and Consumer Services, 60, 102452. https://doi.org/10.1016/J.JRETCONSER.2021.102452
- Lv, Z., Zhao, W., Liu, Y., Wu, J., & Hou, M. (2024). Impact of perceived value, positive emotion, product coolness and Mianzi on new energy vehicle purchase intention. Journal of Retailing and Consumer Services, 76, 103564. https://doi.org/10.1016/J.JRETCONSER.2023.103564
- Ma, D., and Zhu, Y. (2024). The impact of economic uncertainty on carbon emission: Evidence from China. Renewable and Sustainable Energy Reviews, 191, 114230. https://doi.org/10.1016/J.RSER.2023.114230
- Marcon, A., Ribeiro, J. L. D., Dangelico, R. M., de Medeiros, J. F., and Marcon, É. (2022). Exploring green product attributes and their effect on consumer behaviour: A systematic



- review. Sustainable Production and Consumption, 32, 76–91. https://doi.org/10.1016/J.SPC.2022.04.012
- Maruyama, M., and Wu, L. (2014). The relevance of retailer country-of-origin to consumer store choice: Evidence from China. International Marketing Review, 31(5), 462–476. https://doi.org/10.1108/IMR-03-2013-0060/FULL/XML
- Mavlanova, T., Benbunan-Fich, R., and Lang, G. (2016). The role of external and internal signals in E-commerce. Decision Support Systems, 87, 59–68. https://doi.org/10.1016/J.DSS.2016.04.009
- MOFCOM. (2023). 2022 E-commerce in China Report(in Chinese). http://dzsws.mofcom.gov.cn/article/ztxx/ndbg/202306/20230603415404.shtml
- Mota-Gutierrez, J., Sparacino, A., Merlino, V. M., Blanc, S., Brun, F., Massimelli, F., Vassallo, E., Borra, D., and Massaglia, S. (2024). Socio-demographic and cross-country differences in attention to sustainable certifications and changes in food consumption. Npj Science of Food 2024 8:1, 8(1), 1–13. https://doi.org/10.1038/s41538-024-00274-x
- Naini, S. R., Mekapothula, R. R., Jain, R., and Manohar, S. (2024). Redefining green consumerism: a diminutive approach to market segmentation for sustainability. Environmental Science and Pollution Research 2024, 1–17. https://doi.org/10.1007/S11356-023-31717-9
- Ng, P. M. L., Cheung, C. T. Y., Lit, K. K., Wan, C., and Choy, E. T. K. (2023). Green consumption and sustainable development: The effects of perceived values and motivation types on green purchase intention. Business Strategy and the Environment. https://doi.org/10.1002/bse.3535
- Nguyen, X. H., Nguyen, T. T., Anh Dang, T. H., Dat Ngo, T., Nguyen, T. M., and Anh Vu, T. K. (2024). The influence of electronic word of mouth and perceived value on green purchase intention in Vietnam. Cogent Business and Management, 11(1). https://doi.org/10.1080/23311975.2023.2292797
- Pelet, J. É., Durrieu, F., and Lick, E. (2020). Label design of wines sold online: Effects of perceived authenticity on purchase intentions. Journal of Retailing and Consumer Services, 55, 102087. https://doi.org/10.1016/J.JRETCONSER.2020.102087
- Pretner, G., Darnall, N., Testa, F., and Iraldo, F. (2021). Are consumers willing to pay for circular products? The role of recycled and second-hand attributes, messaging, and third-party certification. Resources, Conservation and Recycling, 175, 105888. https://doi.org/10.1016/J.RESCONREC.2021.105888
- Rashid, M. S., and Byun, S. E. (2018). Are consumers willing to go the extra mile for fair trade products made in a developing country? A comparison with made in USA products at different prices. Journal of Retailing and Consumer Services, 41, 201–210. https://doi.org/10.1016/J.JRETCONSER.2017.12.011
- Roh, T., Seok, J., and Kim, Y. (2022). Unveiling ways to reach organic purchase: Green perceived value, perceived knowledge, attitude, subjective norm, and trust. Journal of Retailing and Consumer Services, 67, 102988. https://doi.org/10.1016/J.JRETCONSER.2022.102988
- Roth, M. S., and Romeo, J. B. (1992). Matching Product Catgeory and Country Image Perceptions: A Framework for Managing Country-of-Origin Effects. Journal of International Business Studies, 23(3), 477–497. https://doi.org/10.1057/PALGRAVE.JIBS.8490276/METRICS
- Septianto, F., Chiew, T. M., and Thai, N. T. (2020). The congruence effect between product emotional appeal and country-based emotion: The moderating role of country-of-origin. Journal of Retailing and Consumer Services, 52. https://doi.org/10.1016/j.jretconser.2019.101916



- Sharma, N., Lal, M., Goel, P., Sharma, A., and Rana, N. P. (2022). Being socially responsible: How green self-identity and locus of control impact green purchasing intentions? Journal of Cleaner Production, 357, 131895. https://doi.org/10.1016/J.JCLEPRO.2022.131895
- Shiel, C., Paço, A. do, and Alves, H. (2020). Generativity, sustainable development and green consumer behaviour. Journal of Cleaner Production, 245, 118865. https://doi.org/10.1016/J.JCLEPRO.2019.118865
- Singh, G., and Pandey, N. (2018). The determinants of green packaging that influence buyers' willingness to pay a price premium. Australasian Marketing Journal (AMJ), 26(3), 221–230. https://doi.org/10.1016/J.AUSMJ.2018.06.001
- Souiden, N., Amara, N., and Chaouali, W. (2020). Optimal image mix cues and their impacts on consumers' purchase intention. Journal of Retailing and Consumer Services, 54, 102011. https://doi.org/10.1016/J.JRETCONSER.2019.102011
- Suphasomboon, T., & Vassanadumrongdee, S. (2022). Toward sustainable consumption of green cosmetics and personal care products: The role of perceived value and ethical concern. Sustainable Production and Consumption, 33, 230–243. https://doi.org/10.1016/J.SPC.2022.07.004
- Sun, Y., Liu, N., and Zhao, M. (2019). Factors and mechanisms affecting green consumption in China: A multilevel analysis. Journal of Cleaner Production, 209, 481–493. https://doi.org/10.1016/J.JCLEPRO.2018.10.241
- Syntao. (2023, December 15). 2023 China Sustainable Consumption Report: New Trends in Sustainable Consumption in the Context of "Promoting Consumption." http://www.syntao.com/sy
- Tang, C., Han, Y., and Ng, P. (2023). Green consumption intention and behavior of tourists in urban and rural destinations. Journal of Environmental Planning and Management, 66(10), 2126–2150. https://doi.org/10.1080/09640568.2022.2061927
- Testa, F., Pretner, G., Iovino, R., Bianchi, G., Tessitore, S., and Iraldo, F. (2021). Drivers to green consumption: a systematic review. Environment, Development and Sustainability, 23(4), 4826–4880. https://doi.org/10.1007/S10668-020-00844-5/METRICS
- Tong, L., Toppinen, A., Wang, L., and Berghäll, S. (2023). How motivation, opportunity, and ability impact sustainable consumption behaviour of fresh berry products. Journal of Cleaner Production, 401, 136698. https://doi.org/10.1016/J.JCLEPRO.2023.136698
- Torma, G., and Thøgersen, J. (2024). Can a meta sustainability label facilitate more sustainable consumer choices? Business Strategy and the Environment, 33(2), 283–306. https://doi.org/10.1002/BSE.3488
- Velasco, F., Itani, O. S., and Cajina, P. (2024). Ecolabel persuasion effect across cultures: a comprehensive meta-analysis. International Marketing Review, ahead-of-print(ahead-of-print). https://doi.org/10.1108/IMR-10-2023-0293/FULL/PDF
- Wang, H., Ma, B., Bai, R., and Zhang, L. (2021). The unexpected effect of frugality on green purchase intention. Journal of Retailing and Consumer Services, 59, 102385. https://doi.org/10.1016/J.JRETCONSER.2020.102385
- Wang, Y., Huscroft, J. R., Hazen, B. T., and Zhang, M. (2018). Green information, green certification and consumer perceptions of remanufctured automobile parts. Resources, Conservation and Recycling, 128, 187–196. https://doi.org/10.1016/J.RESCONREC.2016.07.015



- Wang, Y., Jiang, J., Gong, X., and Wang, J. (2023). Simple = Authentic: The effect of visually simple package design on perceived brand authenticity and brand choice. Journal of Business Research, 166, 114078. https://doi.org/10.1016/J.JBUSRES.2023.114078
- Wong, J. W. C., and Lai, I. K. W. (2024). Influence of the green certification logo and text on environmental awareness and hotel guests' water-saving behaviour. Journal of Travel and Tourism Marketing, 41(4), 491–507. https://doi.org/10.1080/10548408.2024.2310763
- Yan, L., Keh, H. T., and Wang, X. (2021). Powering Sustainable Consumption: The Roles of Green Consumption Values and Power Distance Belief. Journal of Business Ethics, 169(3), 499–516. https://doi.org/10.1007/S10551-019-04295-5/FIGURES/4
- Yue, L., Liu, Y., and Wei, X. (2017). Influence of online product presentation on consumers' trust in organic food: A mediated moderation model. British Food Journal, 119(12), 2724–2739. https://doi.org/10.1108/BFJ-09-2016-0421/FULL/XML
- Zhang, M., and Merunka, D. (2015). The impact of territory of origin on product authenticity perceptions: An empirical analysis in China. Asia Pacific Journal of Marketing and Logistics, 27(3), 385–405. https://doi.org/10.1108/APJML-12-2014-0180/FULL/PDF
- Zhang, M., Qin, F., Wang, G. A., and Luo, C. (2020). The impact of live video streaming on online purchase intention. The Service Industries Journal, 40(9–10), 656–681. https://doi.org/10.1080/02642069.2019.1576642
- Zhao, X., Zhu, Z., Shan, M., Cao, R., and Chen, H. (Allan). (2024). "Informers" or "entertainers": The effect of social media influencers on consumers' green consumption. Journal of Retailing and Consumer Services, 77, 103647. https://doi.org/10.1016/J.JRETCONSER.2023.103647