

Article

The Role of Skepticism and Transparency in Shaping Green Brand Authenticity and Green Brand Evangelism

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Abstract: Green brand evangelism builds an important psychological and behavioral basis on promoting the positive interaction between green brands and consumers, as well as on realizing the co-creation of green brand value. This study selects brand authenticity issues as the entry point and investigates brand authenticity on green brand evangelism. In particular, this study tests the effects of green transparency and green skepticism on brand authenticity, as well as the role of self-brand connection and the need for cognition on the relationship between brand authenticity and green brand evangelism. With a sample of 641 Chinese respondents of green building materials, the dimension and scale of green brand evangelism were acquired by utilizing the grounded theory, and the hypothesized relationships were tested by employing structural equation modeling. The findings suggest that green transparency and green skepticism yield an influence on brand authenticity, and brand authenticity exerts a great influence on green brand authenticity. Moreover, brand authenticity positively affects self-brand connection, which in turn positively influences green brand authenticity, and the relationship between brand authenticity and green brand evangelism is regulated by the need for cognition.

Keywords: green brand; brand authenticity; green brand evangelism; green transparency; green skepticism



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1. Introduction

Brand evangelism refers to brand behavior in that consumers take the initiative to communicate, share recommendations, and persuade consumption through a pleasant brand consumption experience. In a sense, brand evangelists are the “we media” of brand communication, brand opinion leaders, and brand market guards. Brand evangelism is an important psychological and behavioral basis to promote positive interaction between brands and consumers, as well as to realize the co-creation of brand value. With the continuous improvement of the market environment and the in-depth development of social media, brand evangelism will play an increasingly important role in consumers’ brand selection and the cultivation of enterprises’ core competence. In the context of green building materials, green building materials are typically durable consumer goods with strong and durable functions, whose categories, varieties, and patterns of building materials are diversified, so it is difficult to choose green building materials. The particularity of green building materials also determines that it is extremely suitable for consumers to adopt brand evangelism to guide consumers’ brand decisions. Therefore, consumers will consider consumers’ brand evangelism when buying green building materials. Green brand evangelism implies that evangelists with pleasant consumption experiences believe in the high green value of green building materials brands and enthusiastically publicize and recommend them; it reduces the decision-making cost of consumers’ green building materials consumption especially when green brand information is asymmetric. Hence, green brand evangelism has become a rather reliable information source for consumers to

choose green building materials, and an increasing number of building materials enterprises hope to promote the building materials enterprise image and market competitiveness through green brand evangelism.

However, some building materials enterprises have seriously disrupted the market order and destroyed the consumption ecology of green building materials by adopting “Greenwash” methods such as false propaganda, vague words, stealing concepts, and shoddy goods. The concealment of the quality of building materials and the fuzziness of the green attributes have also been puzzling consumers. Green building materials brands are considered by consumers as a “marketing gimmick”, seriously questioning the brand authenticity and gradually weakening the trust and admiration of green building materials brands. Therefore, it is a topic of profound theoretical and practical significance to study the influence of brand authenticity on brand evangelism of green building materials. Despite the growing importance of green brand evangelism literature (e.g., Sohaib Muhammad et al. [1]), scant attention has been paid to addressing the development of green brand evangelism from the perspective of brand authenticity. In order to fulfill this gap, this paper attempts to investigate the role of brand authenticity in shaping green brand evangelism.

Previous research suggests that opacity of information has become one of the main obstacles to choosing green washing machines [2] and green transparency helps consumers acquire more detailed and transparent information about green brands [3], and consumers with environmental awareness generally doubt green brands’ environmental protection claims and do not believe that the green propositions of brands are authentic and truly have a positive impact on the environment [4]. In addition, people generally worry that enterprises have been spreading incomplete or even misleading environmental protection information, and they have concealed the real business motives from consumers [5]. Hence, this study proposes that green transparency, as well as green skepticism, would potentially influence brand authenticity.

In accordance with the C-A-B theory, affection can act as a mediator between cognition and behavior. Self-brand connection is a kind of affection variable, and it has been confirmed that it mediates the relationship between green brand authenticity and brand purchase intention [6], and a strong connection between consumers and green brands through promoting brand authenticity can help persuade consumers to purchase green brands. Self-brand connection is likely to be a mediator between brand authenticity and green brand evangelism. According to Elaboration Likelihood Model, the motivation and ability of individuals to process and think complex information are related to their cognition of decision objects. The need for cognition has been confirmed that it moderates the effect on suspicion of CSR messages, which in turn exerts an influence on their brand choice [7], and the higher degree of need for cognition, the stronger green brand connection, and green brand evangelism would be. Need for cognition possibly moderates the relationship between brand authenticity and green brand evangelism.

This study attempts to research the development of green brand evangelism from a brand authenticity perspective by testing a unique model comprising self-brand connection and the need for cognition. The integrated research model is mainly based on the C-A-B theory. The purpose of this study is first to test the scale of green brand evangelism. Secondly, it makes an examination of the impact of the two antecedents (green transparency and green skepticism) on brand authenticity. Thirdly, it aims to investigate the direct influence of brand authenticity on green brand evangelism and the indirect relationship on green brand evangelism via self-brand connection. Finally, this study investigates the moderate effect of the need for cognition between brand authenticity and green brand evangelism.

2. Literature Review and Hypotheses Development

2.1. Green Brand Evangelism

Brand evangelism can not only enhance the stickiness between consumers and brands but also improve the efficiency of brand communication. It is helpful for enterprises to gain

a sustainable competitive advantage by digging into the mechanism of brand recognition. In the green branding context, Panda et al. (2020) argue that green brand evangelism composes of five measurements, that is, positive word of mouth, latest information seekers, interest to influence others, perceived values, and great enthusiasm [8]. Green brand evangelism can be seen as a kind of advanced marketing form in which consumers voluntarily represent green brand promotion. It brings many benefits to green brands, such as word-of-mouth promotion, recruiting consumers, and defending competitors. Green brand evangelism is characterized by consumers' strong beliefs in green brands and brand values related to green products.

2.2. Cognition–Affect–Behavior Model

The order of the standard learning hierarchy (i.e., cognitive first, affective middle, and behavioral last) was chosen in this study for several reasons. Firstly, the three components in this order correspond to each other and flow in the same direction, which is one of the most common orders [9]. Secondly, this order has been widely used in consumer behavior research, including loyalty research and the consumer persuasion hierarchy model. In addition, the cognition–affect–behavior (C-A-B) paradigm has been employed to examine a model linking greenwash and green skepticism with green purchase intentions [10].

As such, according to the C-A-B paradigm, green brand responses begin with consumer cognition (e.g., personal beliefs, thoughts, perceptions, meaning, or otherwise) towards a particular green brand, followed by emotion (e.g., personal feelings or emotions about the particular green brand), and leads to brand behavior (e.g., behavioral intention or actual action).

2.3. Green Transparency and Brand Authenticity

Green transparency refers to the fact that green brands clearly provide relevant information about their environmental policies and frankly acknowledge the impact of the production process on the environment. Green transparency is reflected in the availability, effectiveness, and accuracy of green brand information, including all the real information related to green brand products, prices, and functions, as well as the information on brand environmental protection and how to realize it.

Green transparency helps consumers get green brand clues. Nguyen et al. (2017) believe that lack of transparency leads consumers to be skeptical of the brand's green environmental label and quality assurance. If green brands convey some persuasive messages about green values, such as data on reducing carbon dioxide and protecting natural resources, a clear and honest green product message will be acquired [11]. Fan et al. (2019) argue that promoting the procurement of energy-efficient washing machines requires greater information transparency and effective communication of the benefits and costs of energy-efficient washing machines. Green attributes of green brands are "invisible", which makes it difficult for consumers to fully understand green brands and judge their authenticity [2]. However, green transparency helps green brands communicate their green values by improving the transparency of information related to sustainability so as to win the favor of alternative brands among target consumers. If green brands can convey transparent green information and enhance the transparency of green brands, it can strengthen consumers' cognition of the real motivation of green branding and brand authenticity.

Hence, the following was hypothesized:

Hypothesis (H1): *Green skepticism has a positive impact on brand authenticity.*

2.4. Green Skepticism and Brand Authenticity

It has been confirmed that irresponsible environmental behaviors of enterprises are the key reason for people's increasing uncertainty and doubt about the environmental performance and benefits of green products. These behaviors lead to consumers' distrust

of the green proposition, questioning the enterprises' green motivation and promised environmental protection benefits, thus causing consumers to doubt the authenticity of green brands and the sincerity of enterprises. This phenomenon is known as green skepticism, which is enhanced by greenwashing, a common way of striving to appear to be more environmentally friendly than they really are [10]. Wu et al. (2018) put forward a new concept—green brand skepticism—and it has been defined as a tendency state of doubting the environmental protection claims or environmental performance of branded products [12].

Consumers with green skepticism are unwilling to purchase energy-efficient and environmentally friendly products [13]. Because of the existence of green skepticism, consumers of environmental awareness generally doubt the environmental protection claims of brands and do not believe that the green claims of brands are authentic. Green skepticism “devaluates” the environmental protection claims of brands and finally threatens the authenticity evaluation of green brands. It can be seen that green skepticism is an important antecedent variable of brand authenticity.

Based on the above analysis, the following hypothesis is proposed:

Hypothesis (H2): *Green skepticism has a negative impact on brand authenticity.*

2.5. Brand Authenticity and Self-Brand Connection

Self-brand connection refers to the degree to which consumers integrate themselves into brands and rely on brands to map or express themselves, reflecting the degree to which consumers fit themselves with brands. Self-brand connection is a type of subjective and personally driven brand relationship [14]. The strength of self-brand association depends on the extent to which that brand embodies the symbolism of the consumer; that is, that brand has some symbolic meaning related to the consumer's self. It can be seen that the formation of self-brand connections needs certain conditions.

Green brands meet consumers' needs to express personal values and pursue moral or ethical responsibilities. In other words, choosing green brands makes consumers “feel good about themselves”. Authentic green brands can better satisfy consumers' self-realization needs by expressing consumers' social responsibility and concern about environmental protection. The symbolic meanings of green brands become the carrier of their self-expression. Thus, brand authenticity becomes an important clue to predicting self-brand connection. Therefore, it can be assumed that brand authenticity is closely related to self-brand connection, and the following hypothesis was put forward:

Hypothesis (H3): *Brand authenticity has a positive effect on self-brand association.*

2.6. Brand Authenticity and Green Brand Evangelism

Previous studies have identified that brand authenticity has a positive impact on brand evangelism from the aspects of brand behavior and brand emotion. Yoon and Kak (2017) discuss the influence of authenticity types and information sources on brand evangelism in the SNS era; the research results show that communication authenticity, performance authenticity, and social authenticity are significantly related to the degree of consumer participation, which is an important reason for the formation of brand evangelism [15]. Xu et al. (2021) investigate that green brand authenticity influences eWOM intention, which is mediated through brand trust [16].

Authentic green building materials brands guarantee the quality, design, performance, and origin of products, these features related to green building materials brands' experiences enhance consumers' authenticity cognition and enable them to experience the advantages or benefits of green brands. In this way, it creates a good condition for breeding potential green brand evangelism. Therefore, the following hypothesis is proposed:

Hypothesis (H4): *Brand authenticity positively influences green brand evangelism.*

2.7. Self-Brand Connection and Green Brand Evangelism

Self-brand association is not only positively correlated with consumers' brand evaluation but also generates positive word-of-mouth communication. When consumers are highly connected to a particular brand, their behaviors towards that brand will be similar to how they behave toward themselves. Cheng et al. (2012) believe that consumers with a high degree of connection to that brand regard that brand as a part of themselves [17]. When the brand forms a self-brand association gains people's high evaluation, consumers with a higher connection to that brand will be more determined to support the brand because supporting the brand means supporting themselves. As such, while the brand suffers an abusive review, it is equivalent to the consumers themselves being hurt, and they will spontaneously defend the brand. In this case, consumers tend to buy the self-connected brand, consciously protect the brand and defend the competitive brand. Both of those behaviors are a kind of brand evangelism behavior. Elyria Kemp et al. (2012) find that if local residents have established a connection with a city's brand, they will become brand advocates and promote the city brand to others, thus promoting the acceptance of the city brand [18]. It has revealed that self-green brand connection influenced consumers' resistance to negative information toward green brands [3].

In the context of green consumption, green brands help consumers to reflect their own green identity and express altruism, forming positive or strong self-brand connections, prompting consumers to "share the same fate" and "breathe together" with green brands and become loyal evangelists. Therefore, the following hypothesis is proposed:

Hypothesis (H5): *Self-brand connection plays a positive role in green brand evangelism.*

2.8. Self-Brand Connection as a Mediator

According to C-A-B theory, there may be emotional variables in the process of brand authenticity affecting green brand evangelism, and self-brand connection can be regarded as an intermediary variable in this process.

Kemp et al. (2014) propose that consumers with a high degree of brand connection are more likely to become brand advocates. Consumers with a high degree of brand connection are more likely to have behaviors such as firm brand purchase beliefs, voluntary brand promotion, maintenance, and even protection of the brand [19]. Marticotte et al. (2016) find that self-connection affects brand evangelism, and brand evangelists will take harmful behaviors such as "trash talking" to competitive brands [20], and another obtained result reveals that green-self-brand connection partially mediates the relationship between green brand equity and green brand word of mouth [21]. Li et al. (2019) analyze that the authentic performance of green brands positively affects the purchase intention of green building materials, and self-brand connection plays an intermediary role in this process [6].

It can be seen that self-brand connection acts as the intermediary role in promoting brand evangelism. When consumers form a high connection with authentic green brands, the evangelism of green brands is also prone to occur. Therefore, the following assumption is proposed:

Hypothesis (H6): *Self-brand connection plays a mediating role between brand authenticity and green brand evangelism.*

2.9. The Regulatory Mediating Effect of Need for Cognition

Need for cognition concerns the motivation behind individual cognitive information processing, which reflects the "tendency to participate and enjoy thinking", and restricts the breadth and depth of individual information processing. Petty et al. (2009) define the need for cognition as "people's different tendency to participate in and enjoy laborious cognitive activities" [22]. According to the theory of elaboration likelihood mode, consumers with a high need for cognition are more likely to follow the central line to form brand attitude after processing brand-related information or clues, while consumers with a low need for

cognition are more affected by marginalized information and are more likely to carry out shallow information processing. Zhang and Hanks (2017) explore the role of the need for cognition in doubting corporate social responsibility messages [7]. When consumers are confronted with a number of CSR-related cues, consumers with a high degree of need for cognition are more likely to carefully process the information and reduce their skepticism about CSR practices. On the contrary, consumers with a low degree of need for cognition are likely to process information at a shallow level, and complex information will deepen their suspicion.

In this context of green brand consumption, the higher level of consumers' need for cognition, the lower possibility of being confused by the similarity, overload, and fuzziness of green brand information; the more willing consumers are to think carefully and deeply analyze the obtained information, and the easier they are to be persuaded by the authentic green brand information and establish a connection with green brands. Essentially, exposed to numerous green brand information, consumers with a high need for cognition may carefully review the relevant information around the green brand, more accurately balance all the relevant information, focus on evaluating the authenticity of this information, and use their green brand knowledge to establish a self-brand connection.

While consumers with a low need for cognition prefer fluency information, the complexity of green brand information leads to their low willingness to deeply process information and only pay attention to superficial value. The connection between these consumers and green brands may be weakened due to lower concerns about the authenticity of green brands. It can be seen that the need for cognition can adjust the indirect impact of brand authenticity on green brand evangelism. Therefore, the following assumption is put forward:

Hypothesis (H7): *The need for cognition plays a regulatory mediating role in the impact of brand authenticity on self-brand connection.*

By combing the relevant analysis of the impact of brand authenticity on green brand evangelism, this paper extracts the factors such as green transparency, green skepticism, self-brand connection, and need for cognition, as well as analyzes the role of these factors in the process of brand authenticity affecting green brand evangelism, puts forward the corresponding assumptions, and establishes a comprehensive model of the impact of brand authenticity on green brand evangelism, as shown in Figure 1.

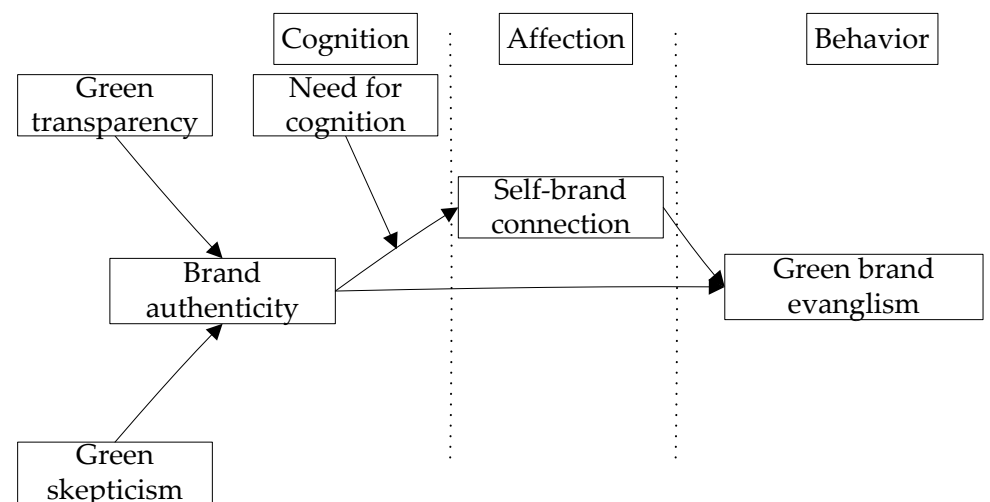


Figure 1. Structural relationship between brand authenticity and green brand evangelism.

3. Methods

3.1. Measurement of Variables

The items of green transparency in this paper refer to the research results of Lin et al. (2017) [23]. These items reflect that green brands clearly provide relevant information about brand environmental protection policies and frankly recognize the impact of production and operation processes on the environment, and green skepticism is defined as the tendency of consumers to distrust or question the environmental protection proposition or environmental performance of green brands in the context of misleading and distorted environmental protection information of green products and the lack of unified green building materials certification procedures and standards. The measurement scale of green skepticism refers to the scales of Wu et al. (2018), covering 4 semantic items [12]. This paper mainly uses the research results of Lin et al. (2017) to design the measurement scale of self-brand connection, covering 3 semantic items.

The measurement scale of need for cognition in this paper mainly draws on the research results of Rathore et al. (2022) [24], covering three semantic items. These semantic items reflect consumers' internal motivation to deal with green building materials' brand-related information and their tendency to enjoy complex thinking in the process of green building materials brand consumption.

Measure reliability and validity of green brand transparency, green skepticism, self-brand connection, and need for cognition are shown in Table 1. More specifically, all factors show a high Cronbach's α , ranging from 0.773 to 0.837, as well as all factor loadings are higher than 0.7. All the values of AVE are higher than 0.50, and the overall fit indexes are sufficient, thus supporting great reliability and validity.

Table 1. The result of reliability and validity of these constructs.

Construct	Items	Factor Loading	AVE	CR	Cronbach's α	Fit Index
Green Transparency (GT)	GT1	0.759	0.566	0.839	0.837	CMIN/DF = 2.335 GFI = 0.968 AGFI = 0.950 RMSEA = 0.042 CFI = 0.977 NFI = 0.961 PNFI = 0.715 RFI = 0.948 IFI = 0.991
	GT2	0.749				
	GT3	0.701				
	GT4	0.796				
Green skepticism (GS)	GS2	0.735	0.615	0.827	0.822	
	GS3	0.814				
	GS4	0.802				
Self-brand connection (SBC)	SBC1	0.704	0.536	0.776	0.773	
	SBC2	0.777				
	SBC3	0.714				
Need for cognition (NFC)	NFC1	0.815	0.638	0.841	0.837	
	NFC2	0.767				
	NFC3	0.813				

As to brand authenticity, the measurement scale of green brand authenticity was adopted from Li et al. (2019), and green brand authenticity consists of green attributes, conventional attributes, brand consistency, brand honesty, and brand symbolism.

Tables 2 and 3 show the result of the reliability and validity of green brand authenticity, respectively. More specifically, all factors show a high Cronbach's α , ranging from 0.805 to 0.841, and all factor loadings are higher than 0.7. The values of AVE are between 0.558 and 0.662, and the values of CR are between 0.823 and 0.887. Table 3 illustrates green brand authenticity has great discriminant validity. These two tables imply that green brand authenticity has great reliability and convergent validity.

Table 2. The result of reliability and validity of green brand authenticity.

Construct	Items	Factor Loading	Cronbach's α	AVE	CR	Fit Index
Green attributes (GA)	GA1	0.761	0.805	0.558	0.834	CMIN/DF = 1.465 GFI = 0.923 AGFI = 0.896 RMSEA = 0.070 CFI = 0.972 NFI = 0.913 PNFI = 0.740 RFI = 0.893 IFI = 0.971
	GA2	0.734				
	GA4	0.711				
	GA5	0.779				
Conventional attributes (CA)	CA1	0.727	0.820	0.564	0.838	
	CA2	0.736				
	CA3	0.745				
	CA4	0.795				
Brand consistency (BC)	BC2	0.846	0.841	0.662	0.887	
	BC3	0.805				
	BC6	0.774				
	BC7	0.827				
Brand symbolism (BS)	BS1	0.818	0.823	0.609	0.823	
	BS3	0.796				
	BS4	0.724				

Table 3. The result of discriminant validity of green brand authenticity.

	GA	CA	BC	BH	BS
GA	(0.747)				
CA	0.486	(0.751)			
BC	0.309	0.338	(0.814)		
BH	0.535	0.428	0.480	(0.725)	
BS	0.362	0.362	0.374	0.544	(0.780)

In the case of multidimensional construct (i.e., green brand evangelism), no scales were available in green building materials context. For this reason, the grounded theory approach was employed to generate the scale items. According to the three steps of grounded theory, original materials were carried out to analyze the constituent elements of green building materials brands.

First, original materials were collected on the basis of in-depth interviews and online texts. In-depth interviews mainly include one-to-one in-depth interviews and focus group interviews. The former interviews were conducted with green building materials sales personnel, green building materials brand managers, and green building materials construction personnel, while focus group interviews were conducted among green building materials consumers. The number of in-depth interviewees on green brand evangelism is twenty-seven (i.e., nine consumers, eight green building materials personnel, six green building materials construction personnel, and four green building materials brand managers) were conducted. During the interviews, we first requested the participants to deliver comments on green building materials evangelism in the product context and in the brand context. Then, we consulted them to list the green building materials brands they are willing to evangelism. These interviews lasted between 45 and 60 minutes. Questions revolved around the definition and drivers of green brand evangelism on building materials, as well as the indicators of green brand evangelism. At the end of the discussion, the interviewees were asked to formulate indicators that they considered suitable for measuring green brand evangelism.

When it comes to online texts, they were selected from Sina micro-blog, WeChat (official account, small program, and WeChat group), enterprise official websites, building materials portals (China Building Materials Networks), and online reviews (i.e., mainly adopted from Jingdong and Tmall shopping platforms). Online texts referred to green brand evangelism were selected according to the following criteria: (1) Online texts should focus on the theme of green building materials products or brands, and irrelevant or inappropriate

comments were discarded. (2) The descriptions and comments of online texts should be objective and specific with the theme of brand value, green attributes, and product attributes involving specific characteristics, green value, and user experience of green building materials brands. (3) Text searching only selects consumers who published pure and authentic online reviews and abandons “commercial display” and “public platform” as well as other texts with obvious marketing information. All the contents of the online texts will be utilized for future data analysis. Finally, a total of 454 original materials were collected from the interview survey and online texts. Approximately two-thirds of the original materials (i.e., 302) were preliminarily sorted out for data analysis and coding, and the remaining original materials were used for the saturation test.

In the open coding stage, based on the connotation of green building materials and the interpretation of brand evangelism, 64 concepts and 15 categories were extracted. In the second coding stage, five subcategories (i.e., green attributes, brand attributes, purchase intention, positive brand referrals, and oppositional brand referrals) were generated. Green attributes refer to green attributes of green building materials brands, namely green value, such as energy conservation, environmental protection, safety and health, and concern for public welfare. While brand attributes refer to brand attributes of green building materials, these attributes symbolize quality guarantee and service commitment, these two categories promote consumers to establish a deep brand cognition with the green building materials brand.

In the third selective coding stage, green building materials brands’ green attributes and brand attributes trigger consumers’ recognition of green brands and aggregate into a firm brand belief of green brands, which is the cornerstone of green building materials brand behavior. With the deepening of the interaction between consumers and green building materials brands, consumers continue to deepen and strengthen green building materials brand faith, brand preference, and the exclusion emotion of competitive building materials brands; these feelings will guide the consumer behavior, purchase green building materials brands, freely spread positive word of mouth, and form competitive building materials brand resistance. These firm-supporting behaviors constitute the behavioral evangelism of green building materials brands. Based on this “storyline”, the dimensional composition model of green building materials brand evangelism is obtained through repeated comparative analysis, shown in Figure 2

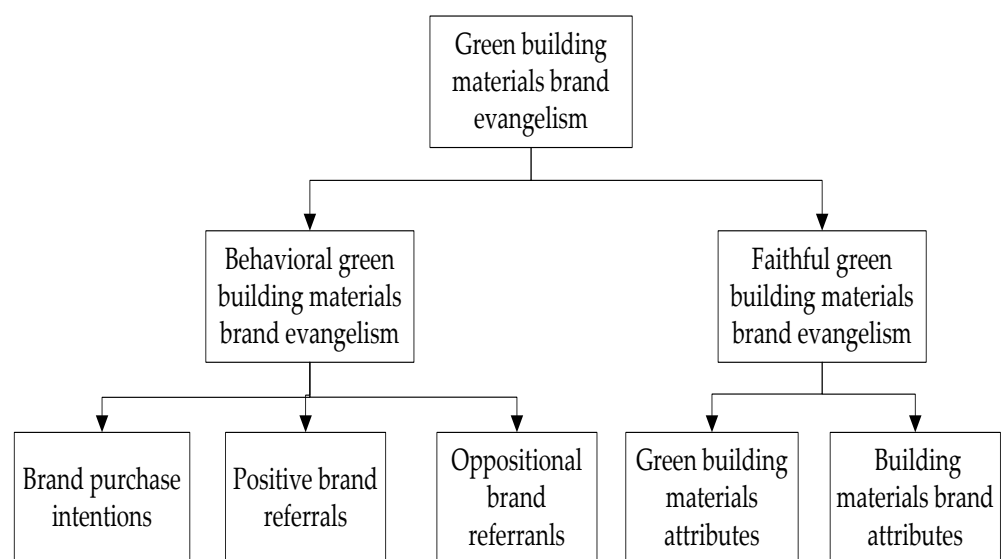


Figure 2. The model of green building materials brand evangelism.

The scale of green brand evangelism was adopted by Swimberghe et al. (2018) [25] and Panda et al. (2020) [8] and combined the relevant descriptions of green building materials

brands obtained by grounded theory. In order to increase the readability of semantic terms of green brand evangelism, apart from integrating domestic and foreign maturity scales by means of translation, semantic terms are considered several times in combination with the uniqueness of “green value” and the particularity of “building materials products” to ensure the comprehensibility of semantic terms.

Measure reliability and validity of the reflective measurements are assessed using Cronbach’s α and confirmatory factor analysis. Tables 4 and 5 provide an overview of the measurement scales of faithful green brand evangelism and behavioral green brand evangelism, respectively. Overall, our measurement scales show sufficient reliability and validity. More specifically, all factors show a high Cronbach’s α , ranging from 0.789 to 0.887, and the average variances extracted (AVE) are all higher than 0.5. All factor loadings are significant, thus supporting convergent validity.

Table 4. Reliability and validity of faithful green brand evangelism.

	Construct	Items	Factor Loading	Cronbach’s α	AVE	CR	Fit Index
Faithful green brand evangelism	Green building materials attributes (GBA)	GBA1	0.788	0.851	0.536	0.852	CMIN/DF = 1.549 GFI = 0.960 AGFI = 0.935 RMSEA = 0.049 CFI = 0.982 NFI = 0.951 PNFI = 0.718 RFI = 0.935 IFI = 0.982
		GBA3	0.736				
		GBA4	0.705				
		GBA7	0.719				
		GBA8	0.710				
	Brand Attributes (BA)	BA2	0.710	0.839	0.511	0.839	
		BA3	0.699				
		BA4	0.726				
		BA5	0.730				
		BA6	0.708				

Table 5. Reliability and validity of behavioral green brand evangelism.

	Construct	Items	Factor Loading	Cronbach’s α	AVE	CR	Fit Index
Behavioral green brand evangelism	Purchase Intention (PI)	PI2	0.806	0.794	0.565	0.795	CMIN/DF = 1.509 GFI = 0.965 AGFI = 0.941 RMSEA = 0.062 CFI = 0.986 NFI = 0.960 PNFI = 0.682 RFI = 0.943 IFI = 0.986
		PI3	0.713				
		PI4	0.733				
	Positive Brand Referrals (PBR)	PBR2	0.811	0.789	0.563	0.794	
		PBR3	0.745				
		PBR4	0.691				
	Oppositional Brand Referrals (OBR)	OBR1	0.823	0.887	0.663	0.887	
		OBR2	0.830				
		OBR3	0.787				
		OBR5	0.816				

Discriminant validity for faithful green brand evangelism and behavioral green brand evangelism is shown in Tables 6 and 7, respectively, which manifest great discriminate validity.

Table 6. Discriminant validity of faithful green brand evangelism.

	GBA	BA
GBA	(0.732)	
BA	0.606	(0.715)

Table 7. Discriminant validity of behavioral green brand evangelism.

	PI	PBR	OBR
PI	(0.752)		
PBR	0.658	(0.750)	
OBR	0.381	0.479	(0.814)

Next, we utilize second-order confirmatory factor analysis to assess the reliability and validity of green brand evangelism, as shown in Tables 8 and 9, implying green brand evangelism has great reliability and validity.

Table 8. Reliability and validity of green brand evangelism.

Construct	Items	Factor Loading	Cronbach's α	AVE	CR	Fit Index
Green building materials attributes (GBA)	GBA1	0.783	0.851	0.536	0.852	CMIN/DF = 1.469 GFI = 0.914 AGFI = 0.891 RMSEA = 0.075 CFI = 0.967 NFI = 0.905 PNFI = 0.786 RFI = 0.891 IFI = 0.968
	GBA3	0.722				
	GBA4	0.710				
	GBA7	0.736				
	GBA8	0.707				
Brand Attributes (BA)	BA2	0.703	0.839	0.510	0.839	
	BA3	0.699				
	BA4	0.724				
	BA5	0.731				
	BA6	0.714				
Purchase Intention (PI)	PI2	0.790	0.794	0.565	0.795	
	PI3	0.719				
	PI4	0.744				
Positive Brand Referrals (PBR)	PBR2	0.796	0.789	0.564	0.794	
	PBR3	0.752				
	PBR4	0.701				
Oppositional Brand Referrals (OBR)	OBR1	0.826	0.887	0.663	0.887	
	OBR2	0.829				
	OBR3	0.785				
	OBR5	0.815				

Table 9. Discriminant validity of green brand evangelism.

	GBA	BA	PI	PBR	OBR
GBA	(0.732)				
BA	0.608	(0.714)			
PI	0.638	0.581	(0.752)		
PBR	0.671	0.527	0.662	(0.751)	
OBR	0.330	0.313	0.381	0.480	(0.814)

To sum up, green brand evangelism is made up of two main dimensions: faithful green brand evangelism and behavioral green brand evangelism, and consists of five sub-dimensions: green attributes, brand attributes, purchase intention, positive brand referrals, and oppositional brand referrals. Faithful green brand evangelism includes two sub-dimensions, green attributes, and brand attributes, reflecting consumers' confidence and conviction in green brands' environmental protection, energy saving, health, quality assurance, and service commitment. At the same time, the other one includes three sub-dimensions: purchase intention, positive brand referrals, and oppositional brand referrals, reflecting the three types of supporting behaviors of consumers towards green brands. Purchase intention is the most superficial supporting behavior, implying that consumers have the intention to buy green brands. Positive brand referrals are a deeper supportive

behavior, which is manifested by consumers voluntarily promoting green brands to others. Oppositional brand referrals are the deepest supportive behavior, demonstrating a kind of exclusive behavior of consumers toward green brands. They firmly support the “focus” green brands and consciously resist other competitive brands.

From the above analysis, green brand evangelism and green brand authenticity are both multidimensional concepts; research hypotheses H1–H5 can be expanded as follows:

- H1a:** *Green transparency exerts a significant impact on green attributes.*
- H1b:** *Green transparency exerts a significant impact on conventional attributes.*
- H1c:** *Green transparency exerts a significant impact on brand consistency.*
- H1d:** *Green transparency exerts a significant impact on brand honesty.*
- H1e:** *Green transparency exerts a significant impact on brand symbolism.*
- H2a:** *Green skepticism exerts a significant impact on green attributes.*
- H2b:** *Green skepticism exerts a significant impact on conventional attributes.*
- H2c:** *Green skepticism exerts a significant impact on brand consistency.*
- H2d:** *Green skepticism exerts a significant impact on brand honesty.*
- H2e:** *Green skepticism exerts a significant impact on brand symbolism.*
- H3a:** *Green attributes exert a significant impact on self-brand connection.*
- H3b:** *Conventional attributes exert a significant impact on self-brand connection.*
- H3c:** *Brand consistency exerts a significant impact on self-brand connection.*
- H3d:** *Brand honesty exerts a significant impact on self-brand connection.*
- H3e:** *Brand symbolism exerts a significant impact on self-brand connection.*
- H4a:** *Green attributes exert a significant impact on green brand evangelism.*
- H4b:** *Conventional attributes exert a significant impact on green brand evangelism.*
- H4c:** *Brand consistency exerts a significant impact on green brand evangelism.*
- H4d:** *Brand honesty exerts a significant impact on green brand evangelism.*
- H4e:** *Brand symbolism exerts a significant impact on green brand evangelism.*
- H5a:** *Self-brand connection exerts a significant impact on green brand attributes.*
- H5b:** *Self-brand connection exerts a significant impact on brand attributes.*
- H5c:** *Self-brand connection exerts a significant impact on purchase intention.*
- H5d:** *Self-brand connection exerts a significant impact on word of mouth.*
- H5e:** *Self-brand connection exerts a significant impact on oppositional brand referrals.*

3.2. Pre-Test

In order to help respondents better understand the connotation of green brand evangelism, the questionnaire selected representative green building materials brands composing a test brand set according to the 2018 National Green Building Materials Brand Plan. Green building material products were chosen as a product category because building materials are notoriously considered to be one of the main contributors to polluting the natural environment, as well as face the brunt of stringent regulatory requirements and a steady demand for more eco-friendly (green) products from concerned consumers. The questionnaire consists of three parts: the first part requires the respondents to choose the most authentic and reliable green building materials brand from a series of green flooring brands as the reference brand or give the most authentic and reliable green building materials brand in their own opinion. The second part includes not only the semantic terms of the main variables of green building materials brand evangelism but also the semantic terms of related variables involved in the structural relationship between brand authenticity and green brand evangelism model, such as green transparency, green skepticism, need for cognition and self-brand connection. The semantic terms adopt Likert's 7-point scale method and require consumers to tick according to their actual ideas. The third part is the demographic variables such as marital status, age of children in the family, region, and annual income level.

In this pre-survey, the family and the members of the research group distributed online questionnaires through several Wechat and QQ community groups. In order to improve the participation enthusiasm of the respondents, the participants who completed the online questionnaire were given a small red envelope. A total of 300 questionnaires were sent, and 205 valid questionnaires were finally obtained, with an effective rate of 68.33%. Among the effective samples of the pre-survey, 88 participants were single, accounting for 42.93% of the valid sample. As to family status, there were 27 families without children, composed of 13.17% of the effective sample number, and there were 109 people in the central region, accounting for 53.17% of the effective sample number. When it comes to annual income, the participants with an annual income between CNY 50,000 and 100,000 make up 27.32% of the total effective samples.

Semantic items of green transparency, green skepticism, self-brand connection, and need for cognition were extracted according to the effective date of the pre-survey, semantic items that were difficult to effectively describe the dimensions were deleted, and the reliability of these five variables was tested. This paper successively optimizes the semantic terms of the related variables involved in the research (i.e., green transparency, green skepticism, self-brand connection, and need for cognition), gaining the final semantic items used for hypotheses testing.

3.3. Data Collection and Sample

Based on the results of the pre-survey, a formal questionnaire was designed to empirically test the proposed hypotheses, and a total of 641 valid questionnaires were obtained in this survey, and the general features of demographic variables in the formal survey were as shown in Table 10. There were 316 females, accounting for 45.31% of the respondents; The number of people aged 25–55 was 606, accounting for 94.54%. As to the marital status, 395 respondents have stepped into marriage, accounting for 61.62% of the total sample. Among them, 136 respondents have children whose ages were between 3 and 6. There are 134 people with a master's degree or above, accounting for 20.90%; 208 respondents lived in the eastern region, accounting for 32.45%. There are 219 people with an annual income of CNY 100,000 to 150,000, accounting for 34.17%. From the demographic characteristics of the formal survey, it is not difficult to find that the formal survey covers a wide range of people and different types of building materials consumers are involved, indicating that the effective sample data of the formal survey are more reasonable.

Table 10. Descriptive statistics.

Variable Name	Definition	Number	Percentage
Gender	Male = 1	325	54.69
	Female = 2	316	45.31
Age	25–35 years old = 1	288	44.93
	36–45 years old = 2	259	40.41
	46–55 years old = 3	59	9.20
	Above 55 years old = 4	35	5.46
Education	Below bachelor's degree = 1	223	34.79
	Undergraduate = 2	284	44.31
	Master's degree or above = 3	134	20.90
Marital status	Single = 1	246	38.38
	Married = 2	395	61.62
Children age	No children = 1	74	11.54
	Below three = 2	157	24.49
	From three to six = 3	136	21.22
	From six to nine = 4	114	17.78
	From nine to twelve = 5	91	14.20
	Above twelve = 6	69	10.76
Region	Eastern = 1	208	32.45
	Middle = 2	239	37.29
	Western = 3	194	30.26
Annual income level	Below CNY 50,000 = 1	79	12.32
	CNY 50,000 to CNY 100,000 = 2	109	17.00
	CNY 100,000 to CNY 150,000 = 3	219	34.17
	CNY 150,000 to CNY 200,000 = 4	168	26.21
	Above CNY 200,000 = 5	66	10.30

From green building materials brands selected by the respondents, it can be found that the top five green building materials brands were Saint Image (19.42%), Nature (17.31%), Jiusheng (15.42%), David (12.85%), and Del (10.29%). These green building materials brands do well in safety aspects such as energy saving, health quality, and environmental protection, and various green building materials brands have gradually obtained the widespread attention of consumers and have taken effective measures in terms of green innovation. These green brands are easier to highlight compared to other brands and are more likely to win the favor and preference of consumers.

Next, we discuss the results of the empirical hypotheses analysis.

4. Discussion

4.1. Main Path Effect Test

We utilized structural equation modeling to test the assumed relationships, and Table 11 displays the testing result of the main path effect. More specifically, we can find green transparency exerts a significant impact on brand authenticity ($p < 0.001$, $\beta = 0.275$, H1), and green skepticism has a negative effect on brand authenticity ($p < 0.001$, $\beta = -0.167$, H2). Concerning the consequences of brand authenticity, the results support H3 and H4, implying that brand authenticity positively influences self-brand connection ($p < 0.001$, $\beta = 0.225$, H3), as well as green brand evangelism ($p < 0.001$, $\beta = 0.642$, H4). Moreover, self-brand connection exerts an impact on green brand evangelism ($p < 0.001$, $\beta = 0.182$, H5). Thus, the results support hypotheses 1 and 5.

Table 12 displays the testing result of Hypothesis 1a to Hypothesis 1e, which shows green transparency exerts a significant impact on green attributes ($p < 0.001$, $\beta = 0.172$, H1a), conventional attributes ($p < 0.001$, $\beta = 0.261$, H1b), brand consistency ($p < 0.001$, $\beta = 0.173$, H1c), brand honesty ($p < 0.001$, $\beta = 0.219$, H1d) and brand symbolism ($p < 0.001$, $\beta = 0.169$, H1e) respectively. Thus, the results support hypothesis 1a and 1e.

Table 11. The testing results of Hypothesis 1–Hypothesis 5.

Hypotheses	Path Coefficient	S.E.	C.R.	<i>p</i>	Significance	Result
H1: BA←GT	0.275	0.032	5.213	***	Significant	Supported
H2: BA←GS	−0.167	0.020	−3.393	***	Significant	Supported
H3: SBC←BA	0.225	0.085	2.655	0.008	Significant	Supported
H4: GBE←BA	0.642	0.086	7.434	***	Significant	Supported
H5: GBE←SBC	0.181	0.039	4.632	***	Significant	Supported

Note: *** $p < 0.001$.

Table 12. The testing results of Hypothesis 1a–Hypothesis 1e.

Hypotheses	Path Coefficient	S.E.	C.R.	<i>p</i>	Significance	Result
H1a: GA←GP	0.172	0.036	3.484	***	Significant	Supported
H1b: CA←GP	0.261	0.043	5.332	***	Significant	Supported
H1c: BC←GP	0.173	0.046	3.626	***	Significant	Supported
H1d: BH←GP	0.219	0.043	4.583	***	Significant	Supported
H1e: BS←GP	0.169	0.054	3.534	***	Significant	Supported

Note: *** $p < 0.001$.

Table 13 displays the testing result of Hypothesis 2a–Hypothesis 2e, which shows green skepticism exerts a significant impact on green attributes ($p < 0.001$, $\beta = -0.137$, H2a), and brand honesty ($p < 0.001$, $\beta = -0.219$, H2d), respectively. Thus, the results only support hypothesis 2a and 2d, while they do not support the others.

Table 13. The testing results of Hypothesis 2a–Hypothesis 2e.

Hypotheses	Path Coefficient	S.E.	C.R.	<i>p</i>	Significance	Result
H2a: GA←GS	−0.137	0.028	−2.909	0.004	Significant	Supported
H2b: CA←GS	−0.082	0.033	−1.767	0.077	Insignificant	Unsupported
H2c: BC←GS	−0.055	0.037	−1.191	0.234	Insignificant	Unsupported
H2d: BH←GS	−0.177	0.035	−3.876	***	Significant	Supported
H2e: BS←GS	−0.075	0.042	−1.629	0.103	Insignificant	Unsupported

Note: *** $p < 0.001$.

Table 14 displays the testing result of Hypothesis 3a–Hypothesis 3e, which shows brand authenticity only exerts a significant impact on self-brand connection ($p < 0.05$, $\beta = 0.234$, H3a). Thus, the results only support hypothesis 3a, while they do not support the others.

Table 14. The testing results of Hypothesis 3a–Hypothesis 3e.

Hypotheses	Path Coefficient	S.E.	C.R.	<i>p</i>	Significance	Result
H3a: SBC←GA	0.234	0.080	2.909	0.03	Significant	Supported
H3b: SBC←CA	0.061	0.065	0.936	0.349	Insignificant	Unsupported
H3c: SBC←BC	−0.017	0.053	−0.323	0.746	Insignificant	Unsupported
H3d: SBC←BH	−0.082	0.064	−1.276	0.202	Insignificant	Unsupported
H3e: SBC←BS	0.021	0.046	0.450	0.653	Insignificant	Unsupported

Table 15 displays the testing result of Hypothesis 4a–Hypothesis 4e, which shows green attributes ($p < 0.05$, $\beta = 0.104$, H4a), conventional attributes ($p < 0.05$, $\beta = 0.082$, H4b), brand consistency ($p < 0.01$, $\beta = 0.103$, H4c) and brand honesty ($p < 0.05$, $\beta = 0.089$, H4d) exert a significant effect on green brand evangelism. Thus, the results support hypothesis 4a–4d, while they do not support hypothesis 4e.

Table 15. The testing results of Hypothesis 4a–Hypothesis 4e.

Hypotheses	Path Coefficient	S.E.	C.R.	p	Significance	Result
H4a: GBE←GA	0.104	0.050	2.806	0.037	Significant	Supported
H4b: GBE←CA	0.082	0.041	1.975	0.048	Significant	Supported
H4c: GBE←BC	0.103	0.034	3.008	0.003	Significant	Supported
H4d: GBE←BH	0.089	0.042	2.143	0.032	Significant	Supported
H4e: GBE←BS	0.007	0.029	0.244	0.807	Insignificant	Unsupported

Table 16 displays the testing result of Hypothesis 5a–Hypothesis 5e, which shows self-brand connection exerts a significant effect on green brand attributes ($p < 0.001$, $\beta = 2.062$, H5a), brand attributes ($p < 0.001$, $\beta = 2.445$, H5b), purchase intention ($p < 0.001$, $\beta = 3.085$, H5c) word of mouth ($p < 0.001$, $\beta = 2.391$, H5d), and oppositional brand referrals ($p < 0.001$, $\beta = 1.403$, H5e), respectively. Thus, the results support Hypothesis 5a–5e.

Table 16. The testing results of Hypothesis 5a–Hypothesis 5e.

Hypotheses	Path Coefficient	S.E.	C.R.	p	Significance	Result
H5a: GBA←SBC	2.062	0.416	4.959	***	Significant	Supported
H5b: BA←SBC	2.445	0.491	4.976	***	Significant	Supported
H5c: PI←SBC	3.085	0.603	5.113	***	Significant	Supported
H5d: WOW←SBC	2.391	0.479	4.993	***	Significant	Supported
H5e: OBR←SBC	1.403	0.326	4.303	***	Significant	Supported

Note: *** $p < 0.001$.

4.2. Mediating Effect Test and Moderating Effect Test

Concerning H6 and H7, we investigate the possible mediating effect of self-brand connection and moderating effect of the need for cognition by implementing Process Model. According to the test procedure of Hayes' mediating effect [26] (see Table 17), firstly, model 1 was established with brand authenticity as independent variable and self-brand connection as dependent variable. The results showed that brand authenticity had positive effects on self-brand connection ($\beta = 0.209$, $p < 0.01$). Secondly, green brand evangelism serves as the dependent variable, and brand authenticity and self-brand connection as independent variables, models 2–3 were established, respectively. The results showed that brand authenticity and self-brand connection ($\beta = 0.3776$, $p < 0.001$; $\beta = 0.1508$, $p < 0.001$) can positively influence green brand evangelism. Finally, the mediating effect of self-brand connection on brand authenticity and green brand evangelism is tested.

Table 17. The test results of Model 1–Model 3.

Variable	Self-Brand Connection	Green Brand Evangelism	
Independent variable	Model 1	Model 2	Model 3
Brand authenticity	0.209 **	0.3776 ***	
Self-brand connection			0.1508 *

Note: *** $p < 0.001$, ** $p < 0.01$ and * $p < 0.05$.

Green brand evangelism has two main dimensions: faithful green brand evangelism and behavioral green brand evangelism. Then, it analyzes the mediating effect of a self-brand connection between the two dimensions, with brand authenticity as the independent variable and the sub-dimension of green brand evangelism as the dependent variable (see Table 18). According to Model 1, brand authenticity exerts a positive influence on self-brand connection. Therefore, with faithful and behavioral green brand evangelism as dependent variables and brand authenticity and self-brand connection as independent variables, models 4–5 and 6–7 were established, respectively, and the results showed that brand authenticity and self-brand connection ($\beta = 0.3701, p < 0.001$; $\beta = 0.1203, p < 0.001$) can positively influence faithful green brand evangelism; Brand authenticity and self-brand connection ($\beta = 0.2911, p < 0.001$; $\beta = 0.1549, p < 0.001$) can positively influence behavioral green brand evangelism.

Table 18. The test results of Model 4–Model 7.

Variable	Self-Brand Connection	Faithful Green Brand Evangelism		Behavioral Green Brand Evangelism	
Independent variable	Model 1	Model4	Model5	Model6	Model7
Brand authenticity	0.209 **	0.3701 ***		0.2911 ***	
Self-brand connection			0.1203 ***		0.1549 ***

Note: *** $p < 0.001$ and ** $p < 0.01$.

According to the results in Tables 17 and 18, there exist three mediating effects paths, namely, green brand evangelism \leftarrow self-brand connection \leftarrow brand authenticity, faithful green brand evangelism \leftarrow self-brand connection \leftarrow brand authenticity, behavioral green brand evangelism \leftarrow self-brand connection \leftarrow brand authenticity (see Table 13). As illustrated in Table 19, these three paths of Boot CI upper limit and Boot CI lower limit are [0.0002, 0.0032], [0.0009, 0.0181], and [0.0008, 0.0193], respectively. From the above analysis, we can see that the self-brand connection has a significant mediating role in the process of brand authenticity affecting green brand evangelism, and faithful and behavioral green brand evangelism, supporting H6.

Table 19. The mediating effect test result of the self-brand connection.

Mediating Effects Path	Value	Boot Standard Error	Boot CI Upper Limit	Boot CI Lower Limit	Result
Green brand evangelism \leftarrow self-brand connection \leftarrow brand authenticity	0.0164	0.0089	0.0002	0.0232	significant
Faithful green brand evangelism \leftarrow self-brand connection \leftarrow brand authenticity	0.0077	0.0044	0.0009	0.0181	significant
Behavioral green brand evangelism \leftarrow self-brand connection \leftarrow brand authenticity	0.0088	0.0047	0.0008	0.0193	significant

Note: Boot standard error, Boot CI upper limit, and Boot CI lower limit refer to the standard error and the lower and upper limits of 95% confidence intervals of indirect effects estimated by the bias-corrected percentile Bootstrap method, respectively.

Then, self-brand connection is set as the dependent variable, while brand authenticity, need for cognition, and their interaction term are set as independent variables; model 8 was established to test whether the moderating effect was significant. The results showed (see Table 20) that the interaction term of need for cognition and brand authenticity had a

significant impact on self-brand connection ($\beta = 0.0063$, $p < 0.05$) after adding the need for cognition into the model. It shows that the need for cognition can play a positive role in the process of brand authenticity, indirectly influencing green brand evangelism through self-brand connection. Thus, H7 is supported.

Table 20. The moderating effect of need for cognition.

Variable	Self-Brand Connection
Independent variable	Model 8
Brand authenticity	0.209 **
Self-brand connection	0.2235 ***
Brand authenticity \times Need for cognition	0.0063 *

Note: *** $p < 0.001$, ** $p < 0.01$ and * $p < 0.05$.

To sum up, Table 21 illustrates the summary results of all the main hypotheses. H1, H2, H3, H4, H5, H6, and H7 are all supported.

Table 21. The summary results of all the main hypotheses.

Hypotheses	Content	Result
H1	Green transparency is positively associated with brand authenticity.	Supported
H2	Green skepticism has a negative impact on brand authenticity.	Supported
H3	Brand authenticity has a positive effect on self-brand association.	Supported
H4	Brand authenticity positively influences green brand evangelism.	Supported
H5	Self-brand connection plays a positive role in green brand evangelism.	Supported
H6	Self-brand connection plays a mediating role between brand authenticity and green brand evangelism.	Supported
H7	Need for cognition plays a regulatory mediating role in the impact of brand authenticity on self-brand connection.	Supported

Table 22 illustrates the summary results of all the sub-hypotheses, which support H1a–H1e, H2a, and H2d, H3a, H4a–H4d, and H5a–H5e.

Table 22. The summary results of all the sub-hypotheses.

Hypotheses	Content	Result
H1a	Green transparency exerts a significant impact on green attributes.	Supported
H1b:	Green transparency exerts a significant impact on conventional attributes.	Supported
H1c:	Green transparency exerts a significant impact on brand consistency.	Supported
H1d:	Green transparency exerts a significant impact on brand honesty.	Supported
H1e:	Green transparency exerts a significant impact on brand symbolism.	Supported
H2a:	Green skepticism exerts a significant impact on green attributes.	Supported
H2b:	Green skepticism exerts a significant impact on conventional attributes.	Unsupported
H2c:	Green skepticism exerts a significant impact on brand consistency.	Unsupported
H2d:	Green skepticism exerts a significant impact on brand honesty.	Supported
H2e:	Green skepticism exerts a significant impact on brand symbolism.	Unsupported
H3a:	Green attributes exert a significant impact on self-brand connection.	Supported
H3b:	Conventional attributes exert a significant impact on self-brand connection.	Unsupported
H3c:	Brand consistency exerts a significant impact on self-brand connection.	Unsupported

Table 22. Cont.

Hypotheses	Content	Result
H3d:	Brand honesty exerts a significant impact on self-brand connection.	Unsupported
H3e:	Brand symbolism exerts a significant impact on self-brand connection.	Unsupported
H4a:	Green attributes exert a significant impact on green brand evangelism.	Supported
H4b:	Conventional attributes exert a significant impact on green brand evangelism.	Supported
H4c:	Brand consistency exerts a significant impact on green brand evangelism.	Supported
H4d:	Brand honesty exerts a significant impact on green brand evangelism.	Supported
H4e:	Brand symbolism exerts a significant impact on green brand evangelism.	Unsupported
H5a:	Self-brand connection exerts a significant impact on green brand attributes.	Supported
H5b:	Self-brand connection exerts a significant impact on brand attributes.	Supported
H5c:	Self-brand connection exerts a significant impact on purchase intention.	Supported
H5d:	Self-brand connection exerts a significant impact on word of mouth.	Supported
H5e:	Self-brand connection exerts a significant impact on oppositional brand referrals.	Supported

5. Conclusions and Managerial Implications

5.1. Conclusions

Green brand evangelism is composed of two main dimensions: faithful and behavioral green brand evangelism, and it consists of five sub-dimensions: green attributes, brand attributes, purchase intention, positive brand referrals, and oppositional brand referrals. These dimensions of green brand evangelism in this study are similar to the dimensions of the previous study by Panda T.K. et al. (2020) [8].

Green transparency positively affects brand authenticity. Green transparency represents a brand can frankly present green attributes that can clearly release the influence on the environment in green brand production and operation, such as building materials of environmental protection label, enterprise production operation in the environmental protection efforts (the source of the timber, processing technology, product components, the installation process, etc.) and to fulfill the social responsibility of environment-friendly and saving resources, consumers, etc.). Green skepticism has a significant negative impact on brand authenticity. It reflects consumers doubt green performance and environmental benefits, suspect the greening motivation and distrust the green claims of green brands. Green skepticism weakens consumers' perception of the brand authenticity of green building materials and questions the green attributes and brand sincerity of green building materials. The result of this study corresponds to the study conducted by Bhaduri, G. and Copeland, L. (2021), showing green skepticism and information transparency influence consumers' brand evaluations [27].

Brand authenticity exerts a positive direct effect on green brand evangelism and an indirect effect on green brand evangelism through self-brand connection. That is, self-brand connection plays a mediating role in brand authenticity and green brand evangelism. The influence of brand authenticity on green brand evangelism is closely related to the self-brand connection. The mediating role of self-brand connection is consistent with the study result of Li et al. (2022) [28], indicating the effect of self-brand connection on brand behavior.

The need for cognition can moderate the mediating effect of the self-brand connection between brand authenticity and green brand evangelism, which is reflected as the moderated mediating effect. That is, the higher the level of need for cognition, the stronger the indirect influence of brand authenticity on green brand evangelism through self-brand connection. The moderating role of the need for cognition is similar to the result of the

study conducted by Huang and Ha (2021) [29], reflecting that when there is a high need for cognition, consumers process information, and their perception of the brand message is likely to evoke the brand response.

5.2. Managerial Implications

This study provides recommendations for construction marketers, especially brand managers; green transparency and green skepticism are positioned as new access to understanding the mechanism of the brand authenticity effect on green brand evangelism.

Green building materials brand enterprises should frankly show consumers the environmental protection patent, green building materials product logo, and green building brand selection information so that consumers can more conveniently identify the green information of building materials. That transparent information and clues reflect the sincerity and honesty of green brands, exerting an effect on consumers' brand authenticity perception. When a green brand can openly explain the green attributes and value of the brand, it can reduce consumers' doubts and distrust and deepen consumers' perception of the authenticity of the green brand.

Meanwhile, they also need to highlight the durable, comfortable and beautiful, good quality, and other basic attributes of green building materials, which are the basis of brand authenticity, Building materials brand process inheritance and brand commitment and other factors. In the dialogue between green building materials enterprises and consumers, they should try their best to communicate openly and patiently, provide practical suggestions for consumers' product selection, win consumers' trust and favor on green building materials brands, and reduce consumers' doubts and confusion. Otherwise, consumers do not perceive the authenticity of green value and kindness of brand value, leading to a negative perception of the brand.

It shows that green building materials brand enterprises should focus on an objective judgment about the authenticity of clues, such as using the label origin of green building materials, building materials' chemical composition, and the contents of building materials' chemical release. When consumers feel green brands shoulder environmental protection responsibility, consumers will utilize green brands to express their ego needs and pro-social behavior. This kind of self-brand connection will eventually affect green brand evangelism behavior. As such, the role of self-brand connection is stronger, and the strength of the brand authenticity exerted on green brand evangelism is larger.

This study reflects that the information communication types and methods of green brands should fit the cognitive characteristics of consumers. To be specific, consumers with a high need for cognition can be conveyed the brand authenticity of green building materials through the central path, such as providing green labels of green building materials, environmental protection patents, energy conservation efforts, and other aspects of the performance to present the "green attributes", improve the connection between consumers and green building materials brands, while consumers with a low need for cognition can be conveyed the brand authenticity of green building materials through edge paths, such as green advertisements, consumption scenes, and word-of-mouth publicity of green building materials brands to show its brand authenticity and improve the connection between consumers and green building materials brands.

6. Limitations and Future Research

This paper obtains the constituent dimensions and semantic items of green brand evangelism in the green flooring context. However, green building materials contain a wide range of categories, such as cement, ceramics, glass, and doors. In the future, the research category can be expanded to other categories to enhance the universality of the dimensions and semantic items of green brand evangelism.

There may exist many factors influencing green brand evangelism; however, this paper only considers these factors: brand authenticity, green skepticism, green transparency, self-brand connection, and need for cognition. Future studies can explore the

influence of demographic variables and other consumer personality variables on green brand evangelism.

The dependent variable studied in this paper is consumers' behavior toward green brand evangelism. When the subject of brand evangelism changes, how brand authenticity affects green brand evangelism is a problem worth further discussion. Future research can consider the influence of brand authenticity on sales staff's green brand evangelism behavior or designers' green brand evangelism and compare and analyze the differences in these different subjects' green brand evangelism behaviors.

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References

1. Sohaib, M.; Wang, Y.; Iqbal, K.; Han, H. Nature-based solutions, mental health, well-being, price fairness, attitude, loyalty, and evangelism for green brands in the hotel context. *Int. J. Hosp. Manag.* **2022**, *101*, 103126. [[CrossRef](#)]
2. Fan, L.X.; Tong, Y.; Niu, H.P. Promoting consumer adoption of water-efficient washing machines in China: Barriers and countermeasures. *J. Clean. Prod.* **2019**, *209*, 10441051. [[CrossRef](#)]
3. Lin, J.C.; Zhou, Z.; Leckie, C. Green brand communication, brand prominence and self-brand connection. *J. Prod. Brand. Manag.* **2020**, *30*, 1148–1161. [[CrossRef](#)]
4. Ulusoy, E.; Barretta, P.G. How green are you, really? Consumers' skepticism toward brands with green claims. *J. Glob. Responsib.* **2016**, *7*, 72–83. [[CrossRef](#)]
5. Wang, X.; Yuen, K.F.; Wong, Y.D.; Teo, C.C. It is green, but is it fair? Investigating consumers' fairness perception of green service offerings. *J. Clean. Prod.* **2018**, *181*, 235–248. [[CrossRef](#)]
6. Li, J.; Li, G.; Sun, X.X. Environment and Green Brand Authenticity and Its Effects towards Brand Purchase Intention: The Case of Green Building Material. *J. Environ. Prot. Ecol.* **2019**, *20*, 1842–1851. [[CrossRef](#)]
7. Zhang, L.; Hanks, L. Consumer skepticism towards CSR messages: The joint effects of processing fluency, individuals' need for cognition and mood. *Int. J. Contemp. Hosp. Manag.* **2017**, *29*, 2070–2084. [[CrossRef](#)]
8. Panda, T.K.; Kumar, A.; Jakhar, S.; Luthra, S.; Garza-Reyes, J.A.; Kazancoglu, I.; Sitoshna Nayak, S. Social and environmental sustainability model on consumers' altruism, green purchase intention, green brand loyalty and evangelism. *J. Clean. Prod.* **2020**, *243*, 118575. [[CrossRef](#)]
9. Goh, S.K.; Balaji, M.S. Linking green skepticism to green purchase behavior. *J. Clean. Prod.* **2016**, *131*, 629–638. [[CrossRef](#)]
10. Nguyen, T.T.H.; Yang, Z.; Nguyen, N.; Johnson, L.W.; Cao, T.K. Greenwash and Green Purchase Intention: The Mediating Role of Green Skepticism. *Sustainability* **2019**, *11*, 2653. [[CrossRef](#)]
11. Nguyen, T.; Phan, T.; Cao, T.; Nguyen, H. Green purchase behavior: Mitigating barriers in developing countries. *Strateg. Dir.* **2017**, *33*, 4–6. [[CrossRef](#)]
12. Wu, H.C.; Wei, C.F.; Tseng, L.Y.; Cheng, C.C. What drives green brand switching behavior? *Mark. Intell. Plan.* **2018**, *36*, 694–708. [[CrossRef](#)]
13. Katarzyna, K.G.; Tomasz, G. The Impact of Consumers' Green Skepticism on the Purchase of Energy-Efficient and Environmentally Friendly Products. *Energy* **2022**, *15*, 2077. [[CrossRef](#)]
14. Van der Westhuizen, L.M. Brand loyalty: Exploring self-brand connection and brand experience. *J. Prod. Brand. Manag.* **2018**, *27*, 172–184. [[CrossRef](#)]

15. Yoon, K. The Era of SNS, What Makes the Brand Evangelist? The Effect of Authenticity Types and Message Sources on the Level of Participation in the SIPS Model. *Korean. J. Adver.* **2017**, *28*, 73–92. [[CrossRef](#)]
16. Xu, Y.; Du, J.; Shahzad, F.; Li, X. Untying the Influence of Green Brand Authenticity on Electronic Word-of-Mouth Intention: A Moderation–Mediation Model. *Front. Psychol.* **2021**, *12*, 724452. [[CrossRef](#)]
17. Cheng, S.Y.Y.; White, T.B.; Chaplin, L.N. The effects of self-brand connections on responses to brand failure: A new look at the consumer-brand relationship. *J. Consum. Psychol.* **2012**, *22*, 280–288. [[CrossRef](#)]
18. Kemp, E.; Childers, C.Y.; Williams, K.H. Place branding: Creating self-brand connections and brand advocacy. *J. Prod. Brand. Manag.* **2012**, *21*, 508–515. [[CrossRef](#)]
19. Kemp, E.; Jillapalli, R.; Becerra, E. Healthcare branding: Developing emotionally based consumer brand relationships. *J. Serv. Mark.* **2014**, *28*, 126–137. [[CrossRef](#)]
20. Marticotte, F.; Arcand, M.; Baudry, D. The impact of brand evangelism on oppositional referrals towards a rival brand. *J. Prod. Brand. Manag.* **2016**, *25*, 538–549. [[CrossRef](#)]
21. Mehdikhani, R.; Valmohammadi, C. The effects of green brand equity on green word of mouth: The mediating roles of three green factors. *J. Bus. Ind. Mark.* **2021**, *37*, 294–308. [[CrossRef](#)]
22. Petty, R.E.; Briñol, P.; Loersch, C.; McCaslin, M.J. The need for cognition. In *Handbook of Individual Differences in Social Behavior*; Leary, M.R., Hoyle, R.H., Eds.; Guilford Press: New York, NY, USA, 2009; pp. 318–329.
23. Lin, J.; Lobo, A.; Leckie, C. The role of benefits and transparency in shaping consumers’ green perceived value, self-brand connection and brand loyalty. *J. Retail. Consum. Serv.* **2017**, *35*, 133–141. [[CrossRef](#)]
24. Rathore, H.; Jakhar, S.K.; Kumar, S.; Ezhil Kumar, M. Pay-what-you-want versus pick-your price: The interplay between participative pricing strategies and consumer’s need for cognition. *J. Bus. Res.* **2022**, *141*, 73–84. [[CrossRef](#)]
25. Swimberghe, K.; Darrat, M.A.; Beal, B.D.; Astakhova, M. Examining a psychological sense of brand community in elderly consumers. *J. Bus. Res.* **2018**, *82*, 171–178. [[CrossRef](#)]
26. Hayes, A. Introduction to mediation, moderation, and Conditional Process Analysis: A Regression-Based Approach. *J. Educ. Meas* **2013**, *51*, 335–337. [[CrossRef](#)]
27. Bhaduri, G.; Copeland, L. Going green? How skepticism and information transparency influence consumers’ brand evaluations for familiar and unfamiliar brands. *J. Fash. Mar. Manag.* **2021**, *25*, 80–98. [[CrossRef](#)]
28. Li, Y.; Zhang, C.; Shelby, L.; Huan, T.C. Customers’ self-image congruity and brand preference: A moderated mediation model of self-brand connection and self-motivation. *J. Prod. Brand. Manag.* **2022**, *31*, 798–807. [[CrossRef](#)]
29. Huang, R.; Ha, S. The role of need for cognition in consumers’ mental imagery: A study of retail brand’s Instagram. *Int. J. Retail. Distrib.* **2021**, *49*, 242–262. [[CrossRef](#)]