Article

The Influence of Internet Celebrities' Expertise and Attraction on Residents' Intention to Purchase Household Energy-Saving Products in the Context of an Online Community

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Abstract: In the past few years, internet celebrities have become a new and important way to get people to buy energy-saving products. Their psychological mechanisms for promoting fans' intention to purchase have become the focus of academic attention, but a unified conclusion has yet to be reached. This study uses online communities as a scenario, with the characteristics of influencers' expertise, social attraction, and task attraction as antecedent variables and social cognitive theory and parasocial interaction theory as the theoretical basis to explore their influence on fans' intention to purchase household energy-saving products. The study investigates the mediating role of parasocial relationships and the moderating role of fans' green self-efficacy in influencing internet celebrities' expertise and attraction of fans' parasocial relationships. The results showed that the parasocial relationships formed between fans and influencers mediated the relationship between the expertise and attraction of influencers and fans' intention to purchase energy-saving products and that "green self-efficacy" positively moderated the parasocial relationships formed between fans and internet celebrities in terms of their expertise and task attraction. The moderating effect of "green self-efficacy" on the parasocial relationships between fans and internet celebrities was insignificant.

Keywords: parasocial relationships; green self-efficacy; household energy-saving products

1. Introduction

In the past few years, the world has had trouble with a lack of resources and energy, as well as problems with supply and demand. The climate and environmental problems caused by energy consumption are also becoming increasingly severe [1]. It is the responsibility of every citizen to promote energy conservation. China is transitioning from a "production-oriented" to a "life-oriented" society, and the household sector's energy consumption has been increasing year over year [2]. Among them, electricity consumption, primarily from household appliances, contributes the most to energy consumption [3]. So, household electricity-saving behavior is increasingly important for resource conservation. Electricity-saving behavior is generally divided into buying electricity-saving behavior (such as buying an energy-saving refrigerator) and customary electricity-saving behavior (such as turning off the lights) [4]. Compared with customary electricity-saving behavior, electricity-saving behavior plays a more important role. So, it is significant to persuade households to choose energy-saving products. The consumption behavior of household energy-saving products is characteristic of "one-time investment, long-term impact" [5], so there are many difficulties in persuading people to buy because they have to pay more. The country has advocated green consumption and household energy-saving products in various policies [6,7]. National policies are essential in encouraging people to purchase household energy-saving products, but it tends to work in the short term. Therefore, other forces must be combined to promote people's buying behavior. In recent years, with the rapid development of internet marketing in China, internet celebrities have become an essential force in promoting the diffusion of household energy-saving products. They

have a large fan base due to their expertise and attraction, and they sell related energy-saving products among their fan groups, producing significant social and commercial value. The phenomenon of internet celebrities has attracted extensive attention from scholars. However, more research still needs to be done on how internet celebrities influence fans' purchase intention. The mechanism by which internet celebrities increase their fans' purchases of household energy-saving products urgently needs further investigation.

In the past, many scholars have analyzed the factors affecting consumers' intention to purchase energy-saving products from various angles. Scholars explored factors in terms of the consumers themselves, such as demography (gender, age, income, etc.) [8–10], ethics [11–14], attitudes, emotions, and awareness of the environment [15,16], and they also explore the factors of the external environment, such as media, policy incentives [17,18], price incentives [19], and ecological labels [20,21]. However, from the perspective of social influence, there needs to be more research on the impact of opinion leaders on the users' purchase of household energy-saving products. In the internet era, people obtain relevant information from influential people in online communities. Their values are easily influenced by influential people, thereby changing their attitudes and behaviors [22].

The closeness between users and media figures is called a "parasocial relationship", and it often has a big impact on how people decide what to buy. Although energy-saving products can have good economic and social benefits, they often cost more. So, rational persuasion alone is not enough to get people to buy these products. Instead, the close relationship between fans and internet celebrities is a big reason people buy energy-saving products that internet celebrities recommend.

This study uses social cognitive theory and parasocial interaction theory as the theoretical basis to explore the mechanisms by which the expertise and attraction of internet celebrities influence the intention of fans to purchase the energy-saving products they endorse. This study introduces parasocial relationships as a mediating variable from a relational perspective to explore its mediating role. Secondly, based on the characteristics of household energy-saving products, this study explores the moderating effect of fans' green self-efficacy on the relationship between the expertise and attraction of internet celebrities and the parasocial relationships formed between them and their fans.

This study has theoretical and practical contributions. In terms of theoretical contributions, the study extends the scope included in the environmental element of social cognitive theory. This study takes internet celebrities' characteristics as the external environment factor and explores its influence on fans' purchase intention of energy-saving products. Secondly, this study enriches the application scenario of parasocial interaction theory and explores the psychological mechanisms of fans' purchasing energy-saving products recommended by internet celebrities from the perspective of intimate relationships. Finally, the findings have practical implications for internet celebrities and governments attempting to urge households to purchase energy-saving products.

2. Theoretical Background and Hypotheses

2.1. The Impact of an Internet Celebrities' Expertise on the Audience's Purchase Intention

Expertise refers to the degree of knowledge of a specific object in a particular field, including authority, ability, or qualification [23]. Numerous studies have shown that as external sources of information for fans in online communities, internet celebrities' expertise affects fans' attitudes and subsequent behaviors [24–26]. Daneshvary & Schwer (2000) also pointed out in their study that expertise is a crucial information source for internet celebrities to obtain fans' recognition and attention [27]. Internet celebrities' professional knowledge increases fans' perceived credibility, which enhances their purchasing behavior. Endorsers with more professional knowledge are more persuasive and increase fans' stickiness with the brand [28,29]. When internet celebrities have more robust expertise in the fields of environmental protection and energy conservation, their ability to promote fans' understanding of the related costs and energy-saving effects of household energy-saving products is stronger, which is more conducive to fans making better decisions. Fans tend to

seek information and advice from internet celebrities when purchasing household energy-saving products. With increased interaction frequency, fans form a closer relationship with internet celebrities, gradually increasing their trust and intention to purchase household energy-saving products. Therefore, we can assume:

H1: *Internet celebrity expertise positively influences consumers' purchase intention.*

2.2. The Relationship between Internet Celebrities 'Attraction and Fans' Purchase Intention

Attraction is the first step in establishing a user relationship [30,31]. Previous research has shown that it is an important factor driving changes in user attitudes and behaviors in e-commerce and online contexts. Social cognitive theory suggests that individuals will take action plans closely related to the environment and intrinsic factors for various tasks required [32]. When users encounter problems in their daily learning work and lives, they seek help from the outside world. This study believes that when fans purchase household energy-saving products, they often want to know more about similar energy-saving products, compare the advantages and disadvantages of different energy-saving products, and then make a purchase. When an internet celebrity's popularity is high, they can provide various product comparison information for fans and meet their various needs before making purchase decisions. Through continuous interaction with an internet celebrity, fans' relationships become more intimate, and their understanding of household energy-saving products deepens, which increases their intention to purchase the product.

In addition to the ability of internet celebrities to help fans complete tasks related to decision points before purchasing a product, which will affect fans' intention to buy the product, the influence of the values they can bring to fans will also affect a fan's intention to buy energy-saving products. The social attraction of an influencer refers to the degree to which fans identify with its values and ideology, want to communicate with it, and establish intimate relationships with it [33], and the higher its social attraction, the higher the degree to which fans admire and respect it [34]. Therefore, when influencers are more socially attractive, fans identify more strongly with their values [35–37]. This study argues that when the social attraction of internet celebrities is more potent, the degree of their values about environmental and energy conservation among their fans is more profound, and the intention of fans to follow and learn from their behavior increases, in turn increasing their intention to purchase the household energy-saving products they endorse. Therefore, we can assume H2 and H3.

H2: *Internet celebrities' task attraction positively affects fans' purchase intention of household energy-saving products.*

H3: *Internet celebrities' social attraction of Internet celebrities positively affects fans' purchase intention to purchase household energy-saving products.*

2.3. The Mediating Role of Parasocial Relationships

Parasocial relationships often describe the intimate relationships between media figures and media users. The mediating role of parasocial relationships is supported by numerous scholars in the fields of vloggers, social media influencers, and so on. Aw and Chuah (2021) suggest that parasocial relationships mediate the social media influencers' content characteristics (i.e., attraction, prestige, expertise) and self-serving motives [38]. Liu et al. (2019) found that a vlogger's physical and social attraction increased the audience's evaluations of the brands endorsed by the vloggers, and these relationships were mediated by the parasocial interaction between the vloggers and the audience [39]. Sakib et al. (2020) highlight vloggers' credibility and physical attraction, but not homophily, as salient source characteristics that influence parasocial interaction, reinforcing the audience's compliance intention [40].

Social Cognitive Theory (SCT) emphasizes the influence of the environment on individuals, and it assumes that most people learn by observing others and then acquire cognitive changes in knowledge, skills, strategies, and attitudes [33]. In online community

contexts, people often seek help from internet celebrities. In the process of communicating with them, the characteristics of the source of information affect the attitude of fans in communicating and interacting with them [41]. For example, Bansal and Voyer (2000) found that consumers prefer to seek professional advice before purchasing [42]. The more professional internet celebrities are, the more likely people are to interact with them and reach an agreement [43]. Expertise is the basic condition for an influencer to gain fans' trust when selling household energy-saving products, and it makes fans understand more comprehensive information about energy-saving products. Secondly, the ability of internet celebrities to collect information about various energy-saving products and facilitate fans' better purchasing processes makes them more reliable and credible [34], which further promotes fans' interaction and communication with them and increases their intimacy with influencers. In addition, the attraction of influencers in terms of values and ideas has an important influence on the intention of fans to interact with them. Internet celebrities with high social attraction increase their interaction with fans by promoting their recognition of their environmental protection and energy-saving values, affecting their intention to purchase related products [44–46].

With more interactions between fans and internet celebrities, fans feel closer to internet celebrities, which makes them less uncertain about all kinds of information about household energy-saving products and more likely to buy them [47]. When fans form parasocial relationships with internet celebrities, they recognize their professional industry and values of environmental protection, resource conservation, and other aspects, thus increasing the intention to buy household energy-saving products. Accordingly, we propose Hypotheses H4–H6.

H4: *Parasocial relationships play a mediating role between the expertise of internet celebrities and the purchase intention of fans.*

H5: *Parasocial relationships play a mediating role between the task attraction of internet celebrities and the purchase intention of fans.*

H6: *Parasocial relationships play a mediating role between the social attraction of internet celebrities and the purchase intention of fans.*

2.4. The Moderating Effect of Green Self-Efficacy

The social cognitive theory is based on the idea that people's actions are affected by both their environment and themselves. When fans buy energy-saving products endorsed by internet celebrities, their characteristics will work together with fan characteristics to influence the fans' corresponding attitudes and behaviors. As a key factor in individual behavior change, green self-efficacy judges how much people value their own behavior, and it is an important motivation for behavior display, which mobilizes people's emotions, motivations, and behaviors and can influence the choice of active behavior [48]. Green self-efficacy is a concept proposed by scholars who introduced self-efficacy into the environmental field in the context of global green trends. It is a self-perception that refers specifically to an individual's self-evaluation of their ability to achieve environmental goals [49,50]. When fans have a strong sense of green self-efficacy, they believe that their energy-saving behaviors have a strong effect on the energy savings of society as a whole. They will actively seek out internet celebrities with strong expertise and attraction to interact with them in the online community context, asking them for information related to energy-saving products and interacting with them on various aspects, such as product purchase costs and energy-saving effects. Accordingly, we propose Hypotheses H7–H9.

H7: *Green self-efficacy plays a positive moderating role between internet celebrities' expertise and parasocial relationships.*

H8: *Green self-efficacy plays a positive moderating role between internet celebrities' task attraction and parasocial relationships.*

H9: *Green self-efficacy plays a positive moderating role between internet celebrities' social attraction and parasocial relationships.*

Based on the above analysis, the research framework is shown in Figure 1.
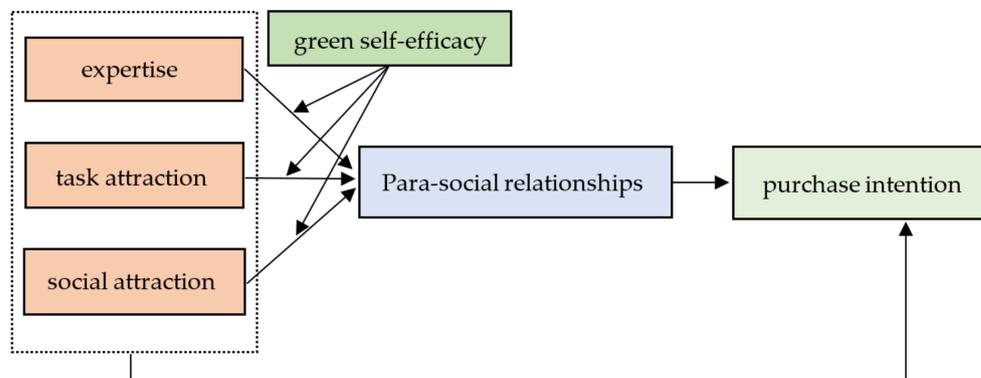
Figure 1. The research framework of intention to purchase energy-saving products.

3. Data Collection and Methodology

Data Collection and Sampling

This study uses a survey method. The questionnaire was distributed through the Credamo platform. Credamo is a professional questionnaire survey platform in China with more than 1.5 million subjects nationwide. Questionnaires are distributed on this platform, and random samples were selected for investigation in this study. The study also set up a screening question so that only consumers who had bought household energy-saving products recommended by internet celebrities could participate, and the rest would be stopped from filling out the questionnaire. Subjects were asked to recall an internet celebrity who had purchased household energy-saving products on their live streaming or short video platforms. Subjects who completed the questionnaire with good quality were rewarded with red packets. After eliminating invalid questionnaires, 334 valid questionnaires remained. Participant demographics are shown in Table 1.

Table 1. Consumer characteristics.

Variables	Item	Frequency	Frequency
Gender	Male	142	42.6%
	Female	192	57.4%
Age	Under 20	3	0.9%
	20–25	215	64.4%
	26–30	27	8.1%
	31–35	73	21.9%
	36–40	13	3.9%
	40 and above	3	0.9%
Education level	High school and secondary	6	1.8%
	specialized school	10	3.0%
	College degree	153	45.8%
	Bachelor and above	165	48.2%
Monthly income	Less than 157dollars	1	0.3%
	157–289 dollars	90	26.9%
	290–438 dollars	52	15.6%
	439–617 dollars	25	7.5%
	618–735 dollars	21	6.3%
	736–975 dollars	23	6.9%
	975 dollars above	122	36.5%

To ensure the quality of the questionnaires completed by the subjects, this study translates the developed scales drawn from foreign languages to make them fit the cultural

context and cognitive habits of Chinese people. At the same time, the test questions were designed appropriately, and instructions were written to state that the questionnaire's content was for academic research purposes only.

Expertise borrowing from the scale developed by Ohanian (1990) [29] and modifying it, the scale is measured by four questions: "I think the internet celebrity is knowledgeable", "The internet celebrity is an expert in the field of energy conservation and environmental protection", "The internet celebrity has extensive experience in selling household energy-saving products", and "The internet celebrity is qualified to sell household energy-saving products". Social attraction was measured using the scale used by Shen et al. (2019) [50] through the questions, "I think interacting with the internet celebrity would be helpful for me to buy household energy-saving products for my home", "I can communicate with the internet celebrity in a friendly way", "I have a good time with the internet celebrity", and "I approve of the internet celebrity's values on energy-saving and environmental protection". Task attraction was measured using the scale developed by Shen et al. (2019) [51] through the questions "I would rely on an internet celebrity if I want to complete the task of purchasing household energy-saving products for my home", "the internet celebrity can meet my needs in terms of purchasing household energy-saving products for my home", "the internet celebrity makes it easier for me to complete my household energy-saving products", and "I am confident in the performance of the household energy-saving products endorsed by the internet celebrity". The parasocial relationships were assessed using a Rubin et al. (1985) [52] scale, which included the questions "I look forward to exchanging knowledge about environmental protection and energy conservation with the internet celebrity", "I follow the internet celebrity when he appears on other online community platforms", "I would like to meet the internet celebrity in person", and "I feel that I am part of that internet celebrity's 'fan base'". Green self-efficacy was based on a scale developed by Chen [53], Shen et al. (2013) [54], and others, using the questions "I feel that I can successfully practice environmental ideas", "I feel that I am capable of helping to achieve environmental goals", "I feel confident that my energy-saving behavior will make a difference to the environment", and "I feel confident that I can change environmental issues through my own efforts". The Shelton and Yang (2005) [55] scale was used to assess product purchase intention; "I would like to buy the household energy-saving products recommended by the internet celebrity", "If necessary, I would buy the household energy-saving products recommended by the internet celebrity", and "I would like to recommend the household energy-saving products endorsed by the internet celebrity to my friends and relatives".

4. Data Analysis and Result

4.1. Measurement Model Analysis

AMOS 25.0 was used to test the fit of the structural model. The absolute fit index of the whole model was χ^2/df = 2.295 < 3, RMSEA = 0.048 < 0.05, GFI = 0.948 > 0.9, AGFI = 0.917 > 0.9, NFI = 0.958 > 0.9, TLI = 0.958 > 0.9, CFI = 0.985 > 0.9, all greater than 0.9, and all the fit indexes reached the standard. The results are shown in Table 2.

Table 2. Fit index values for the model.

Index	χ^2/df	GFI	AGFI	NFI	TLI	CFI	RMSEA
Standard	<3	>0.9	>0.9	>0.9	>0.9	>0.9	<0.05
Result	2.295	0.948	0.917	0.958	0.979	0.985	0.048

In this paper, SPSS26.0 software was used to analyze the reliability of the collected data, and the results are shown in Table 2. The Cronbach's α of each latent variable was greater than 0.7, indicating that the latent variables of this questionnaire had good reliability and the questionnaire had good internal consistency and stability. The Amos 25.0 software was also used to conduct validation factor analysis on each variable, and the results are

shown in Table 3. The factor loadings of each variable were all greater than 0.7, indicating that the observed variables could explain the latent variables well. The combined reliability (CR) of each variable was greater than 0.7, and the average variance extracted (AVE) was greater than 0.5, indicating that this questionnaire has good convergent validity.

Table 3. Results of the measurement model.

Variables	Loading	Cronbach's α	Composite Reliability	AVE
expertise	0.777	0.883	0.8843	0.6569
	0.793			
	0.868			
	0.801			
Social attraction	0.886	0.901	0.9018	0.6969
	0.828			
	0.819			
	0.804			
	0.780	0.897	0.8994	0.6911
Task attraction	0.839			
	0.842			
	0.862			
	0.791	0.844	0.8509	0.5893
Parasocial interaction relationships	0.786			
	0.668			
	0.817			
	0.828	0.940	0.9408	0.6945
	0.856			
	0.835			
Green self-efficacy	0.855			
	0.860			
	0.766			
	0.830			
	0.810	0.851	0.8537	0.6605
Product purchase intention	0.808			
	0.820			

Validity analysis was used to indicate the accuracy and validity of the measurement scale. The study used authoritative scales that have been validated several times, modified and optimized through data feedback from pre-research, and have good content validity. The results of the discriminant validity tests are shown in Table 4, which shows that the square root of AVE for each construct is greater than the correlation coefficient between itself and the other latent variables.

Table 4. Differential validity test results of variables.

Construct	Expertise	Social Attraction	Task Attraction	Parasocial Relationships	Green Self-Efficacy	Purchase Intention
expertise	0.810					
Social attraction	0.344 **	0.835				
Task Attraction	0.683 **	0.445 **	0.831			
Parasocial relationships	0.543 **	0.498 **	0.546 **	0.768		
Green self-efficacy	0.649 **	0.494 **	0.670 **	0.625 **	0.833	
Purchase intention	0.518 **	0.504 **	0.549 **	0.690 **	0.650 **	0.813

Note: (1) The diagonal boldface is the square root of AVE. (2) ** shows significance at the 0.01 level.

4.2. Structural Model Testing

Hypothesis Testing

1. The effects of the internet celebrities' expertise, social attraction, and task attraction on fans' intention to purchase products.

The standardized results derived from Bootstrap 1000 times indicated that the effect of expertise, social attraction, and task attraction to consumer purchase intention (β = 0.4704, t = 10.3129, p < 0.0001; β = 0.3094, t = 9.824, p < 0.0001; β = 0.4744, t = 11.4553, p < 0.0001) was significant, and internet celebrities' expertise, social attraction, and task attraction have a significant positive effect on fans' intention to product purchase, Hypotheses H1–H3 hold. The results are shown in Table 5.

Table 5. Path coefficients of the model.

Path	Path Coefficient	t-Value	Hypothesis	Results
EX → PIN	0.7040	10.3129 ***	H1	Supported
SA → PIN	0.3094	9.824 ***	H2	Supported
TA → PIN	0.4744	11.4553 ***	H3	Supported

Note: *** p < 0.001.

2. The mediating role of parasocial relationships.

The results of the mediation effect test through the Bootstrap 1000 procedure showed that the indirect effect (β = 0.2810, p < 0.001) was significant. The direct effect (β = 0.1894, p < 0.001) was significant between internet celebrities' expertise to product purchase intention, and the proportion of the indirect effect in the total effect was 59.74%. At the same time, expertise had a significant positive effect on parasocial relationships (β = 0.325, t = 4.270, p < 0.001), and parasocial relationships had a significant positive effect on fans' intention to purchase products (β = 0.345, t = 9.436, p < 0.001). In summary, it can be seen that parasocial relationships produce a significant partial mediating effect between expertise and consumer product purchase intention, and hypothesis H4 holds. Similarly, the total effect of social attraction and task attraction to fans' product purchase intention was significant for indirect effects (β = 0.1901, p < 0.001; β = 0.2665, p < 0.001), (β = 0.1194, p < 0.001; β = 0.2079, p < 0.001), and the proportion of indirect effects in the total effect was 61.42% and 59.74%. Social attraction has a significant positive effect on parasocial relationships (β = 0.284, t = 6.823, p < 0.001), and task attraction has a significant positive effect on parasocial relationships (β = 0.291, t = 3.901, p < 0.001). In summary, parasocial relationships play a partially mediating role between social attraction, task attraction, and intention to purchase fan products. Hypotheses H5 and H6 hold. The results are shown in Table 6.

Table 6. The mediating effect analysis.

Mediation Paths	Indirect Effects	Lower Bound	Upper Bound	*p*-Value
EX-PSI-PIN	0.2810	0.2050	0.3666	0.000
SA-PSI-PIN	0.1901	0.1403	0.2440	0.0001
TA-PSI-PIN	0.2665	0.1972	0.3450	0.000

3. The moderating role of green self-efficacy.

The moderating role of green self-efficacy was examined using latent moderated structural equations (LMS). The results show that the interaction terms of expertise and green self-efficacy (β = 0.693, t = 3.8272, p = 0.0002 < 0.001) and task attraction and green self-efficacy (β = 0.472, t = 2.6248, p = 0.0091 < 0.01) had significant effects on parasocial relationships. In contrast, the interaction term of social attraction and green self-efficacy had a non-significant effect on the parasocial relationship (β = −0.078, t = −0.4816, p = 0.6304). In summary, it can be seen that green self-efficacy produced a positive moderating effect during the influence of internet celebrities' expertise and task attraction on parasocial relationships. However, the moderating effect during the influence of social attraction on parasocial relationships was not significant, and Hypotheses H7 and H8 were held, while H9 was not.

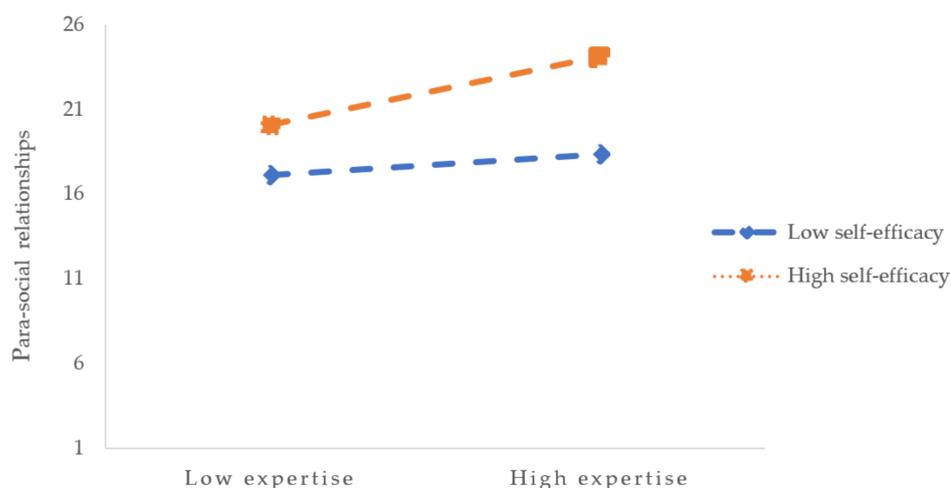The specific interaction pattern is shown in Figures 2 and 3.

Figure 2. The moderating effect of green self-efficacy with expertise.
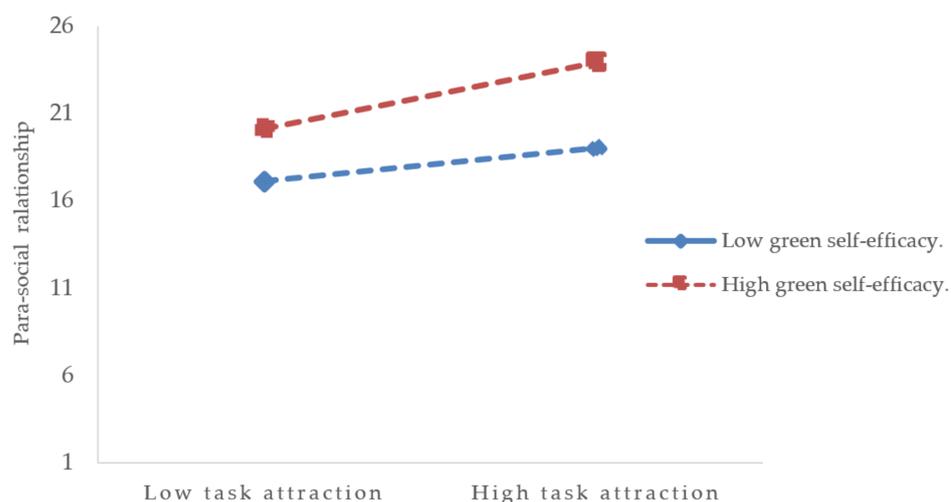

Figure 3. The moderating effect of green self-efficacy with task attraction.

5. Conclusions, Implications, and Limitations

5.1. Conclusions

This study set out to investigate the influence of internet celebrities on fans' purchase intentions for energy-saving products. The analysis was centered on the relationship between fans and internet celebrities. Using parasocial relationships from mass communication literature, this study investigated the "relationship" developed between fans and internet celebrities and the subsequent influence of that perception on energy-saving product purchase intentions. This was accomplished through a questionnaire study. Overall, the results of these studies found support for parasocial relationships as an energy-saving product diffusion management tool. This paper draws the following conclusions:

First, the expertise and attraction (social attraction, task attraction) of online celebrities have a positive impact on the consumers' intention to purchase energy-saving products in an online community context. Moreover, expertise and task attraction have a stronger effect on fans' intention to buy household energy-saving products; that is, fans are more likely to buy energy-saving products at good value through the recommendations of internet celebrities;

Second, parasocial relationships mediate the relationship between online celebrities' expertise, attraction (social attraction, task attraction), and fans' intention to purchase household energy-saving products;

Third, fans' green self-efficacy plays a positive moderating role between online celebrities' expertise, task attraction, and parasocial relationships and a less significant moderating role between online celebrities' social attraction and parasocial relationships.

5.2. Theoretical Contributions

First, based on social cognitive theory, this study investigates the factors influencing consumers' intention to purchase household energy-saving products recommended by online celebrities in an online community context, further broadening the application scenarios of social cognitive theory. Existing studies have not paid enough attention to promoting consumers' intention to purchase household energy-saving products from online celebrities. Even less research has been conducted exploring consumer behavior in this scenario based on social cognitive theory.

Second, this study analyzes the mechanism of parasocial relationships between online celebrities' expertise and attraction (task attraction, social attraction) to fans' product purchase intention, opening up the "black box" of consumer purchase and demonstrating the mediating role of parasocial relationships between online celebrities expertise and attraction (social attraction, task attraction) and fans' intention to purchase household energy-saving products. This is part of a growing area that moves PSI from the realm of TV personalities to use as an actual sale tool.

Third, this study further extends the application of self-efficacy in the environmental field. This study demonstrates that green self-efficacy interacts with the external environment, influencing fans' parasocial relationships with online celebrities. This study enriches the theory of self-efficacy.

5.3. Practical Implications

As evident in this study, internet celebrities can be an important force for household energy-saving product diffusion. In particular, it can be useful for establishing relationships with fans. Fans view internet celebrities who have expertise and attraction will likely develop PSI with them and have the same positive evaluations of energy-saving products the internet celebrities recommended. Overall, this paper has some practical implications.

First, this study can promote better marketing results for internet celebrities selling energy-saving products. The findings of this study provide guidance for internet celebrities to increase their influence and better persuade their fans to buy energy-saving products, facilitating better sales for household energy-saving products. The results of this study suggest that as a new force for promoting the proliferation of energy-saving products in the internet era, internet celebrities can increase their frequency of interaction and intimacy with their fans by increasing their own expertise and attraction (social attraction and task attraction), thereby increasing their trust and emotional attachment to them, reducing their resistance to their persuasive intentions when selling products, and thus increasing their intention to buy the energy-saving products they recommend. This increases the intention to buy the products they recommend.

Second, this study can provide new enlightenment for the government and other departments to promote people's energy-saving behavior with the help of social forces. In addition to promoting people's energy-saving behavior through policy promotion and economic subsidies, government departments should play an important role in promoting people's energy-saving behavior at the consumer end. Therefore, they can guide internet celebrities and other new forces to exert their influence, increase people's awareness of energy saving, and promote energy-saving behavior.

Third, this study can provide insights for brands or suppliers of energy-saving products to expand the sales channels of their products. This study analyses the impact of the characteristics of internet celebrities on promoting people's buying behavior, which has important implications for brands and suppliers of household energy-saving products in finding suitable partners to increase brand awareness and promote product sales.

5.4. Limitations

There are also some research limitations in this study, mainly the following:

First, consumer behavior in purchasing household energy-saving products is a complex process, and this study only explores the factors influencing consumers' intention to purchase household energy-saving products. There is a gap between consumers' intention to purchase and consumer purchasing behavior, influencing factors that need to be improved in the next study;

Second, at present, there is not much empirical research on the influence of internet celebrities on consumers' intention to purchase household energy-saving products, and this research is only in its infancy.

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