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Full Research Paper

The Relationship Between Social Presence and Online Shopping Consumer Behavior

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Abstract: In the context of the normalized prevention and control of the COVID-19 epidemic, the proportion of online shopping has increased. In order to help consumers regain the social on-the-spot experience of offline shopping in the online shopping environment, and promote the digital transformation and upgrading of e-commerce platforms, this research builds a theoretical model based on the stimulus-organism-response model. Using the survey data of 235 online shopping consumers, empirically analyzes how different dimensions of social presence in online shopping affect consumer experience, and thus consumer behavior. The results show that: 1. Perceived presence, emotional presence and understanding presence have positive effects on the purchase behavior and dissemination behavior of online shopping consumers respectively; 2. The sense of trust and entertainment play a partial intermediary role between social presence and the behavior of online shopping consumers. The conclusions of the study can provide comprehensive and diversified suggestions for e-commerce platforms and sellers, thereby enhancing the social presence of online shopping in a targeted manner based on consumer needs, increasing consumers' willingness to purchase and disseminate, and eventually promoting purchase behavior and dissemination behavior.

Keywords: social presence, S-O-R model, intermediary role, consumer behavior, e-commerce

1. INTRODUCTION

Since 2013, China has been the largest online retail market in the world for eight years. The COVID-19 epidemic has led to an increase in the stickiness of online consumption, and a large number of residents' consumer needs have shifted to online. Consumer needs such as online daily necessities, online medicine, and online education tend to be normalized. In 2020, China's online retail sales reached 11.76 trillion yuan, an increase of 10.9% compared with 2019. By December 2020, the number of online shopping users in China reached 782 million, accounting for 79.1% of the total netizens. It can be seen that more and more people choose time-saving, convenient, low-cost online shopping. With the rapid development of online shopping, many defects and problems are exposed, such as information security and product quality can't be guaranteed, user experience is not as good as offline shopping, and so on. The factors influencing consumer behavior are diversified and personalized. Social presence is one of them. Nowadays, there are also many ways to enhance social presence, such as VR shopping, virtual supermarket, live commerce and so on. Therefore, it will be the direction that many e-commerce platforms need to work hard to improve by enhancing the social presence of online shopping environment to optimize consumers' shopping experience, thus affecting their final purchase and dissemination behavior.

In recent years, most scholars have focused on exploring the relationship between social presence and consumer behavior. Some scholars have studied the intermediary role of flow experience between them^[1]. Flow experience is a feeling when consumers are immersed in a certain activity, but it is a large-scale single-dimensional concept, which can't explain all the experiences of consumers in online shopping. Studies have shown that consumer experiences, such as customer trust, entertainment, perceived usefulness and perceived risk, all affect consumer behavior^[2]. Most of the previous studies only studied the purchase behavior of consumers, paying little

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attention to their dissemination behavior^[3]. In view of this, this study attempts to build a theoretical model based on the S-O-R model, taking the three dimensions of social presence (perceived presence, emotional presence and understanding presence) as independent variables, sense of trust and entertainment as intermediary variables, and dividing consumer behavior into two aspects: buying behavior and dissemination behavior. Using the survey data of 235 online shopping consumers, this study empirically analyzes how social presence of different dimensions in online shopping affects consumer experience and thus consumer behavior. The empirical conclusions can enrich the analytical framework of social presence and consumer behavior, help online sellers make up for the losses and respond flexibly to the risks caused by the COVID-19 epidemic. They can also provide the basis and reference for promoting the high-quality development of e-commerce enterprises.

2. LITERATURE REVIEW

2.1 Social presence theory

Since it was put forward, social presence has been applied in many fields, such as communication media, distance education, network marketing and information system. Different fields have different definitions and understandings of it. After summarizing the previous studies, scholars' definitions of social presence can be divided into two types: technological determinism^[4] and social determinism^[5]. Technological determinism holds that social presence is a natural feature of the media, which enables users to experience the existence of others by giving them vision, hearing and feeling. Social determinism holds that social presence is not only the inherent attribute of the media itself, but also the user's perception of others' presence in the process of using the media. At the same time, most scholars believe that social presence is multidimensional. Among them, Shen and Khalifa (2008) put forward three dimensions of perceived presence, emotional presence and cognitive presence when studying the multidimensional characteristics of social presence in online communities^[6], which were widely recognized, verified and applied by subsequent scholars.

In the field of e-commerce, most scholars tend to agree with social determinism. Rogers et al. (2005) thought that social presence is a sense of immersion caused by belonging and perceived identity^[7]. Zhao et al. (2018), when studying the social impact of online user comments, thought that social presence is the degree to which the media makes users feel the existence of others^[8]. In the dimension division of social presence, Yu Tingting et al. (2014) thought that social presence reflected the effect of media communication, and proposed a hypothetical model of social presence in online shopping behavior, which divided social presence into two dimensions: commodity presence and personnel presence, which were generated by the network environment and online interaction respectively^[9]. Li Xuexin et al. (2019) divided the social presence in the platform economy into three dimensions: scene presence, interactive presence and emotional presence to study the influence of social presence on customer loyalty. The results showed that interactive presence and emotional presence have a positive impact on customer loyalty^[10]. Xie Ying et al. (2019) took live marketing as the background, combined with social presence theory, herd consumption theory and social encouragement theory. After detailed hypothesis and analysis, they thought that social presence in live marketing of e-commerce included three dimensions: coexistence presence, communication presence and emotional presence^[11].

2.2 The relationship between social presence and online shopping consumer behavior

The research on the relationship between social presence and online shopping consumer behavior can be summarized as the following two aspects. One is to study the relationship between multi-dimensional social presence and user behavior. For example, Lu Hongbing (2012) explored the influence of social presence in three different dimensions of perceived, emotional and cognitive presence on customers' stickiness tendency by constructing a scale. The test results showed that the scale of this study was very scientific and reliable, and it also

showed the intermediary role of trust, utilitarian value and entertainment value^[12]. Lu et al. (2016) summed up that the social presence of online community consists of three dimensions: others presence, web presence and communication presence. The three variables were taken as the social antecedents of trust, user purchase behavior as dependent variables, user comments, trust transfer and price fairness as control variables to build a theoretical model to study the influencing factors of users' purchase behavior in online social markets. The results showed that users' perceived presence is helpful for users to have a sense of trust in merchants, and then promote purchase behavior^[13]. Wang Jianrong (2020) also used the S-O-R model to explore the relationship between social presence and online consumers. He divided social presence into three dimensions: conscious, emotional and cognitive presence, and took the three dimensions of value perception as mediating variables. He finally came to the conclusion that social presence positively influenced purchase intention^[14].

The other is to set social presence as a single-dimensional variable, and use it as an independent variable or mediating variable with other variables to study the relationship between them and consumer behavior. For example, in the research of Elsamari and Mignon (2016), it was considered that the important influencing factors of consumers' purchase intention include social presence, perceived usefulness and trust, and it was assumed that different product types have a moderating effect between social presence and purchase behavior. Finally, it was concluded that different product types need different types and degrees of social presence^[15]. Yu Xin et al. (2017) considered the presentation of commodity information as a stimulating variable, and thought that it would stimulate consumers to have a sense of social presence, thus promoting the formation of trust and entertainment, then finally positively influencing their willingness to buy and recommend^[16]. Chong et al. (2018) studied the relationship among social presence, consumer trust and repurchase intention with Taobao as the research object. The results showed that social presence enhanced the trust of Taobao consumers, thus further enhancing their repurchase intention^[17].

3. RESEARCH DESIGN

3.1 Hypothesis

S-O-R model is widely used to study the psychology and behavior of consumers. At present, online shopping has become an important force to promote market development, more people are inclined to it. Based on this, this article explores the influence path of social presence on online shopping consumer behavior and makes corresponding assumptions based on the S-O-R model.

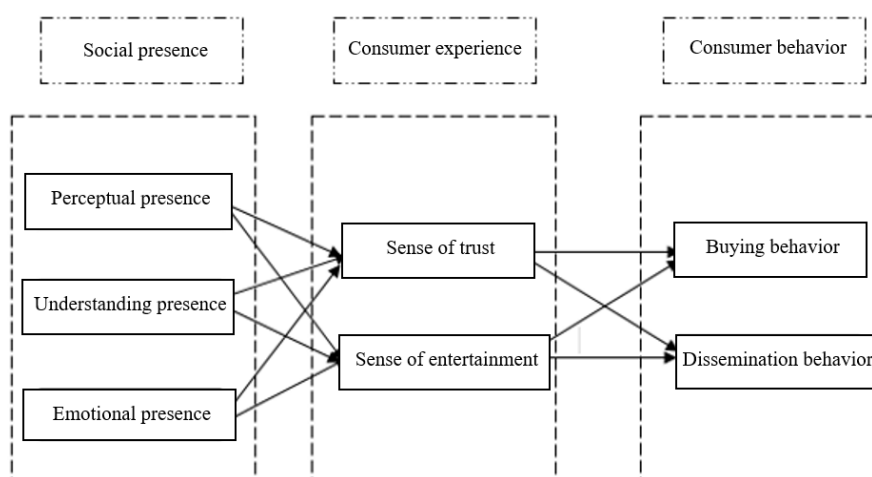


Fig 1. The influence path of social presence on online shopping consumer behavior

3.1.1 Social presence and consumer experience

Social presence can provide a basis for the generation of consumer experience, the details are as follows. Perception of the existence of others is a necessary prerequisite for online virtual social behavior. If customers feel the authenticity of other related parties such as merchants and customer service, they can reduce their worries and establish a trust relationship with sellers while also improving their entertainment experience^[18]. Trust is only generated in the social environment. A high social presence environment can promote the generation of trust among members. Social interaction produces emotional connection, which will more easily awaken the trust and entertainment of consumers^[19]. Consumers and sellers can understand each other's purpose, thus bringing more efficient communication that is more in line with each other's psychological expectations, which helps consumers to better accomplish shopping goals. Finally triggering their positive psychological reactions such as sense of trust and entertainment. Based on the above discussion, this paper puts forward the following assumptions:

H1a: Perceived presence positively affects consumers' sense of trust.

H1b: Understanding presence positively affects consumers' sense of trust.

H1c: Emotional presence positively affects consumers' sense of trust.

H1d: Perceived presence positively affects consumers' sense of entertainment

H1e: Understanding presence positively affects consumers' sense of entertainment

H1f: Emotional presence positively affects consumers' sense of entertainment.

3.1.2 Social presence and consumer behavior

Whether consumers can perceive the existence of other related parties, such as merchants and customer service, is the first step to generate purchase intention. Only when you feel their existence can you carry on a series of behaviors such as trying to know about products, communicating with merchants and buyers, generating purchase intention, deciding to buy, deciding to recommend and so on. Emotional connection occurs in the process of communication with merchants or other related parties. The intimacy and entertainment generated by emotional connection greatly affect the intrinsic motivation of consumers^[13], which has a great influence on consumer behavior. The mutual understanding between merchants and buyers leads to the improvement of communication quality and efficiency, which in turn contributes to consumers' satisfaction and purchase intention^[10]. If consumers are satisfied in the purchase process, they may even recommend the store to others. The higher the social presence, the higher the consumer's trust level to the seller, and more likely for consumers to purchase^[18]. Therefore, this paper puts forward the following assumptions:

H2a: Perceived presence positively affects consumers' purchase behavior.

H2b: Understanding presence positively affects consumers' purchase behavior.

H2c: Emotional presence positively affects consumers' purchase behavior.

H2d: Perceived presence positively affects consumer dissemination behavior.

H2e: Understanding presence positively affects consumer dissemination behavior.

H2f: Emotional presence positively influences consumer dissemination behavior.

3.1.3 Consumer experience and consumer behavior

Good experiential marketing can directly promote consumers' purchase intention. Customers' online shopping experience can make them have a positive impact on product impression, brand awareness and purchase intention. When consumers have feelings of trust, pleasure and love for goods, they will generate purchase intention and actively recommend the goods to friends^[20]. Therefore, this paper puts forward the following assumptions:

H3a: The sense of trust positively affects consumers' purchase behavior.

H3b: The sense of trust positively affects consumer dissemination behavior.

H3c: The sense of entertainment positively affects consumers' purchase behavior.

H3d: The sense of entertainment positively affects consumers' dissemination behavior.

3.1.4 The intermediary role of trust and entertainment

Merchants enhance social presence through the presentation of commodity information. Diverse and effective information presentation enables consumers to eliminate concerns about merchants and commodities and then generate trust; At the same time, the rich and interesting ways of presenting commodities make consumers relax physically and mentally, create a sense of entertainment, and ultimately affect consumers' willingness to buy and spread [16]. The research of Gefen& Straub (2004) proved that in the online trading environment, social presence promotes consumers to generate trust, thus contributing to the generation of purchase intention [21]. Lu Hongbing (2015) confirmed the intermediary role of trust and hedonic value between social presence and consumer stickiness [12]. Therefore, this paper puts forward the following assumptions:

H4a: The sense of trust plays an intermediary role in the relationship between social presence and consumers' purchase behavior.

H4b: The sense of trust plays an intermediary role in the relationship between social presence and consumers' dissemination behavior.

H4c: The sense of entertainment plays an intermediary role in the relationship between social presence and consumers' purchase behavior.

H4d: The sense of entertainment plays an intermediary role in the relationship between social presence and consumers' dissemination behavior.

3.2 Variable measurement and data collection

Based on the mature scales in domestic and foreign researches on social presence, online shopping, and consumer experience, the scale was compiled according to the characteristics of this study. The items were measured using the Likert five-point scale, with strongly disagree as 1 and strongly agree as 5. This study mainly used the form of questionnaires to conduct research. In order to ensure the content validity of the scale, a small pre-investigation was conducted before the formal investigation, and a total of 69 questionnaires were recovered. After the questionnaire was revised according to the feedback, the formal questionnaire was distributed in this study, and a total of 235 valid questionnaires were recovered.

4 DATA STATISTICS AND ANALYSIS

4.1 Descriptive analysis

In this survey, men account for 43.83% and women account for 56.17%. Women are indeed the main force of online shopping. The sample size is basically the same as the gender ratio of online shopping users. In terms of age, young people under 30 account for the majority, which is roughly the same as the age distribution of Internet shopping users. In terms of monthly disposable income, since most of the respondents in this survey are young people who are still in school or just started work with low income, 82.55% of disposable income is below 3,000. 96.6% of users have been online shopping for more than 2 years, and more than 90% of users have been online shopping for more than 2 times a month, which is in line with the development status of e-commerce in China.

Table 1. Basic information of respondents

Subject	Option	Total number of people	Proportion
Gender	man	103	43.83%
	woman	132	56.17%

Subject	Option	Total number of people	Proportion
Age	Under 18 years old	5	2.13%
	18-30 years old	185	78.72%
	30-40 years old	26	11.06%
	Over 40 years old	19	8.09%
Online shopping years	1 year and below	8	3.4%
	2-3 years	63	26.81%
	4-5 years	81	34.47%
	More than 5 years	83	35.32%
Monthly disposable income	Under 1000	31	13.19%
	1000-3000	163	69.36%
	3000-5000	18	7.66%
	5000-7000	11	4.68%
	Over 700	12	5.11%
Monthly online shopping frequency	1 and below	23	9.79%
	2-3 times	103	43.83%
	4-5 times	55	23.4%
	More than 5 times	54	22.98%

4.2 Reliability and validity analysis

In this paper, Cronbach's alpha coefficient method was used to test the reliability. After testing, the values of Cronbach's α coefficient are all greater than the reference standard of 0.7, indicating that the internal structure consistency between variables is high, and the questionnaire has good reliability. This paper uses factor analysis to test the construct validity of the questionnaire, which includes convergent validity and discriminant validity. Before factor analysis, KMO test and Bartlett sphericity test were performed first. The results are shown in Table 2. The KMO values of all variables are greater than 0.7, and the P value of the chi-square statistic of Bartlett sphericity test is less than 0.01. The next step of factor analysis can be carried out. In this paper, confirmatory factor analysis (CFA) is used to test the convergent validity of the model. The results are shown in Table 2. The factor loadings of all items are above 0.67, which is greater than the minimum standard of 0.5; the combined reliability (CR) is higher than 0.7, which is greater than the minimum standard of 0.6; the average coefficient of variation extraction (AVE) is greater than the minimum standard of 0.5; all indicators meet the requirements of the evaluation standard, indicating that the model has good convergent validity.

Table 2. Results of reliability and validity analysis

Variable	Number	STD	Cronbach's α coefficient	KMO	Bartlett spherical test Significance	AVE	CR
Perceived presence (PP)	pp1	0.780	0.740	0.753	.000	0.563	0.837
	pp2	0.782					
	pp3	0.674					
	pp4	0.761					
Emotional presence (EP)	ep1	0.890	0.808	0.713	.000	0.726	0.888
	ep2	0.802					
	ep3	0.862					

Variable	Number	STD	Cronbach's α coefficient	KMO	Bartlett spherical test Significance	AVE	CR
Understanding presence (UP)	up1	0.875	0.796	0.768	.000	0.625	0.869
	up2	0.800					
	up3	0.779					
	up4	0.697					
Sense of trust (ST)	st1	0.877	0.824	0.762	.000	0.658	0.885
	st2	0.801					
	st3	0.781					
	st4	0.783					
Sense of entertainment (SE)	sp1	0.836	0.843	0.810	.000	0.682	0.896
	sp2	0.846					
	sp3	0.755					
	sp4	0.863					
Purchase behavior (PB)	pb1	0.881	0.848	0.726	.000	0.766	0.908
	pb2	0.856					
	pb3	0.889					
Dissemination behavior (DB)	db1	0.839	0.818	0.711	.000	0.734	0.892
	db2	0.852					
	db3	0.879					

4.3 Correlation analysis

At the same time, the Pearson coefficient was used to judge the correlation between the variables. The discriminant validity of the model was tested by comparing the square root of the mean coefficient of variation (AVE) with the correlation coefficient between variables. As shown in Table 3, the square root of AVE (diagonal value in the table) is greater than the correlation coefficient between perceived presence, emotional presence, understanding presence, trust, pleasure, purchase behavior and communication behavior (in the table Lower triangle area value), indicating that the scale has good discriminant validity.

Table 3. Correlation among variables and AVE

	PP	UP	EP	ST	SE	PB	DB
PP	.750**						
UP	.440**	.852**					
EP	.425**	.676**	.791**				
ST	.409**	.674**	.648**	.811**			
SE	.484**	.609**	.695**	.655**	.825**		
PB	.457**	.591**	.602**	.644**	.596**	.875**	
DB	.457**	.682**	.690**	.630**	.613**	.723**	.856**

Note: ** means at 0.01 level (double tail), the correlation is significant.

4.4 Direct effect test

Correlation analysis shows the correlation among the variables, but if we want to verify the causal relationship among the variables, further analysis is needed. In this paper, we use the method of univariate linear regression in SPSS24.0 software for regression analysis. Perceived presence ($\beta=0.409$, $P<0.01$), understanding

presence ($\beta=0.574$, $P<0.01$) and emotional presence ($\beta=0.648$, $P<0.01$) all have significant positive effects on sense of trust. Perceived presence ($\beta=0.484$, $P<0.01$), understanding presence ($\beta=0.609$, $P<0.01$) and emotional presence ($\beta=0.695$, $P<0.01$) all have significant positive effects on entertainment, so assumption H1a-1f holds. Similarly, it can be seen from Table 4 that both assumption H2 series and H3 series are valid.

Table 4. Direct effect test results

Model	Standardized regression coefficient β	Adjust the post-R square	F	The significance	Result
PP → ST	.409	.164	46.806	.000	support
UP → ST	.674	.452	193.964	.000	support
EP → ST	.648	.417	168.527	.000	support
PP → SE	.484	.231	71.465	.000	support
UP → SE	.609	.368	137.150	.000	support
EP → SE	.695	.480	217.311	.000	support
PP → PB	.457	.205	61.391	.000	support
UP → PB	.591	.346	125.047	.000	support
EP → PB	.602	.359	132.143	.000	support
PP → DB	.457	.205	61.398	.000	support
UP → DB	.682	.463	202.753	.000	support
EP → DB	.690	.474	211.880	.000	support
ST → PB	.644	.412	164.714	.000	support
ST → DB	.630	.395	153.636	.000	support
SE → PB	.596	.352	128.348	.000	support
SE → DB	.613	.373	140.399	.000	support

4.5 Intermediary effect test

According to the previous standards for the test of intermediary variables, when the hypothetical intermediary variable is added between the independent variable and the dependent variable, if the coefficient of the independent variable is still significant and the absolute value becomes small, there is a partial intermediary effect; If the coefficient of the independent variable becomes insignificant, there is a complete mediating effect. It can be seen from the above that the three dimensions of social presence significantly affect purchase behavior and dissemination behavior. After adding trust and entertainment as intermediary variables in each regression model, the results are shown in Table 5 and Table 6. It can be seen that in the relationship between perceived presence, emotional presence, understanding presence and online shopping consumers' purchase behavior, the coefficients of the three independent variables are still significant ($P < 0.01$), and the regression coefficient is significantly reduced ($0.232 < 0.457$, $0.288 < 0.602$, $0.318 < 0.591$). Therefore, the sense of trust plays a partial intermediary effect in the relationship between the three dimensions of social telepresence and online shopping consumers' purchase behavior, so the hypothesis H4a is established. Similarly, H4b, H4c and H4d are assumed to be true.

Table 5. Test of mediating effect of trust

variable	PB		DB	
	Standardized regression coefficient β	significance	Standardized regression coefficient β	significance
PP	.232	.000	.239	.000
UP	.288	.000	.313	.000
EP	.318	.000	.486	.000

Table 6. Test of mediating effect of entertainment

variable	PB		DB	
	Standardized regression coefficient β	significance	Standardized regression coefficient β	significance
PP	.219	.000	.209	.000
UP	.363	.000	.491	.000
EP	.362	.000	.511	.000

5. CONCLUSION

The empirical results show that the research model can effectively explain the relationship between social presence and online shopping consumer behavior, and all the hypotheses put forward in this study have been verified. The main conclusions are as follows:

First, the test of the direct effect of social presence on online shopping consumers' behavior shows that the three dimensions of social presence: perceived presence, emotional presence and understanding presence have a significant positive impact on online shopping consumers' purchase behavior and dissemination behavior.

Secondly, the test of the mediating effect of social presence on online shopping consumers' behavior shows that the promoting effect of social presence on online shopping consumers' purchase and dissemination behavior is partially mediated by the sense of trust and entertainment. This conclusion supports the results that social presence has a significant direct effect on online shopping consumers' purchase and dissemination behavior in the model test, the conclusion that social presence can promote consumers' sense of trust and entertainment, and that consumers' purchase and dissemination behavior is significantly affected by consumers' sense of trust and entertainment in the context of online shopping.

6. SUGGESTIONS

Online shopping is an important force to promote market development. In order to stimulate the vitality of market players and create a model for high-quality development, we should adhere to the supply side structural reform and demand side management, create new consumption modes such as cloud shopping. Develop new business forms such as live e-commerce, "small program" e-commerce and social e-commerce. Create a social situation of immersive, experiential and interactive online shopping. Take multiple measures to improve consumers' sense of social presence, strengthen trust experience and pleasant experience, and promote consumers' behavior. According to the empirical research conclusion, the specific recommended measures are as follows:

First of all, we should design and improve web pages, platforms, merchants, customer service, anchor and other parties from all aspects, enrich service formats, enhance the design expression of video, 3D and VR, pay attention to consumption scenes and interactive injection, and comprehensively improve consumers' perception, emotion and understanding of presence. At the same time, pay attention to improving product quality, accelerating service iteration, optimizing platform design, paying attention to customer interaction, reducing consumers' perceived risk of online merchants and goods, enriching the online interaction and cooperation process, and enhancing consumers' sense of trust and pleasure in the shopping process. By carrying out feedback activities such as community punch in, sharing cash back, providing points with comments, recommending and providing coupons, create a pleasant store and community atmosphere, let consumers have emotional sustenance for stores, brands and products through participation in activities. Eventually, benign interaction will be realized, and then promote the dissemination behavior of consumers, release consumption potential and improve business activity.

REFERENCES

- [1] Ma Yuzhen. (2017). Research on the influence of social presence on online shopping willingness. Ms Thesis. Xinjiang: Xinjiang university of finance. (in Chinese)
- [2] Gefen, D., Karahanna, E. & Straub, D. W. (2003). Trust and TAM in online shopping: an integrated model. *MIS Quarterly*, 27(1), 51-90.
- [3] Bi Jidong. (2010) Research on the influence of negative online word-of-mouth on consumers' behavioral will. Ms Thesis. Shandong: Shandong University. (in Chinese)
- [4] SHORT J, WILLIAMS E, CHRISTIE B. (1978). The social psychology of telecommunications. *Contemporary Sociology*, 7 (1): 32.
- [5] Charlotte N. Gunawardena, Frank J. Zittle. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *American Journal of Distance Education*, 11 (3): 8-26
- [6] Shen K.N., Khalifa M. (2008). Exploring multidimensional conceptualization of social presence in the context of online communities. *International Journal of Human-Computer Interaction*, 24(7), 722-748.
- [7] Rogers P., Lea M. (2005). Social presence in distributed group environments: The role of social identity. *Behavior & Information Technology*, 24(2):151-158.
- [8] Zhao K, Stylianos A C, Zheng Y. (2018). Sources and impacts of social influence from online anonymous user reviews. *Information & Management*. 55(1):16-30.
- [9] Yu Tingting, Dou Guanghua. (2014). The application of social presence in the study of online buying behavior. *Research on network communication*,36(5): 133-146. (in Chinese)
- [10] Li Xuexin, Huang Weijie, Guo Chen. (2019). The influence of social presence on customer loyalty under platform economy. *Journal of Shenyang Normal University (Social Science Edition)*,43(4):68-73. (in Chinese)
- [11] Xie Ying, Li Chunqing, Gao Peng, Liu Yi. (2019). Research on the influence and mechanism of social presence on online herd consumption in live marketing-from the perspective of behavior and neurophysiology. *advances in psychological science*,27(6):990-1004. (in Chinese)
- [12] Lu Hongbing. (2012). Research on the relationship between social presence and stickiness tendency in B2C online stores. Ms D Thesis. Dalian: Dalian University of Technology. (in Chinese)
- [13] Lu B Z, Fan W G & Zhou M. (2016). Social presence, trust, and social commerce purchase intention: An empirical research. *Computers in Human Behavior*, (56):225- 237.
- [14] Wang Jianrong. (2020). Correlation analysis between presence and online consumers' buying behavior. *Business Economics Research*, (8):114-117. (in Chinese)
- [15] Elsa Mari, Mignon Reyneke. (2016). The Influence of Social Presence on Online Purchase Intention: An Experiment with Different Product Types. https://doi.org/10.1007/978-3-319-24184-5_49.
- [16] Yu Xin, Xu Zhengliang, Guo Wenjun. (2017). A study on the influence of online merchants' product information presentation on consumers' willingness to act-model building based on social presence theory. *Intelligence Theory and Practice*,40(10):80-84. (in Chinese)
- [17] Chong A Y L, Lacka E, Li B, et al. (2018). The role of social media in enhancing guanxi and perceived effectiveness of E-commerce institutional mechanisms in online marketplace. *Information & Management*, 55(5): 621-632.
- [18] OU C X, PAVLOU P A, DAVISON R M. (2014). Swift Guanxi in online marketplaces: the role of computer-mediated communication technologies. *MIS Quarterly*,38(1):209-230.
- [19] SONG K, FIORE A M, PARK J. (2007). Presence and fantasy in online apparel shopping experience. *Journal of Fashion Marketing and Management: An International Journal*,11(4):553-570.
- [20] Nikolaos Pappas. (2016). Marketing strategies, perceived risks, and consumer trust in online buying behavior. *Journal of Retailing and Consumer Services*, 29:92-103.
- [21] Gefen, D., & Straub, D. W. (2004). Consumer trust in B2C e-commerce and the importance of social presence: Experiments in e-products and e-services. *Omega*, 32(6), 407–424.