

Nostalgia Stimulation and Purchase Intention of Time-honored Brands in The Context of E-commerce Live Broadcasting: Based on Social Presence Perspective

Zixin Xu ^{1, a *}, Shuang Qiu ^{1, b}, and Shihan Zhang ^{1, c}

¹Business and Tourism School, Sichuan Agricultural University, Chengdu, 611830, China;

^a xzxvera@sina.com, ^b 2320515995@qq.com, ^c 894810130@qq.com

Abstract. Based on the perspective of social presence theory, this study uses SOR theory to establish a research model. Data were collected from 272 valid questionnaires by snowballing on WeChat social platform. The model explore the influencing factors of nostalgia stimulation and purchase intention of old products, as well as the mediating role of nostalgia. The results indicate that: (1) Emotional presence and communicational presence had a significant positive effect on nostalgia emotion, except coexistence presence; (2) Emotional presence, communicational presence, and nostalgia emotion had a positive effect on the willingness to purchase of time-honored products, except coexistence presence; (3) Nostalgia emotion partially mediated the effect of emotional presence on willingness to purchase; (4) Nostalgia emotion partially mediated the effect of communicational presence on willingness to purchase. These findings enrich the literature related to the time-honored brand in the context of live broadcasting and provide a basis and reference for enterprises to use online channels to promote the time-honored brand.

Keywords: Social Presence, Nostalgia Emotion, Time-honored Brand, Purchase Intention, E-commerce Live Broadcasting.

1. Introduction

The time-honored brand is widely recognized and praised by the society because it inherits the excellent national culture, shows the distinct regional cultural characteristics, has the unique nostalgic value, the historical value and the good reputation. However, due to its outdated organizational structure, weak innovation and other reasons, time-famous brands are unable to adapt to the changes of The Times and respond to market responses quickly, and it becomes difficult to attract new customers and maintain old customers [1]. Therefore, in the digital age, how to let the time-honored brand regain the favor of consumers has become an important topic in the field of marketing and brand management.

Webcasts have received increasing attention on various social media platforms [2]. In 2022, nearly 350 Chinese time-honored brands will participate in live broadcasts on major platforms, with more than 50,000 live broadcasts and a turnover of over 3.5 billion yuan [3]. "Live +" has become a favorable way for time-honored brands to open the online market, and it is an important way for brand rejuvenation in the information age. How to use live broadcast to revive time-honored brands becomes an interesting research topic.

Public nostalgia focusing on social connection has a positive impact on brand awareness and brand attachment [4]. Thus, nostalgia plays a role in brand promotion. However, young people do not want to be out of date, are willing to pursue trends and like novel products, while the elderly are more inclined to buy familiar products [5], so nostalgia or the purchase of time-brand products is more common in the elderly group. Based on the tradition of generations living in the same house in China, intergenerational influence is very significant, which means that information and beliefs are transmitted from one generation to the next and have an impact on the next generation, including consumption [6]. Therefore, the audience of this study is universal in all age groups. Studies on consumer nostalgia arousal mainly involve the nostalgic characteristics of advertisements or brands [7] and offline scenes [8], and rarely combine the stimulating factors of nostalgia with the background of live broadcasting. The sense of presence is considered to be an important factor in

understanding individual behaviors in the online environment. The sense of social presence in the live broadcast context will bring the "immersive" feeling of direct contact between consumers and sellers, which plays a certain role in stimulating consumers' emotions [9]. In order to solve these gaps, based on the characteristics of face-to-face interaction between anchors and consumers in e-commerce live broadcasting and real-time bullet screen interaction between consumers in live broadcasting, combined with SOR model, this study focuses on the sales process of time-honored brand products under the background of live broadcasting from the perspective of social presence. The mechanism of nostalgia-induced emotion in live broadcast scenes and the formation mechanism of time-honored brand product purchase intention were revealed.

2. Literature Review and Hypothesis

2.1 Social Presence

Xie Ying et al. [10] proposed the measurement of social presence in the live broadcast marketing environment, and proposed that social presence in the live broadcast context includes three dimensions: coexistence presence (GCLC), communication presence (JLLC) and emotional presence (QGLC), considering the real-time and three-dimensional nature of social presence interaction and the complexity of communication members.

Coexistence presence is defined as the degree of physical presence and accompaniment in live-streaming interactions, including the connection individuals feel with others across time and space. In travel live shopping, the higher level of physical presence that consumers experience in the virtual world seems to be related to their ability to remember certain types of information [9]. In the time-honored live broadcast, consumers who experience a higher level of coexistence presence have a greater ability to experience nostalgia, and thus generate more nostalgia. Communication presence refers to the fluency of individuals in communicating with others during live broadcasting, including the emotional experience brought by social interaction. Zheng[11] proposed that the interactivity reflected in the interaction between anchors and consumers in live broadcasting is a kind of atmosphere clue that can affect consumers' emotions. Emotional presence is defined as the significant degree of emotional relationship when individuals interact with others in live broadcasting [10]. In the context of time-honored brand e-commerce live broadcasting, consumers and others online at the same time will stimulate the immersive feelings of users and peers together, interaction with others, other users displayed in the text reply will be used as a stimulus to stimulate personal nostalgia for time-honored brands. Based on this, the hypothesis is proposed:

H1a: Coexistence presence has a positive effect on nostalgia.

H1b: Communication presence has a positive effect on nostalgia.

H1c: Emotional presence has a positive effect on nostalgia.

2.2 Purchase Intention

In the field of consumer behavior, relevant studies show that nostalgia does affect consumer behavior [12]. With the improvement of personal nostalgia level, consumers' willingness to buy brands increases significantly [13]. Emotional engagement also plays an important role in changing individual behavior. In a study on the hotel industry, it is found that consumers' emotional connection with the hotel will affect their purchasing behavior [14]. When consumers are in the broadcast room of time-honored brands, the nostalgic emotions stimulated by pictures or words will narrow the emotional connection between consumers and time-honored brands, thus affecting consumers' purchase intention. In the relevant research on live streaming, some scholars pointed out that social networking can also be one of the factors influencing consumers' purchase intention [15]. Social interaction will increase consumer trust and have a positive impact on purchase intention [16]. The evaluation lag in the traditional trading scene no longer exists in the live broadcast scene. Consumers can query the product evaluation in real time in the live broadcast barrage, and these

clues will be the effective consideration for consumers to purchase products [17]. Based on the above, the following hypothesis is proposed:

H2: Nostalgia has a positive effect on purchase intention.

H3a: Coexistence presence has a positive effect on purchase intention.

H3b: Emotional presence has a positive effect on purchase intention.

H3c: Communication presence has a positive effect on purchase intention.

2.3 Mediating effect

Hassanein believed that improving the design of text and pictures could enhance the sense of social presence, which would then have a positive impact on consumers' perceived usefulness, trust and shopping pleasure, and form a more positive attitude [18]. Therefore, in the time-honored broadcast room with complete scene design and integrated graphics to send and implement the barrage, Consumers are more closely related to the perception of anchors and other users, which increases the possibility of stimulating nostalgia, while increasing the perceived usefulness of products, and further increasing the willingness to shop.

Communication and emotional sharing among consumers will trigger memories and promote nostalgia [19]. In the live broadcast room, consumers communicate with others through the bullet screen, share real-time feelings, and promote the generation of nostalgia, which is transformed into the intermediary variable of the sense of presence into the purchase intention, and further stimulate consumers to purchase time-honored brand products.

Emotion or emotional response involves the consumer's emotional feelings towards an object. Meanwhile, cognitive responses, including inferences about product and service quality, follow emotional states [20]. Therefore, in the process of interaction between consumers and other users, the emotional impact generated during interaction will further promote the production of consumer cognitive response and increase consumers' purchase willingness. Based on the above, the following hypothesis is proposed:

H4a: Nostalgia plays a mediating role in the influence of coexistence presence on purchase intention.

H4b: Nostalgia plays a mediating role in the influence of communication presence on purchase intention.

H4c: Nostalgia plays a mediating role in the influence of emotional presence on purchase intention.

3. Data and Analysis

In this study, the questionnaire design and measurement items were all adopted the maturity scale in previous studies. For the measurement of independent variable social presence, use the medium scale of Xie Ying et al. [10] for reference; To measure the purchase intention of the dependent variable, refer to the scale in the study of Kumar et al. [21]. For the measurement of nostalgia as an intermediary variable, refer to the scale in the research of Chen et al. [22]. In the form of questionnaire links, 84 pre-test questionnaires were randomly distributed on WeChat platform, and 72 questionnaires were effectively recovered. SPSS software was used for reliability analysis of the pre-test data. Cronbach's α coefficient was 0.934, greater than 0.9, indicating good reliability of the questionnaire. Then, the validity test of the questionnaire was conducted, and KMO value was 0.873, greater than 0.8, and P value was 0.000, less than 0.01, indicating good validity of the questionnaire. The cumulative variance interpretation rate was 76.937% and f was greater than 70%, indicating that the scale was well interpreted. This pre-test group, including male and female, covers all age groups, and covers all levels of education and income.

The formal survey questionnaire was recovered in the form of snowball on WeChat social platform, and the screening item "How many times have you had live shopping experience?" was set to ensure that all subjects had live shopping experience and were familiar with the live shopping

process. A total of 348 questionnaires were issued in this study, and a total of 272 valid questionnaires were recovered. In this study, SPSS 25.0 software was used to test the reliability and validity of the scale. The results showed that the Cronbach's α value of the total volume table was 0.884, and the Cronbach's α value of each variable was between 0.695 and 0.892, all of which were greater than the test standard of 0.6. Therefore, the scale had acceptable reliability. At the same time, Harman single factor test was used to test the common method bias, and the unrotated first factor only explained 40.495% of the total variance, less than 50% [23], so there was no obvious common method bias in this model. The KMO value is 0.921, more than 0.8, with good validity, and the P value is 0.000, less than 0.05, which can be used for further factor analysis. AMOS 23.0 software was used for validity testing to test the differential validity of the research scale. As shown in Table 1, CR value of all variables greater than 0.6 meets the test standard, AVE value is close to 0.5, and AVE value between 0.36 and 0.5 is acceptable, while AVE value greater than 0.5 is the ideal test standard [24]. The AVE value also reached the test standard, and the square root of the AVE value of the variable was greater than the correlation coefficient between the variables. Therefore, the differential validity of the scale was good.

Table 1 Structural reliability and correlation analysis

Variable	CR	GCLC	JLLC	QGLC	PI	NE
GCLC	0.6976	0.4388				
JLLC	0.7765	0.108***	0.4677			
QGLC	0.7417	0.111***	0.124***	0.4906		
PI	0.7342	0.092***	0.098***	0.105***	0.4794	
NE	0.8931	0.098***	0.109***	0.114***	0.102***	0.513
AVE ^{1/2}		0.662	0.684	0.700	0.692	0.716

Note: NE- nostalgia; PI- intention to buy; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Confirmatory factor analysis was performed on all the variables of the scale, and the RMSEA value was less than 0.08 (RMSEA=0.057), CMIN/df value was less than 3 (CMIN/df=1.879), and GFI(0.937), IFI(0.938), TLI(0.926) and CFI(0.937) values were all greater than 0.9, so the model had a good fitting effect. SPSS 25.0 was used to test whether the model had multicollinearity and autocorrelation. VIF values in all regression models are less than 5, and tolerance is greater than 0.1, indicating that the model has no significant multicollinearity. In addition, the test results of Durbin-Watson are all close to 2, indicating that the model has no autocorrelation.

It can be seen from Table 1 that coexistence presence, communication presence and emotional presence are related to purchase intention and nostalgia, but it is not known whether there is a causal relationship. At the same time, as this paper explores the relationship between nostalgia and presence in live broadcast scenes, PLS-SEM, which is more suitable for exploratory models, is established for main effect analysis. The analysis software used is SmartPLS 3.3.9.

Table 2 Path analysis results

Hypothesis	β	<i>S.E.</i>	<i>T</i>	<i>P</i>	Remark
H1a: NE<---GCLC	0.139	0.072	1.937	0.053	Unsupport
H1b: NE<---JLLC	0.341	0.076	4.494	***	Support
H1c: NE<---QGLC	0.230	0.065	3.545	***	Support
H2: PI<---NE	0.316	0.069	4.569	***	Support
H3a: PI<---GCLC	0.140	0.074	1.888	0.059	Unsupport
H3b: PI<---QGLC	0.184	0.072	2.566	0.010	Support
H3c: PI<---JLLC	0.157	0.074	2.123	0.034	Support

Note: NE- nostalgia; PI- intention to buy; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Using Bootstrapping in SmartPLS 3.3.9, 5000 random samples were sampled to test the mediating effect. The results are shown in Table 3. Nostalgia has a partial mediating effect between emotional presence and purchase intention, and nostalgia has a partial mediating effect between

communication presence and purchase intention. This shows that consumers are influenced by anchors and scene atmosphere in time-honored brand live broadcast to stimulate their own nostalgia and promote the purchase decision making.

Table 3 Test of mediating effect

Hypothesis	Independent Variable	Dependent Variable	Z	Indirect Effect	Total Effect	VAF (%)	Mediating Role
H4b	JLLC	PI	3.061	0.108	0.265	40.75	Partial Mediation
H4c	QGLC	PI	2.474	0.072	0.257	28.02	Partial Mediation

4. Conclusion and Suggestion

The results showed that: (1) coexistence presence had no positive influence on nostalgia, but both emotional presence and communication presence had significant positive influence on nostalgia. (2) Both emotional presence and communication presence have a significant positive impact on consumers' purchase intention for time-honored products. (3) Nostalgia has a significant positive impact on consumers' purchase intention for time-honored products. (4) Nostalgia plays a mediating role between emotional presence, communication presence and purchase intention.

By exploring the stimulating mechanism of nostalgia and the formation mechanism of purchase intention of time-honored brand products under the background of live broadcasting, this paper provides enlightenment for practitioners of live broadcasting business. This paper puts forward the following suggestions: (1) Consumers' nostalgia can be stimulated by the sense of communication and emotional presence brought about by the time-honored live scene, thus affecting consumers' purchase intention. Under the impact of the Internet, time-honored brands are facing the dilemma of derailing the market, so they have to find ways to keep up with the trend of The Times and add new vitality. The live broadcast technology allows time-honored brands to bloom new charm in the new era. (2) In the context of live broadcasting, the host can mention the information that arouses nostalgia and make use of consumers' nostalgic feelings to improve the purchase intention of time-honored products. (3) The conclusion of this paper points out that consumers feel the nostalgic signals brought by the communication of other users in the time-honored brand broadcast room and the nostalgic emotions generated by emotional stimulation will stimulate consumers to have nostalgic feelings, further narrow the distance between consumers and time-honored brands, enhance brand trust, and increase the possibility of consumers to buy brand products. Therefore, when time-honored enterprises use live broadcast to sell products, attention should also be paid to the layout of the scene in the live broadcast room.

References

- [1] Zhang Y, Guo X. "New and old": Consumer evaluations of co-branding between new brands and Chinese time-honored brands[J]. *Journal of Retailing and Consumer Services*, 2023, 73: 103293.
- [2] Lin Y, Yao D, Chen X. Happiness begets money: emotion and engagement in live streaming[J]. *Journal of Marketing Research*, 2021, 58(3): 417-438.
- [3] Headline[EB/OL]. [2023-03-06].
- [4] https://www.toutiao.com/article/7207111608558944800/?channel=&source=search_tab.
- [5] Chae H, Baek M, Jang H, et al. Storyscaping in fashion brand using commitment and nostalgia based on ASMR marketing[J]. *Journal of Business Research*, 2021, 130: 462-472.
- [6] Zhang P, Shi X, Liu W, et al. The impact of extended product fit on brand loyalty: The road to durability and success for long-established enterprise [J]. *Economic Analysis and Policy*, 2023, 77: 1055-75.

- [7] Escario J-J, Wilkinson A V. The Intergenerational Transmission of Smoking Across Three Cohabitant Generations: A Count Data Approach [J]. *Journal of Community Health*, 2015, 40(5): 912-9.
- [8] Volpert J, Michel G. Brand resurrections: How past and present narrations impact consumer reactions towards resurrected utilitarian brands[J]. *Journal of Business Research*, 2022, 153: 479-493.
- [9] Song H, Xu J B, Kim J H. Nostalgic experiences in time-honored restaurants: Antecedents and outcomes[J]. *International Journal of Hospitality Management*, 2021, 99: 103080.
- [10] Xu X, Huang D, Shang X. Social presence or physical presence? Determinants of purchasing behaviour in tourism live-streamed shopping[J]. *Tourism Management Perspectives*, 2021, 40: 100917.
- [11] Xie Y, Gao P, Li C Q. Research on social presence in live broadcasting: scale development and validity test [J]. *Nankai Business Review*, 2021, 24(03): 28-38.
- [12] Zheng S, Chen J, Liao J, et al. What motivates users' viewing and purchasing behavior motivations in live streaming: A stream-streamer-viewer perspective[J]. *Journal of Retailing and Consumer Services*, 2023, 72: 103240.
- [13] Rutherford J, Shaw E H. What was old is new again: The history of nostalgia as a buying motive in consumption behavior[C]//*Proceedings of the Conference on Historical Analysis and Research in Marketing*. 2011, 15: 157-166.
- [14] Marchegiani C, Phau I. Effects of personal nostalgic response intensity on cognitions, attitudes, and intentions[J]. *Journal of Research in Interactive Marketing*, 2010.
- [15] Han H, Kim W, Hyun S S. Overseas travelers' decision formation for airport-shopping behavior[J]. *Journal of Travel & Tourism Marketing*, 2014, 31(8): 985-1003.
- [16] Ming J, Jianqiu Z, Bilal M, et al. How social presence influences impulse buying behavior in live streaming commerce? The role of SOR theory[J]. *International Journal of Web Information Systems*, 2021, 17(4): 300-320.
- [17] Liu Z, Yang J, Ling L. Exploring the influence of live streaming in mobile commerce on adoption intention from a social presence perspective[J]. *International Journal of Mobile Human Computer Interaction (IJMHCI)*, 2020, 12(2): 53-71.
- [18] Bilal M, Akram U, Rasool H, et al. Social commerce isn't the cherry on the cake, it's the new cake! How consumers' attitudes and eWOM influence online purchase intention in China[J]. *International Journal of Quality and Service Sciences*, 2022, 14(2): 180-196.
- [19] Hassanein K, Head M. Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping[J]. *International journal of human-computer studies*, 2007, 65(8): 689-708.
- [20] Gu Q, Li M, Kim S S. The role of nostalgia-evoking stimuli at nostalgia-themed restaurants in explaining benefits, consumption value and post-purchase behavioral intention[J]. *International Journal of Hospitality Management*, 2021, 96: 102955.
- [21] Laroche M, Li R, Richard M-O, et al. An investigation into online atmospherics: The effect of animated images on emotions, cognition, and purchase intentions [J]. *Journal of Retailing and Consumer Services*, 2022, 64: 102845.
- [22] Kumar S, Prakash G, Gupta B, et al. How e-WOM influences consumers' purchase intention towards private label brands on e-commerce platforms: Investigation through IAM (Information Adoption Model) and ELM (Elaboration Likelihood Model) Models[J]. *Technological Forecasting and Social Change*, 2023, 187: 122199.
- [23] Chen H B, Yeh S S, Huan T C. Nostalgic emotion, experiential value, brand image, and consumption intentions of customers of nostalgic-themed restaurants[J]. *Journal of Business Research*, 2014, 67(3): 354-360.
- [24] Talwar S, Dhir A, Khalil A, et al. Point of adoption and beyond. Initial trust and mobile-payment continuation intention[J]. *Journal of Retailing and Consumer Services*, 2020, 55: 102086.
- [25] Purnomo Y W. A Scale for Measuring Teachers' Mathematics-Related Beliefs: A Validity and Reliability Study[J]. *International Journal of Instruction*, 2017, 10(2): 23-38.