

How does the activity of E-commerce streamer information sources impact consumers' stickiness? A dual-path study of affective attachment and consumer-streamer identification

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Abstract. With the advent of the era of live e-commerce and experience economy, many enterprises in the world have resorted to live broadcast to sell their products. As an important information source, e-commerce streamer not only introduces and sells products during the live broadcast, but also affects consumers' emotion and psychology. Therefore, this paper introduces three factors of e-commerce streamer information source activity, emotional attachment and consumer-streamer identification to explore the relationship between streamer characteristics and consumer stickiness. Based on a survey of 427 consumers in China, it is found that there is a significant positive correlation between the activity of e-commerce streamers' information sources and their emotional attachment, and there is a significant positive correlation between e-commerce streamers' activity and consumers-streamer' identification; There was a significant positive correlation between consumer emotional attachment and user stickiness. And based on the above conclusions, relevant suggestions are put forward for the industry.

Keywords: E-commerce streamer information source activity; Emotional attachment; Consumer-streamer identification; User stickiness

1 Introduction

In today's digital era, how to win consumers' loyalty while considering consumers' stickiness has become the key for enterprises and brands to obtain competitive advantages. In the live broadcast industry, streamers play an important role as information sources and persuaders of important online consumers. They attract a large number of consumers' attention through the combination of video and audio. How to retain consumers and stimulate their consumption or even increase the stickiness of users in the studio has become a problem that e-commerce enterprises must face. Although some studies have focused on the impact of streamers on consumers' purchase behavior, in previous studies, most scholars studied the impact of streamers' information source characteristics on consumers' purchase intention. This paper introduces consumers' emotional attachment and consumer-streamer identification. Based on the above explanation, this study explores the relationship between the activity of e-commerce streamer information sources and consumer stickiness in the context of e-commerce live broadcast, emphasizing that emotional attachment and consumer-streamer identification are

important effects of consumer stickiness, and also providing reference for subsequent research in the context of e-commerce live broadcast.

2 Literature review and research assumptions

2.1 The relationship between the activity of e-commerce streamer information sources and consumers' emotional attachment

Information source liveness refers to the extent to which information disseminators can create an energetic, energetic or attractive image ^[1]. In this study, the activity of the e-commerce streamer information source is defined as the intensity and activity of the streamer's emotional arousal due to personal characteristics that consumers can perceive in the e-commerce live broadcast^[2]. In the online live broadcast environment, the e-commerce streamer plays the role of recommending products and influencing consumer information perception. By arousing consumers' positive emotions, they will increase their emotional attachment. Based on this, the following assumptions are made:

H1: Activity of e-commerce streamer information sources is positively correlated with consumers' emotional attachment

2.2 The relationship between consumer emotional attachment and user stickiness

In marketing research, consumer loyalty behavior commitment and behavior intention will be affected by brand emotional attachment. Brand connection is the long-term result of brand relationship and can predict past and future purchase behavior ^[3]. In addition, the sales of e-commerce streamers will give consumers an immersive feeling, which will create emotional attachment for consumers^[4]. If the consumer has emotional attachment to an e-commerce streamer, the consumer is willing to interact with the streamer and buy the products recommended by the streamer, and even patronize the streamer's studio repeatedly. This phenomenon is similar to "fan economy". High emotional attachment can lead to "crazy" behavior of fans. In view of the above argument, the following assumptions are made in this study:

H2: In the live e-commerce scenario, emotional attachment positively affects consumer stickiness.

2.3 The relationship between the activity of e-commerce streamer information sources and consumer-streamer identification

First, social identification refers to an individual's identification with a social category or group . Nowadays, social identification theory has been applied to different research fields. In the field of marketing, the identification mechanism of consumers and groups expresses the perception of self as individuals and group members relative to other internal group members and enterprises/brands ^[5]. Some scholars have examined the role of consumer-streamer identification in the impact of consumer perceived streamer support on consumer stickiness^[6]. The occurrence of consumer-streamer identification has promoted the acceptance and loyalty of users to the products, produced actual use behavior, and brought positive results. Based on this, the following assumptions are made:

H3: Activity of e-commerce streamer information sources is positively correlated with consumer-streamer identification.

2.4 The relationship between the consumer-streamer identification and user stickiness

In the context of live streaming, existing studies have shown that consumer-streamer identification is positively correlated with consumer's willingness to watch continuously^[7], long-term relationship between consumer and streamer^[8], and consumer-streamer stickiness. Due to the existence of role model effect, the consumer-streamer identification may lead to the intention of maintaining a longer-term relationship and loyalty with the streamer, consumers may admire and worship the streamer because of their values, hobbies and even personal charm. consumer-streamers' agree that both consumer-streamer stickiness and consumer-brand stickiness can be improved^[9]. Consumer-streamer identification usually brings positive emotional experience and value, and generates stickiness to streamer. When consumers are in consumer-streamer identification state, they will stimulate their interest in products and exploration behavior and stimulate consumers to buy goods. Based on this, the following assumptions are made:

H4: Consumer-streamer identification is positively correlated with user stickiness.

Based on the above, a research hypothesis model is proposed such as figure 1.

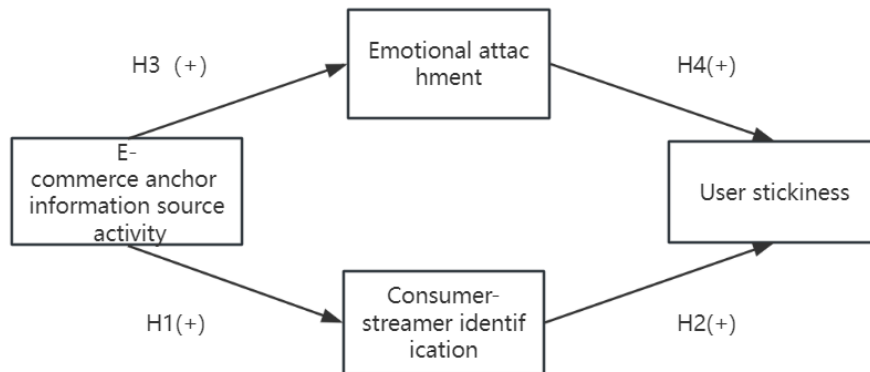


Fig 1. Research hypothesis model diagram

3 Method

3.1 Sample selection and data collection

This study uses questionnaires to conduct empirical research. We distributed an online questionnaire from November 15 to December 15, 2023. The instrument for collecting the questionnaire is the questionnaire star platform. And prior to taking the survey, participants were informed of the purpose of the survey, that participation was voluntary and that responses were guaranteed to be anonymous. Of the 427 questionnaires recovered during the process, 388 were valid. Based on the 388 valid questionnaires collected, descriptive statistics are made on basic data such as gender, age, education level, average monthly income and online shopping frequency.

3.2 Measurement

The scales selected in the questionnaire are all derived from the mature research scales of the existing scholars, including consumer-streamer identification, emotional attachment, user stickiness and other scales. These scales are all mature scales. Contain the scale results obtained after the reliability and validity test and the real measurement. In order to avoid the problem of unclear meaning in the questionnaire, 20 college students were invited to participate in the pretest and the questionnaire was revised based on the feedback.

The questionnaire is divided into three parts. As this paper studies the consumer's sticky behavior in the studio, the sample needs to be consumers who watch the e-commerce studio and have purchased products in the studio. The first part is to screen samples for the items of whether to watch live e-commerce and whether to purchase products in the live studio. The second part is to measure all the variables discussed in this study, including e-commerce streamer information source activity, emotional attachment, consumer-streamer identification, and user stickiness. The Richter scale was used in the survey. The third part is to measure some demographic characteristics of the respondents.

4 Results

In this study, AMOS 27 software is used, and SEM (Structural Equation Modeling) analysis method is adopted to carry out the final model fitting verification, path analysis and hypothesis testing, before the model hypothesis testing, the reliability, convergent validity and differential validity of the model should be tested first. The reliability test uses Cronbach's Alpha coefficient, followed by confirmatory factor analysis to test the discrimination validity and convergence validity between model variables.

4.1 Reliability test

Table 1. Reliability test results

Variable		Cronbach's Alpha		Number of terms	
E-commerce	streamer charm	0.768		3	
Livestreamer	Interaction	0.754	0.907	3	10
Information Source	Passion	0.837		4	
Consumer-streamer identification			0.799		4
Emotional attachment			0.803		3
User stickiness			0.811		4

The results are shown in Table 1 The Cronbach's alpha values of most questions are above 0.7. The results show that the overall reliability of the questionnaire is good.

4.2 Validity test

Table 2. Model confirmatory factor analysis results

Index	χ^2/df	GFI	RMSEA	IFI
Reference Value	<5	>0.9	<0.08	>0.9
Actual value	2.126	0.914	0.054	0.949

The results are shown in Table 2. above. The results show all test values meet the requirements of the suggested values. It can be concluded that the overall fitness of the CFA model is better. A confirmatory factor analysis is then performed, which includes the calculation of combined reliability (CR) and AVE values. The results show the combined reliability (CR) coefficient values of the latent variables are all greater than 0.60, and the average variance extracted (AVE) values are all greater than 0.50, reaching the recommended standards according to related research. To verify the discriminant validity, the correlation coefficient is compared with the square root of the AVE. The square root of AVE of e-commerce streamer information source activity, emotional attachment, consumer-streamer identification and user stickiness are calculated manually to be 0.760, 0.870, 0.793 and 0.818 respectively. The results show that the square root of AVE value is mostly larger than the correlation coefficient of vertical and horizontal columns, which indicates that the difference between structures is effective. In conclusion, the variables in this research questionnaire have good convergent validity and differential validity, and are suitable for hypothesis testing analysis of the model.

4.3 Structural equation model hypothesis testing

After verifying the validity of the model, the software AMOS 27 is used to analyze the fitting of the model, followed by hypothesis testing. First, the fitting condition of the overall model is checked. Each pointer of the model needs to be checked and confirmed whether it is fitted. The results are as follows Table 3.

Table 3. Model fitting pointer list

Index	χ^2/df	GFI	RMSEA	NFI	IFI	PGFI	PNFI
Recommended Value	<3	>0.8	<0.08	>0.8	>0.9	>0.5	>0.5
Result	2.500	0.894	0.062	0.891	0.931	0.716	0.785

By Table 3. It can be seen that each index accords with the characteristic value. Therefore, further model analysis can be performed. As show in table 4.

Table 4. The parameter estimation of path model is studied

			S.E.	C.R.	P
Consumer-streamer approval	<---	E-commerce streamer information source liveness	0.067	10.982	***
Emotional attachment	<---	E-commerce streamer information source liveness	0.069	9.526	***
User stickiness	<---	Emotional attachment	0.053	3.96	***
User stickiness	<---	Consumer-streamer approval	0.08	9.662	***

The results show that all of our hypotheses showed significant positive associations. As show in table 5.

Table 5. Hypothetical result

	The path between	Path Coefficient	Result
H1	→ E-commerce streamer information source activity Consumer Emotional attachment	0.66	support
H2	Consumers' Emotional Attachment → Users' Stickiness	0.21	support
H3	→ E-commerce streamer information source activity Consumer-streamer identification	0.73	support
H4	→ Consumer-streamer identifies User stickiness	0.77	support

The above data show that all of our assumptions are true.

5 Discussion

5.1 Theoretical implications and Practical implications

Theoretical implications: First, based on SOR theory, the relationship between the activity of e-commerce streamer information sources and the stickiness of consumers and users is studied. When consumers make purchase decisions through live sales, they will be affected not only by factors related to traditional e-commerce but also by factors related to streamers. Second, the research makes up for the deficiency of the previous research on consumers' internal emotional state and expands the previous research. Third, previous studies have mostly focused on consumers' impulsive buying, but less on stickiness.

Practical implications: in the current situation of fierce competition among live-broadcast e-commerce companies, e-commerce enterprises should pay attention to the value of consumers' emotional attachment in relationship marketing. This study found that the activity of e-commerce streamers can affect consumer-streamer identification, and affect user stickiness. E-commerce enterprises should use high-activity streamers to let consumers enter the consumer-streamer identification, so as to strengthen the presence and attention of the recommended products in the live broadcast room, and encourage consumers to have user stickiness.

5.2 Limitations and future research prospects

This study has several limitations. First, streamers should show their affinity and talent to consumers, which can help consumers maintain a positive and lasting relationship with streamers, thus strengthening consumers' trust and identification to streamers. Secondly, this study only considers streamers as the objects of consumer identification, i.e. only examines consumer-streamer identification. However, in the study of live sales, other objects that consumers can identify, such as brands, live platforms, employees, other consumers, etc., should also be considered.

6 Conclusions

This study investigates how the activity of e-commerce streamer information sources affects consumer user stickiness through consumer psychology. These findings may help e-commerce enterprises to motivate consumers to generate user stickiness through streamer activity from the dimensions of consumer emotional attachment and consumer-streamer identification. Influencer marketing, for example, is a strategic approach for companies seeking to gain a competitive advantage in the digital economy. Influential people on the Internet promote and endorse brands in live-streaming studios, so as to improve consumers' recognition of the media, and improve brand awareness and user stickiness. Brands can support the role of streamers in attracting and retaining fans by initiating influential marketing campaigns through strategic alliances, brand sponsorship, improved service quality, discounts, competitions, brand ambassadors, and other marketing methods. Such influencer marketing activities can enhance consumers' identification of streamers, strengthen fans' emotional attachment to streamers, so as to improve brand influence, increase brand usage, and finally realize consumers' repeated purchase behavior, and enhance users' stickiness.

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