

# Research on the Influence of Anchor Attributes on Consumers' Online Behaviors in Social E-Commerce Platforms: The Moderating Effect of Platform Contextual Factors

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**Abstract:** As e-commerce continues to mature, the advantages of live streaming within the industry have become increasingly apparent, offering significant growth opportunities. Social e-commerce platforms, which are user-centered, integrate social networks with e-commerce by leveraging social interactions to drive product sales and enhance the overall consumer shopping experience. This type of e-commerce fosters engagement and promotes products by merging online communities with shopping behavior, creating a more interactive and dynamic marketplace. It not only retains the traditional e-commerce trading and marketing functions but also adds a social dimension, making live stream anchors crucial figures connecting consumers with products. These anchors can attract consumers with their appearance and charm, and use their expertise on live streaming platforms to guide consumers by recommending live content. They can also interact with their audiences and potentially influence them to purchase the recommended goods. It is evident that the attributes of anchors in live streaming rooms significantly impact consumers' online behavior. Therefore, researching how platform contextual factors regulate consumers' online behavior is of great practical significance. This study employs multilevel regression analysis to support its hypotheses using data. The findings indicate that contextual factors of the platform significantly influence online behavior, enhancing the positive relationship between user attachment and online activities.

**Keywords:** Anchor attribute; User attachment; Consumers' online behaviors; Contextual factors

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## 1. Research background

With the rapid advancement of mobile Internet technology and the ongoing enhancement of laws and regulations in the live broadcasting industry, network anchors are increasingly categorized into specialized

types beyond the initial “web celebrity anchors.” These include e-commerce, gaming, and travel anchors, among others. As a pivotal component of the e-commerce live broadcast model, the value of e-commerce anchors is gaining significant recognition. As an emerging marketing model, e-commerce live broadcasting has successfully integrated professional anchor talent with the vast customer base of e-commerce platforms, creating numerous sales successes within just a few years since its inception <sup>[1]</sup>. For traditional e-commerce enterprises facing an increasingly competitive environment, formulating effective marketing strategies and improving competitiveness is of unprecedented importance <sup>[2]</sup>. However, the uneven personal abilities of anchors and the serious homogeneity of live content have led to unfair competition, which causes significant inconvenience for consumers during live purchases. This, to some extent, negatively impacts consumers’ overall impressions of the anchors and has adverse effects on the continued growth of e-commerce enterprises’ live-streaming business. This section will discuss the research background and development status of e-commerce anchors and present the research questions based on the current situation.

As network broadcasting technology continues to evolve, online shopping has entered a new era characterized by innovative payment methods and display techniques. The changing demographics of consumers have introduced new demands, leading e-commerce anchors to emerge as popular online shopping guides. Currently, research on e-commerce anchors is limited, primarily focusing on the marketing models and future development of live-streaming platforms. Wu and Zhou <sup>[3]</sup> found that the perceived usefulness of e-commerce live-streaming platforms positively influences consumers’ willingness to engage in continued use. Many scholars also equate e-commerce anchors with web celebrities or opinion leaders in their discussions. Scholar Tan <sup>[4]</sup> explored the phenomenon of opinion leaders in e-commerce live broadcasting through case studies. Fang <sup>[5]</sup> discussed the influence of interactions between e-commerce anchors and consumers’ purchase intentions. Yang *et al.* <sup>[6]</sup> noted that the entertainment aspect of live streaming provides consumers with a relaxed and enjoyable shopping experience, which enhances their purchase intentions. However, foreign scholars Goldsmith *et al.* <sup>[7]</sup> suggested that as an opinion leader, an individual can influence others in various ways—such as recommending information, providing guidance, and sharing opinions on what is deemed valuable. Overall, there is a lack of in-depth discussion in the academic community regarding e-commerce anchors themselves, particularly in the context of e-commerce live broadcasting platforms. Therefore, this paper posits that it is necessary to research the connotation and dimensions of e-commerce anchor attributes, further exploring how these attributes influence consumers’ attachment and affect their online behavior. By identifying the internal mechanisms, this research aims to fill the gap in the study of the impact of anchor attributes on consumers’ online behavior, providing a reference for future scholars.

## **2. Theoretical background and research assumptions**

### **2.1. The relationship between anchor attributes and consumers’ online behaviors**

Traditionally, e-commerce enterprises have presented product information and functions primarily through two-dimensional formats such as text and images, which limit consumers’ ability to gain genuine product insights and often leave them reliant on online reviews from others. As a result, these conventional two-dimensional interfaces have failed to meet the evolving needs of online shoppers. In recent years, live broadcasting technology has been integrated into e-commerce. E-commerce anchors, as key players in live broadcast marketing, effectively replicate the real-life shopping experience through their unique attributes, becoming powerful “spokespersons” for products or brands and significantly influencing consumers’ online behavioral intentions.

The research by scholars Erkan and Evans <sup>[8]</sup> indicates that consumers can greatly increase their involvement through experiential and scenario-based marketing methods, thus stimulating their desire to buy. Scholar Tan <sup>[9]</sup> classifies e-commerce anchors as opinion leaders and suggests that their professionalism and authority can influence the online behavior or willingness of consumers. Scholar Meng <sup>[10]</sup> posits that e-commerce anchors are a type of web celebrity, explaining how they affect consumers' purchase intentions through heart flow theory. Liu *et al.* <sup>[11]</sup> argue that compared with traditional online shopping, simple static graphic pages do not meet consumers' demand for product information.

Currently, academic research on e-commerce anchors primarily focuses on the development status, future trends, modes of development, and marketing strategies of e-commerce live-streaming platforms. However, discussions concerning e-commerce anchors themselves tend to be superficial, often categorizing them merely as internet celebrities or opinion leaders. As the concept of e-commerce anchors evolves, the characteristics associated with opinion leaders do not adequately capture the relationship between the attributes of e-commerce anchors and consumers' online behavior. Therefore, exploring the influence of e-commerce anchor attributes on consumer behavior holds significant theoretical importance.

H1: Anchor attributes have a significant positive impact on consumers' online behaviors.

## 2.2. The moderating role of platform contextual factors

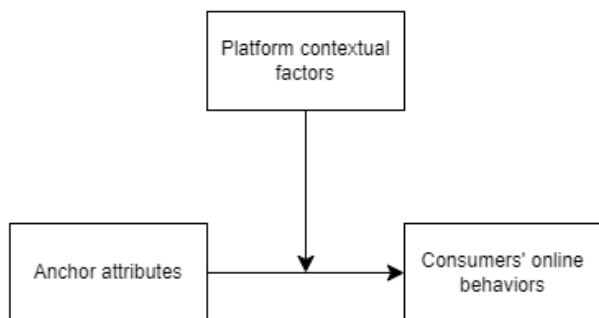
The concept of social e-commerce was first proposed in 2005. Since then, social e-commerce has not had a unified definition. In different fields and at various stages of its development, the definitions of social e-commerce in academic and business communities have been continuously extended and expanded. In the field of marketing, Jascanu and Nicolau <sup>[12]</sup> argued that social e-commerce platforms combine e-commerce platforms with social platforms, using social media as a marketing tool in an innovative way to promote interaction and communication between consumers, thus influencing purchase decisions. Social e-commerce, in this context, acts as a communication bridge between consumers <sup>[12]</sup>.

Zhu and Chen <sup>[13]</sup> believed that social e-commerce uses social networking sites, social media, and network media transmission channels. Utilizing social media technology for interpersonal interaction and business information flow aids in the purchasing and selling of goods through social interaction and user-generated content. This paper asserts that social e-commerce is a user-centered model that combines social networks and e-commerce to promote the sales of goods and enhance consumers' shopping experiences through social means.

In addition to the traditional e-commerce trading and marketing functions, the social component allows e-commerce anchors to leverage platform features like information sharing, social interaction, and user evaluation. Through these functions, they enhance value, trust, and the overall shopping experience, thereby promoting comprehensive online behavior.

H2: Platform contextual factors positively moderate the relationship between anchor attributes and consumers' online behaviors.

Based on the analysis above, the conceptual model for this paper is constructed as shown in **Figure 1**.



**Figure 1.** Conceptual mode

### 3. Research methods

This study employs a questionnaire survey method. A total of 260 questionnaires were distributed online, with 206 valid responses returned, resulting in an effective response rate of 79.23%. Prior to data analysis, the validity and reliability of the variables were tested. Subsequently, conditional process analysis was conducted using the SPSS plugin PROCESS software to analyze the data.

#### 3.1. Reliability analysis of scale

The reliability test is a method used to assess the consistency and dependability of questionnaire results obtained at different times and locations. In statistics, Cronbach's alpha is commonly employed to measure this consistency. In this study, SPSS 26 software was used to calculate Cronbach's alpha coefficient for each variable and dimension to determine whether the empirical data collected met the criteria for internal consistency and reliability. The specific results are presented in **Table 1**.

**Table 1.** Reliability test of the initial scale of anchor attributes

Variable	Item	CITC	Cronbach's alpha after item deletion	Cronbach's alpha
Charisma attribute (H1a)	FA1	0.765	0.92	0.930
	FA2	0.727	0.922	
	FA3	0.741	0.922	
	FA4	0.738	0.922	
	FA5	0.755	0.921	
Recommendation attribute (H1b)	RA1	0.664	0.893	0.903
	RA2	0.69	0.891	
	RA3	0.731	0.886	
	RA4	0.769	0.881	
	RA5	0.696	0.89	
Interaction attribute (H1c)	SA1	0.809	0.89	0.913
	SA2	0.798	0.892	
	SA3	0.713	0.904	
	SA4	0.722	0.903	
Platform contextual factors (H2)	TR1	0.703	0.779	0.840
	TR2	0.703	0.779	
	TR3	0.703	0.779	

Abbreviation: CITC, corrected item-total correlation.

According to the reliability analysis results presented above, each variable in the scale exceeds the general standard of 0.7, indicating that the designed questionnaire demonstrates relatively high credibility and consistency. Furthermore, the corrected item-total correlation (CITC) between the observed variables and their latent variables also meets the requirement of being greater than 0.5, suggesting that the item settings for each latent variable are well-designed and that the reliability of the questionnaire is strong. The results indicate that the overall Cronbach's alpha coefficient for each item does not improve when items are removed, confirming

that each item is appropriately set.

### 3.2. Validity analysis: exploratory factor analysis

Exploratory factor analysis is employed to assess the structural validity of the scale, determining whether the measured variables of each latent variable exhibit stable consistency and structure. It is the most commonly used index for evaluating scale validity. In this paper, SPSS 26 software is utilized to test the composition of each dimension. When conducting factor analysis for validity assessment, it is essential to ensure that certain conditions are met. Typically, two criteria must be satisfied: first, the KMO value should be greater than 0.7; second, the significance level of Bartlett's test of sphericity must be less than 0.05. If both conditions are met, this indicates a strong correlation among the observed variables, making them suitable for factor analysis.

**Table 2.** KMO and Bartlett's sphericity test

	KMO	0.928
	Approx. chi-square	3000.518
Bartlett's sphericity test	Degrees of freedom (df)	231
	Significance level ( <i>P</i> )	0.000

The test results (**Table 2**) show that the KMO test value of the survey data is 0.928, greater than 0.70, indicating that the questionnaire is suitable for factor analysis. The results of Bartlett's sphericity test show that the approximate chi-square value is 3000.518 and the probability of significance is 0.000 ( $P < 0.01$ ), confirming that the scale is appropriate for factor analysis and that the validity structure is sound.

## 4. Research results

The AMOS 22.0 software is utilized to test the constructed model. Structural Equation Modeling (SEM), also known as structural equation analysis, is a statistical method that analyzes the relationships between variables based on their covariance matrix, thus serving as covariance structure analysis. SEM is a multivariate statistical technique that integrates multiple regression and factor analysis to assess a range of interrelated causal relationships automatically. While SEM shares similarities with multiple regression, it offers enhanced capabilities, making it suitable for modeling complex conditions involving latent variables, correlations among independent variables, variable errors, and multiple dependent variables. Structural equation modeling serves as a statistical tool to evaluate the acceptability of the theoretical model proposed by the researcher based on sample data. Using AMOS 22.0, the structural equation model is established according to the previously outlined theoretical framework.

### 4.1. Main test (path analysis)

According to the results of the path analysis in **Table 3**:

- (1) The standardized path coefficient of charisma attributes on consumers' online behavior is 0.117 ( $t$  value = 2.975,  $P < 0.01$ ), indicating that charisma attributes have a significant positive effect on consumers' online behavior, supporting H1a.
- (2) The standardized path coefficient of recommendation attributes on consumers' online behavior is 0.142 ( $t$

value = 2.321,  $P < 0.05$ ), indicating that recommendation attributes have a significant positive effect on consumers' online behavior, supporting H1b.

- (3) The standardized path coefficient of interaction attributes on consumers' online behavior is 0.153 ( $t$  value = 2.873,  $P < 0.01$ ), indicating that interaction attributes have a significant positive effect on consumers' online behavior, supporting H1c.

**Table 3.** Path analysis results

Hypothetical path			Estimate	S.E.	C.R.	P
Consumers' online behaviors	←	Charisma attributes	0.117	0.04	2.975	0.003
Consumers' online behaviors	←	Recommendation attributes	0.142	0.058	2.321	0.020
Consumers' online behaviors	←	Interaction attributes	0.153	0.047	2.873	0.004

Abbreviation: S.E., standard error; C.R., composite reliability.

## 4.2. Test of moderating effect

The test for the moderating effect primarily employs multivariate hierarchical regression based on three established regression models. The first model introduces the control variables, focusing on the sensitivity of the moderating variables to prevent pseudo-regression; thus, independent variables, moderating variables, and interaction terms are controlled. The second model incorporates control, independent, and moderating variables to assess whether these variables influence the dependent variables, determining the model's explanatory power by evaluating the size of  $R^2$ . The third model adds control variables, independent variables, moderating variables, and the interaction terms between independent and moderating variables. If the regression coefficient for the interaction term is significant and  $R^2$  shows a substantial increase, it indicates that the moderating variables exert a significant moderating effect on the relationship between independent and dependent variables. The specific results are presented in **Table 4**.

**Table 4.** Test of the moderating effect of platform contextual factors on user attachment and consumers' online behaviors

Variable	Model 1		Model 2		Model 3	
	Beta	$t$	Beta	$t$	Beta	$t$
Gender	-0.032	-0.79	-0.049	-1.461	-0.05	-1.498
Age	0.04	0.978	0.012	0.369	0.009	0.277
Educational background	-0.185	-4.496***	-0.114	-3.375**	-0.11	-3.292**
Platform	0.155	3.768***	0.096	2.862**	0.096	2.873**
User attachment			0.540	15.579***	0.506	14.143***
Platform contextual factors			0.113	3.293**	0.141	4.019***
User attachment * Platform context factor					0.116	3.295**
$R^2$	0.059		0.381		0.392	
Adjusted $R^2$	0.049		0.372		0.383	
F	5.839***		42.930***		40.040***	

Note: \*\*\* $P < 0.001$ , \*\* $P < 0.01$ , \* $P < 0.05$ .

As shown in **Table 4**:

(1) Model 1 establishes a multiple regression model with the control variable and consumers' online behaviors as the dependent variable.

(2) Model 2 establishes a multiple regression model with user attachment and platform contextual factors as the control variables, with consumers' online behaviors as the dependent variable.

(3) Model 3 incorporates user attachment, platform contextual factors, and interaction terms, controlling for other variables, with consumers' online behaviors as the dependent variable.

The independent variable user attachment in Model 2 has a significant positive effect on consumers' online behaviors ( $\beta = 0.540, P < 0.001$ ). The regression coefficient of the interaction term of the independent and moderating variables in Model 3 was 0.116 ( $t = 3.295, P < 0.01$ ), indicating that the interaction term has a significant positive effect on consumers' online behaviors. The  $R^2$  value of Model 2 was 0.381, and the  $R^2$  value of Model 3 was 0.392, showing a significant improvement, indicating that the explanatory power of the model was enhanced. Therefore, it is demonstrated that the moderating variable platform contextual factors exert a significant positive moderating effect on the influence of user attachment on consumers' online behaviors, supporting H2.

## 5. Analysis and discussion

This research investigates consumers' online behaviors in the context of live e-commerce, with the research environment set on social e-commerce platforms. Building on previous studies, a theoretical model framework has been constructed to explain the mechanism by which e-commerce anchor attributes influence consumers' online behavioral intentions. The relationships between variables are proposed, and through large-scale data analysis, the main research conclusions are summarized as follows:

A theoretical model has been developed to illustrate the mechanism by which anchor attributes influence consumers' online behavior, revealing the internal pathways through which e-commerce anchor attributes affect these behaviors. This research establishes a theoretical framework for understanding the relationship between anchor attributes and consumers' online actions and proposes corresponding hypotheses to articulate these relationships.

The regulatory role of platform contextual factors in user attachment influencing their online behavior is demonstrated. This research, supported by data, shows that platform contextual factors significantly moderate the process by which user attachment affects online behavior, enhancing the positive relationship between user attachment and their online actions.

## Disclosure statement

The authors declare no conflict of interest.

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