

# Research on Modeling the Influence Mechanism of Anchors' Characteristics on Consumers' Online Purchase Intention and the Anchor Selection Strategy in E-Commerce Livestreaming

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**Abstract.** In the management of e-commerce livestreaming, livestreaming anchor selection is a very important decision. The performance of livestreaming anchors directly affects consumers' intention to buy online. Based on the theory of psychological awakening and psychological feeling, this paper analyzes the characteristics of livestreaming anchors from five aspects: charm, professionalism, recommendation, display and interaction, and discusses the specific selection strategies of e-commerce livestreaming anchors by modeling for the influence mechanism of livestreaming anchors' characteristics on consumers' online purchase intention. According to the research idea of the structural equation method, the paper first puts forward the research hypothesis, establishes the research model, obtains the data through the questionnaire survey, and then verifies the model through the data analysis, and corrects the original research hypothesis model. Finally, based on the revised livestreaming anchors' characteristics influence mechanism model on consumers' online purchase intention and related path coefficient, according to the differences of consumers' psychological feelings, the paper proposes three e-commerce livestreaming anchor selection strategies for different types of consumer groups. The research results show that the appropriate livestreaming anchors' characteristics can effectively stimulate consumers' online purchase intention, and optimize the promotion effect of e-commerce livestreaming marketing by optimizing the livestreaming anchors' characteristics. This paper has an important guiding significance for the anchor selection decision in e-commerce livestreaming.

**Keywords:** e-commerce livestreaming  $\cdot$  anchors' characteristics  $\cdot$  online purchase intention  $\cdot$  influence mechanism  $\cdot$  selection strategy

#### 1 Introduction

In 2016, as a fusion product of video livestreaming and e-commerce, e-commerce livestreaming was born in China. In March and May of the same year, Mogujie and

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Taobao launched their livestreaming shopping functions one after another. In 2020, due to the impact of COVID-19, e-commerce livestreaming have exploded, and have entered the vision of consumers through various platforms and channels, and e-commerce livestreaming anchors have become a new employment option.

In China, the research on anchors in e-commerce livestreaming is also increasingly enriched, but the influence of anchors on consumers' purchase intentions in the existing research is mainly based on the SOR theory, and the summary of the characteristics of anchors is relatively simple. Due to the rapid development of the e-commerce livestreaming industry, the identities of anchors are diversified, and only considering the one-way stimulation of the SOR theory is not comprehensive for the two-way interaction of livestreaming.

In view of this situation, this study combines theories of psychological arousal on the basis of the SOR model, focuses on the influence of the anchor's characteristics on the formation of consumers' psychological feelings, and builds a model for the influence mechanism of livestreaming anchors' characteristics on consumers' online purchase intention. In-depth research is carried out from the perspective of the influence of the characteristics of the anchor in the e-commerce livestreaming on the psychological feelings of consumers, which leads to their purchase intention.

On the basis of discussing the mechanism of anchors' characteristics affecting the purchasing intention, this paper further discusses the anchor selection strategy in e-commerce livestreaming. The purpose of our research is to help enterprises make good use of the anchor selection strategy, so as to effectively stimulate consumers' online purchase intention and optimize the promotion effect of e-commerce livestreaming marketing. The research conclusions of this paper can be used to guide the anchor selection decision and anchor skills training practice in e-commerce livestreaming.

#### 2 Literature Review and Theoretical Basis

#### 2.1 Anchor Characteristics Research

Han (2020) divides the attributes of e-commerce livestreaming into attractive attributes, recommendation attributes, display attributes and interactive attributes through grounded theory research, and believes that these four attributes of anchors have an impact on consumer behavioral intentions [4]. The discussion on interpersonal communication factors is compiled by Liao et al. (2010), and they believe that perceived similarity, professionalism and popularity play an important role in interpersonal communication [8]. Wei (2022) summarized the characteristics of anchors as professionalism, interactivity, attractiveness and popularity [14].

Based on the above research, we chose the charm, professionalism, recommendation, presentation and interactivity from the perspective of self-improvement of anchor characteristics, and further studied the influence mechanism of anchor characteristics on consumers' online shopping willingness from these five aspects.

#### 2.2 Psychological Arousal Theory

Christine (1990) defined psychological arousal as a state of psychological activation in the body, which is a representation of changes in the intensity of individual psychological excitation. Through psychological arousal, the psychological feelings of the audience will be amplified, and more inner psychological feelings will be expressed to guide behaviors to achieve inner satisfaction [2]. Anshel (1985) found that psychological arousal is a multi-dimensional mixed psychology, mainly composed of compensation psychology, conformity psychology and self-actualization [1].

To sum up, in the process of livestreaming, the performance and characteristics of the anchor will stimulate consumers and trigger psychological arousal, causing consumers to have different intensities of inner feelings.

#### 2.3 Consumer Psychology Theory

Wei (2007) divided consumers' psychological feelings in the process of knowing products into sensation and perception [13]. The research conducted by Morris et al. (2005) in the field of affective neuroscience shows that emotion is not only a simple physiological response, but also closely related to cognitive response. The process of reasoning and decision-making cannot but be accompanied by emotions. The role of emotion during stimulation is very important [10]. Westbrook (1987), by studying the relationship between the two, pointed out that the experience in the purchase process will directly affect the emotions of consumers, and the better the experience, the more it will stimulate the generation of consumers' positive emotions [15].

As for the classification of emotions, scholars Mehrabian and Russell (1974) divided them into three dimensions of pleasure, arousal and dominance, and it was confirmed in subsequent studies that they can contain all emotions generated by human beings [9]. In this study, the pleasure dimension will correspond to excitement, the arousal dimension will correspond to trust, and the dominance dimension will be identity. The three types of feelings are introduced into the model as influencing variables.

# 3 Research Hypotheses and Model Construction

# 3.1 The Hypothesis About Influences of the Characteristics of Anchors on Consumers' Psychological Feelings

#### 3.1.1 Influences of Anchors' Charm

Affected by hormones, most people's brains will unconsciously secrete dopamine when they see handsome guys and beautiful women, resulting in excitement. Xu [18] pointed out that in e-commerce livestreaming, anchors have strong ability to bring goods, and their distinctive language features and discourse construction play a very important role [17]. Yin et al. (2022) believes that when the anchor has a strong attraction, it will enhance the user's interest and attention to related brands and products, so as to understand and explore the anchor and related brands through multiple channels [19]. Hausman (2003) said that the attractiveness of service personnel during the purchase process will cause

consumers to have a halo effect on them, which will lead to emotional dependence in subsequent behaviors in his research on consumers' online purchase intention [6]. Therefore, the following assumptions are made on the psychological feelings of the anchor's attractiveness on consumers.

**H1a**: The charisma of anchors in e-commerce livestreaming has a positive effect on the excitement of consumer psychology.

**H1b**: The charisma of anchors in e-commerce livestreaming has a positive effect on consumers' psychological trust.

**H1c**: The charisma of anchors in e-commerce livestreaming has a positive impact on consumers' psychological identity.

#### 3.1.2 Influences of Anchors' Professionalism

The study of Lee and Dubinsky (2003) show that the credibility of information sources creates emotional expectations for social relationships to a certain extent [7]. Xu (2013) found that the professionalism of information disseminators has a significant positive impact on the credibility of online product reviews through empirical research on the influencing factors of online review information credibility. More professional anchors will be more comprehensive when introducing products, not only using official advertisements to recommend words, but also more combined with their own feelings and experiences. Let consumers have a more sense of identity with the anchor and their recommended products when making purchasing decisions [17]. Therefore, the following assumptions are made.

**H2a:** The professionalism of the anchor in e-commerce livestreaming has a positive effect on the excitement of consumers' psychology.

**H2b:** The professionalism of anchors in e-commerce livestreaming has a positive effect on consumers' psychological trust.

**H2c:** The professionalism of anchors in e-commerce livestreaming has a positive impact on consumers' psychological identity.

#### 3.1.3 Influences of Anchors' Recommendation

Lee and Dubinsky (2003) believes that the empathy and enthusiastic and active service attitude of sales staff in the sales process will make consumers get a more exciting shopping experience [7]. Petty and Cacioppo (1986) concluded that the credibility and usefulness of reviews have an important impact on consumers' purchase intentions through their research on the credibility of reviewers' information sources. Reviews can be thought of as traditional recommendations [11]. Therefore, the following assumptions are made.

**H3a:** The recommend ability of anchors in e-commerce livestreaming has a positive effect on the excitement of consumers.

**H3b:** The recommend ability of anchors in e-commerce livestreaming has a positive impact on consumers' psychological trust.

**H3c:** The recommendation of anchors in e-commerce livestreaming has a positive impact on consumers' psychological identity.

#### 3.1.4 Influences of Anchors' Display

The novel experience brought by anchors' display will inevitably lead to excitement for consumers. Yin Yuan et al. (2022) proposed that the anchor's display of products at all levels and angles can help consumers eliminate doubts. This kind of direct and true viewing by themselves can give consumers a real sense of trust more than recommendations from any channel [19]. Therefore, the following assumptions are made.

**H4a:** The presence of the anchors in e-commerce livestreaming has a positive effect on the excitement of consumers.

**H4b:** The presence of anchors in e-commerce livestreaming has a positive impact on consumers' psychological trust.

**H4c:** The presence of anchors in e-commerce livestreaming has a positive impact on consumers' psychological identity.

#### 3.1.5 Influences of Anchors' Interactivity

Ravald and Gronroos (1996) indicated in their research that contact, communication and experience will play a role in the generation of trust in the process of information exchange and behavior interaction between the two parties [12]. Fang (2012) believes that the enterprise conducts some special management in the form of network interaction, which will make consumers identify with the enterprise cognitively and emotionally [3]. Therefore, the following assumptions are made.

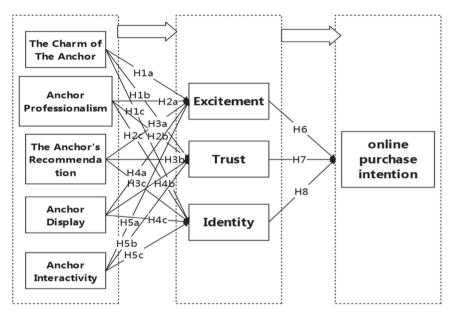
**H5a:** The interactivity of anchors in e-commerce livestreaming has a positive effect on the excitement of consumers.

**H5b:** The interactivity of anchors in e-commerce livestreaming has a positive impact on consumers' psychological trust.

**H5c:** The interactivity of anchors in e-commerce livestreaming has a positive impact on consumers' psychological identity.

# 3.2 The Hypothesis About Influence of Consumer Psychology on Online Purchase Intention

Excitement is mentioned in most of the studies on consumer purchase intentions, and for the e-commerce livestreaming industry, the high return rate due to impulsive consumption is also one of the problems that needs to be solved urgently. The characteristics make consumers feel happy and excited, which will stimulate the online purchase behavior of placing an order. Haubl and Murray (2003) pointed out that many consumers will prolong the order time or lose the willingness to purchase because they cannot obtain accurate and comprehensive product information [5]. Wu and Tsai. (2007) pointed out that there is a positive relationship between consumers' brand identity and behavioral loyalty in their research on consumers' purchase intention, and it has an impact on whether consumers have purchasing behavior [16]. Therefore, the following assumptions are made.



**Fig. 1.** A model for the influence mechanism of anchors' characteristics on consumers' online purchase intention

H6: Excitement has a positive effect on consumers' online purchase intention.

H7: Trust has a positive effect on consumers' willingness to buy online.

H8: Identity has a positive effect on consumers' online purchase intention.

#### 3.3 Model Building

Based on the above 18 assumptions, a model of the influence mechanism of anchors' characteristics on consumers' purchase intention is constructed, as shown in Fig. 1.

# 4 Study Design and Data Collection

Since the original data required for the main content of this study comes from the general consumer group of e-commerce livestreaming, in order to obtain the most direct data and the amount of data that can effectively prove the research results, we choose to obtain the data source through the form of questionnaire distribution. This questionnaire finally consists of four parts: front-book description, screening items, basic information of respondents, and items related to research-related variable scales. The questionnaire design of the variable scale in this study adopts a five-point Likert scale, and the scores are divided into five grades from 1 to 5 points.

#### 4.1 Questionnaire Distribution and Data Collection

In order to obtain a large-scale data source, and taking into account the respondents' answering experience, the study chose to distribute electronic questionnaires through

Sample features	Classification criteria	Quantity	Percentage
Gender	Male	241	47.25%
	Female	269	52.75%
Age	<19	63	12.35%
-	20–24	191	37.45%
	25–29	136	26.67%
	>30	120	23.53%
Educational Background	High School And Below	109	21.37%
	College	110	21.57%
	Undergraduate	225	44.12%
	Master Degree And Above	66	12.94%
Profession	Student	63	12.35%
	Corporate Staff	158	30.98%
	Teachers or Researchers	125	24.51%
	Freelancers	115	22.55%
	Civil Servant	49	9.61%
Monthly Income	<5000	171	33.53%
	5000-8999	156	30.59%
	9000-12000	110	21.57%
	>12000	73	14.31%

Table 1. Statistics of personal information characteristics of research samples

social platforms such as WeChat. In order to obtain high-quality sample groups, questionnaire links were distributed among the anchor Weibo fan groups with a certain size of fans, and the validity of the questionnaires was guaranteed by paid means. After three months of distribution, 553 questionnaires were finally recovered for further screening. By screening out the items and filtering out invalid questionnaires, 43 questionnaires were finally deleted, and 510 valid questionnaires were retained to participate in the follow-up research, and the sample group characteristics of the valid data were classified and displayed (Table 1).

The characteristics of the sample data are in line with my country's social and national conditions, which proves that the samples recovered in this questionnaire can truly and comprehensively represent the current consumer group, and meet the needs of follow-up research for sample data.

## 5 Data Analysis and Model Testing

#### 5.1 Reliability and Validity Analysis

Before testing the hypothesis relationship in the model, in order to ensure the validity of the sample data, the reliability and validity of the data were analyzed. The analysis results are summarized in Tables 2 and 3.

In the reliability test, the Cronbach reliability coefficients of all variables were above 0.9, indicating that the internal consistency of the items in the questionnaire was good. The validity of the data was tested, and the KMO coefficients were all greater than 0.7, indicating that the questionnaire had good construct validity. The Sig values obtained by the Bartley spherecity test are all less than 0.05, and the test is significant and can be used for factor analysis. It can be seen from Table 2 that the load factors of all variables are greater than 0.6, and the calculated average variance extraction value AVE is greater than 0.5, which has good convergence. Validity. At the same time, the CR values of the construct reliability are all greater than 0.7, and all variables have good construct reliability. In conclusion, the items and sample data of the scale have passed the reliability and validity tests with high quality.

### 5.2 Model Hypothesis Testing

According to the hypothesis model, the structure model is constructed by AMOS software, and the hypothesis influence path is tested according to the standardized path coefficient index. The test results are shown in Table 4.

Since the P value of display ability for consumers' identification is 0.121 and greater than 0.05, the null hypothesis path is rejected, and the hypothesis H4c does not hold. After data testing, display ability has no significant effect on consumers' identification. After discussion, because the display is the most objective among the characteristics of the anchor, and the generation of identity requires more psychological empathy, it is difficult for consumers to have a relationship with the anchor because the anchor can better display the product. Resonance leads to a sense of identity. At the same time, consumers will think that displaying products is a very simple behavior, and they will not generate a sense of identity because of emotions such as worship. Unexpectedly, the influence of trust on consumers' online purchase intention is the least significant among the four feelings, because in other studies, the influence of trust on consumers' purchase intention is usually larger. This result is considered to be that the current environment of e-commerce livestreaming in my country is that consumers have a lack of trust in the anchor. When consumers recall their viewing experience, they inevitably think of the negative news of the anchor's dishonesty, so the influencing factors of trust are weakened. All other hypotheses have been tested, and the characteristics of anchors are verified by a model that affects consumers' psychological feelings and thus their purchase intentions. Figure 2 shows the final corrected model after removing the untenable hypothesis paths.

Variable	ov	FL	Variable	OV	FL
The Charm of The Anchor	C1	0.820	Anchor Interactivity	I1	0.859
	C2	0.897	_	I2	0.896
	C3	0.821		I3	0.877
	C4	0.829		I4	0.845
	C5	0.819	Excitement	FP1	0.873
	C6	0.787		FP2	0.846
	C7	0.875		FP3	0.856
Anchor Professionalism	P1	0.821		FP4	0.876
	P2	0.849		FP5	0.860
	P3	0.844	Trust	TP1	0.843
	P4	0.863		TP2	0.886
The Anchor's Recommendation	R1	0.847		TP3	0.833
	R2	0.859		TP4	0.865
	R3	0.873		TP5	0.873
	R4	0.866	Identity	RP1	0.835
	R5	0.821		RP2	0.895
	R6	0.812		RP3	0.828
Anchor Display	S1	0.885		RP4	0.849
	S2	0.863		RP5	0.861
	<b>S</b> 3	0.852	Online Purchase Intention	PD1	0.898
	S4	0.856		PD2	0.860
	S5	0.864		PD3	0.871
				PD4	0.809

**Table 2.** Factor Loading

## **6** Anchor Selection Strategies

Based on the revised influence mechanism model and related path coefficients, the anchor selection strategy considering the audience of the product are proposed according to the psychological feelings of consumers.

#### 6.1 The Strategy for Excited-Led Consumers

If the target group of the product is dominated by excitement, such as teenagers and the unit price of the product is low, then the purchase may be promoted mainly by relying on the excitement of consumers, and consumers dominated by excitement are generally afraid of trouble. Considering the low unit price Returns are also less likely. According to

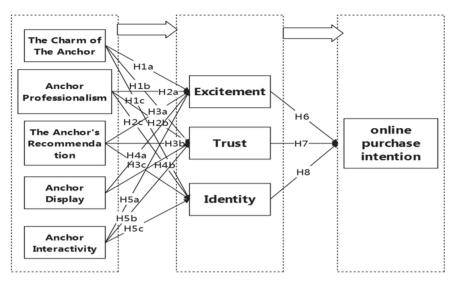
Variable	Number	Alpha	KMO	AVE	CR
The Charm of The Anchor	7	0.942	0.940	0.699	0.942
Anchor Professionalism	4	0.908	0.852	0.713	0.909
The Anchor's Recommendation	6	0.937	0.928	0.717	0.938
Anchor Display	5	0.936	0.907	0.747	0.936
Anchor Interactivity	4	0.925	0.856	0.756	0.925
Excitement	5	0.935	0.908	0.744	0.935
Trust	5	0.934	0.903	0.740	0.934
Identity	5	0.931	0.902	0.729	0.931
Online Purchase Intention	4	0.919	0.856	0.740	0.919

**Table 3.** Reliability and validity analysis results

Table 4. Structural equation model path coefficient and result analysis

suppose	path coefficient	P	test result
H1a	0.107	0.044	support
H1b	0.146	0.006	support
H1c	0.155	0.003	support
H2a	0.127	0.021	support
H2b	0.145	0.008	support
H2c	0.226	***	support
НЗа	0.143	0.004	support
H3b	0.109	0.027	support
Н3с	0.101	0.035	support
H4a	0.118	0.019	support
H4b	0.192	***	support
H4c	0.075	0.121	not support
H5a	0.161	0.003	support
H5b	0.191	***	support
Н5с	0.180	***	support
Н6	0.155	***	support
H7	0.099	0.028	support
H8	0.153	0.001	support

the path coefficient test, interactivity and recommendation have a significant impact on excitement. When choosing an anchor, these two characteristics need to be considered.



**Fig. 2.** A model of the influence mechanism of anchors' characteristics on consumers' online purchase intention

For example, choose a professional anchor in the middle of the country with a high degree of cooperation.

#### 6.2 The Strategy for Trust-Led Consumers

If the consumer group of product positioning is dominated by the influence of trust, such as electronic products and skin care products, consumers need to establish trust in the brand or the anchor before they are likely to be willing to buy, in addition to choosing a head with high credibility itself In addition to big anchors and celebrity spokespersons, the anchors with excellent display and interaction performance can be selected with reference to the path coefficient, and the anchors can be required to focus on real display and interaction in the livestreaming in the training of anchors.

#### 6.3 The Strategy for Identity-Led Consumers

The target group is dominated by the sense of identity. For example, Baoma, as the largest audience of live e-commerce in Taobao, has more time to compare prices and will not place orders because of excitement or trust. Identify with the brand, and at the same time, their special identity also gives them a stronger empathy ability. Faced with this group of people, it is recommended to choose a highly professional anchor, not only in product verticals but also in livestreaming skills.

#### 7 Conclusion

With the continuous development of the e-commerce livestreaming industry, the group of anchors has continued to grow, and their identities have gradually diversified. There

are also many factors that can indirectly and positively affect consumers' purchase intentions. In order to avoid problems such as serious homogeneity of anchors and low industry thresholds, MCN institutions can carry out training focusing on cultivating the characteristics of anchors. On the basis of the personal characteristics of different anchors, they can cultivate characteristics that can arouse consumers' psychological feelings and influence purchasing behavior. Good marketing effect while improving the reputation of the anchor.

For platforms and institutions, in addition to proposing standards to strictly regulate the behavior of anchors to manage anchors, they can also use teaching training and analysis of typical anchors' characteristics to let anchors understand what kind of livestreaming methods and how to express anchors' characteristics can be better and healthier. Increase visibility, gain traffic, and win marketing. For example, because interactivity is the main feature that has a significant impact on consumers' psychological feelings, the live room with good interactive effect can be used as the main anchor, or the typical interactive situation can be made into a teaching video and distributed to the anchor. And the streaming level of the anchor is further improved.

Through the study of modeling the influence mechanism of anchors' characteristics on consumers' online purchase intention, this paper aims to enable brands and businesses to choose more appropriate anchors according to the user portrait of their products when choosing anchors for e-commerce livestreaming, so as to provide them with anchor selection strategies based on the research model. This paper has important guiding significance for anchor selection decision-making and anchor skills training in e-commerce livestreaming.

#### References

- Anshel, M. H (1985). The effect of arousal on warm-up decrements. Research Quarterly for Exercise and Sport, (56): 1–9.
- 2. Christine, L (1990). Psyching up for a muscular endurance task: effects of image content on performance and mood state. Journal of Sport &Exercise Psychology, (12): 66–73.
- 3. Fang, Y. H.(2012). Does online interactivity matter? exploring the role of interactivity strategies in consumer decision making[J]. Computers in Human Behavior, (28): 1790–1804.
- 4. Han Xiaoyi, Xu Zhengliang (2020). The influence of e-commerce anchor attributes on consumers' willingness to buy online: a research based on grounded theory method [J]. Foreign Economic Management, 42(10): 62–75. In Chinese.
- 5. Haubl G, Murray K B (2003). Preference construction and persistence in digital marketplaces: the role of electronic recommendation agents [J], Journal of Consumer Psychology, 13 (1–2):75–91.
- 6. Hausman A V, Siekpe J S (2003). The effect of web interface features on consumer online purchase intentions[J]. Journal of Business Research, 62(1):5–13.
- 7. Lee S, Dubinsky A (2003). Influence of salesperson characteristics and customer emotion on retail dyadic relationships[J]. The International Review of Retail and Consumer Research, 13(1):21–36.
- Liao, H.-C., Chu, C.-H., Huang, C.-Y., & Shen, Y.-C. (2010). Virtual community loyalty: an interpersonal-interaction perspective. International Journal of Electronic Commerce, 15(1), 49–74.

- Mehrabian A, Russell J A (1974). An approach to environmental psychology[M]. The MIT Press.
- Morris J D, Woo C, Singh A J (2005). Elaboration likelihood model: A missing intrinsic emotional implication. Journal of Targeting, Measurement and Analysis for Marketing. 14: 79–98.
- Petty R E, Cacioppo J T (1986). The elaboration likelihood model of persuasion. In: communication and persuasion[M]. Springer Series in Social Psychology. Springer, New York, NY.
- 12. Ravald A, Gronroos C (1996). The value concept and relationship marketing [J]. European Journal of Marketing, 30, 19–30.
- 13. Wei Feng (2007). The cognitive process of consumers' psychological activities [J]. China Optical Science and Technology Journal, (11):86–88. In Chinese.
- 14. Wei Jianfeng, Li Mengna, Liu Baoping (2022). The influence of anchors' characteristics on consumers' impulse purchase intention in e-commerce livestreaming. [J]. China Circulation Economy, 36(04): 32–42. In Chinese.
- 15. Westbrook R A (1987). Product/consumption-based affective responses and post purchase processes[J]. Journal of Marketing Research, 24(8): 258–270.
- Wu, W. Y., Tsai, C. H (2007). The empirical study of CRM: consumer company identification and purchase intention in the direct selling industry. International Journal of Commerce and Management, 7(3): 194–210.
- 17. Xu Feng (2013). Analysis on the linkage development of e-commerce and small and medium-sized enterprises [J]. Business Economics Research, (16):51–52. In Chinese.
- 18. Xu Zijing, Zhang Xinfeng (2021). A comparative study of Li Jiaqi and Wei Ya's live language based on corpus [J]. Overseas English, (22): 104–106. In Chinese.
- 19. Yin Yuan, Wang Yulong (2022). The influence of e-commerce live streaming on users' purchase intention: based on the characteristics of anchors and the perspective of social presence [J]. Journal of Hubei Institute of Science and Technology, 42(01): 26–33. In Chinese.

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