# The Impact of Live-Streaming E-commerce Key Opinion Leader Traits on Consumer Engagement——Based on the Mediating and Moderating Effect of Consumer Confusion and Platform Enabling

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**Abstract.** Live-streaming e-commerce has become a significant technique for businesses to perform marketing operations because to the rapid development of social emerging media. Consumers are more exposed to live shopping, and in order to save time and money, they rely more on Key Opinion Leaders (KOL). KOLs deliver more thorough product information to customers, eliminate buyer confusion, and improve consumer engagement behaviors. As a result, this study investigates the impact of KOL traits in connection to consumer engagement and offers a moderated mediation model to investigate if customer confusion serves as a mediating factor and whether this process is controlled by platform enabling. The findings of the empirical investigation, which used 368 valid samples, reveal that: consumer confusion partially mediates the association between KOL traits and consumer engagement; and platform enabling positively moderates the relationship between KOL traits and consumer confusion. These findings have significant implications for businesses looking to improve the quality of their marketing initiatives and broaden their market reach.

## 1. Introduction

With the rising expansion of the information technology industry and e-commerce in recent years, live streaming with goods has become an increasingly widespread phenomena, with the number of users engaging in live streaming increasing. By the end of December 2021, there were 703 million live webcast viewers, of which 464 million were engaged in live online shopping, a rise of 75.79 million from the previous year and 44.9% of all Internet users [6] (CNNIC,2022). Online shoppers enjoy a wider selection, more inexpensive prices, and an unrestricted time and space schedule when compared to offline shoppers. However, at the same time, the abundance of undifferentiated or even deceptive product information and impassible exterior product characteristics mislead customers and have an impact on their participation behaviors. Opinion leaders are significant individuals in live purchasing environments, frequently influencing consumers' beliefs or behaviors through unofficial channels and utilizing their own personal qualities [25][16] (Turcotte,2015; Mason,2021). Opinion leaders have given live streaming platforms a boost, and by disseminating better and more reliable product information, they have established themselves as a crucial link between goods and consumers. Confusion among consumers can also result from information overload, ambiguity, and excessive product selection in live consumption scenarios [31] (Wang,2013). Consumer perplexity, on the other hand, can set off negative psychology [18] (Mitchell,1999) and this state can lead to uncertainty and doubt in people's decision-making, severely limiting their ability to make decisions. This eventually influences consumers' decision-making choices [29] (Walsh,2010). Although opinion leaders can explain the significance of media messages or content to potential online consumers using their own characteristics [17] (Meng,2011). Few researchers have investigated how consumer confusion and opinion leader traits interact.

This paper uses the traits of opinion leaders, consumer confusion, consumer engagement, and platform enabling as the main variables to build a conceptual model and design a scale to reveal the mechanism by which the traits of opinion leaders influence consumer behaviors through consumer confusion, considering the three key subjects of buyer, seller, and platform in the live-streaming marketing model. so as to provide a reasonable way for opinion leaders of relevant live-streaming platforms to carry out marketing activities, reduce the negative impact caused by consumer confusion, and reduce the negative impact of consumer confusion. This will provide valuable theoretical reference for opinion leaders of relevant live-streaming platforms to carry out rational marketing activities, reduce the negative impact caused by consumer confusion, and enhance the effectiveness of consumer engagement.

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## 2. Theoretical background and hypothesis development

### 2.1. The Influence of KOL Traits on Consumer Confusion

Unofficially and frequently, a live-streaming e-commerce key opinion leader is a person who affects shoppers' views or actions on a live shopping platform [27][23] (Venkatraman,1989; Sweeney,2012). Professionalism, visibility, product involvement, and degree of homogeneity are the four variables used to categorize the traits of KOLs. Professionalism is primarily used to describe the professional attainments, skills, or extensive experience in a particular type of product service that is concentrated in the field of live-streaming e-commerce, including familiarity with product traits, the ability to integrate product information, and the ability to express marketing products. Visibility mainly refers to the extent to which it is known and familiar to consumers, and the depth and breadth of its influence on consumers is the measure of its fame. The degree of product involvement mainly refers to the degree of importance attached to the product because of its own needs, interests, values and other traits. The degree of homogeneity mainly refers to the fact that the opinion leader has similar values or interests as the consumer. Visibility primarily refers to how well known and familiar it is to consumers, and fame is determined by the breadth and depth of that influence. The extent to which a product is involved primarily refers to the weight given to the product in light of its own needs, interests, values, and other characteristics. The degree of homogeneity primarily describes how comparable the opinion leader's values and interests are to those of the customer.

"Consumer Confusion" is characterized by three dimensions: similarity confusion, overload confusion, and ambiguity confusion. It relates to the unfavorable experiences that customers have when engaging in online consumption [28] (Walsh,2007). "Similarity confusion" refers to consumers' inaccurate subjective assessment of products or choice confusion due to lack of understanding when they are visually confronted with products with similar features, services, and brands [19] (Mitchell &Walsh,2005). "Overload confusion" is a state in which consumers in the information age are actively or passively always receiving too much information from the external environment and are unable to fully understand and process the information in the time available due to their own knowledge, attention and time constraints [18] (Mitchell,1999). "Ambiguity confusion" is a state in which unclear, ambiguous, and ambiguous product information causes a disruption in consumers' psychological trust and understanding of the product [21] (Schweizer,2006).

Opinion leaders who are knowledgeable about a product and are familiar with it can offer customers high-quality information interactions [5] (Chen et al,2008), and product information becomes clearer due to the interpretation of opinion leaders. When posting product information, the higher visibility of opinion leaders makes consumers more confident in the authenticity of the information [3] (Bouhlel,2010). Opinion leaders with higher product involvement will continue to enrich their own product information, actively reach out and use related products to further improve the product information [22] (Sun,2006) providing consumers with authentic product information and usage experience. When there is homogeneity between opinion leaders and consumers, it is more conducive to communication and exchange between them, and good communication helps opinion leaders eliminate consumer confusion [33] (Weimann,1994). Therefore, this paper proposes the following hypothesis.

**H1: KOL traits have an inverse effect on consumer confusion.**

### 2.2 The Impact of KOL Traits on Consumer Engagement

Consumer engagement is a behavioral notion that refers to the level of consumer involvement in the goods, services, and activities that a company offers as well as the maintenance of a relationship with the company. Higher-expertise opinion leaders can communicate with consumers with higher-quality information and offer greater input into their buying decisions, influencing their followers' consumption patterns and encouraging them to buy goods and services [5] (Chen et al,2008).
When opinion leaders with a certain level of popularity make announcements, consumers are more convinced of the truthfulness of the news and make their decisions accordingly due to the celebrity effect [3] (Bouhlel,2010). At the same time, opinion leaders use their popularity to obtain more professional, complete and reliable information and provide it to consumers, narrowing the information gap between consumers and professionals [14] (Lyons&Henderson,2005) increasing consumer engagement behavior, which in turn largely influences product sales [11] (Gruen,2006). Product involvement is an important independent variable factor influencing consumer behavior [32] (Wangenheim&Bayón,2004), and opinion leaders with higher product involvement can have a significant impact on consumer engagement. The higher the degree of homogeneity between opinion leaders and consumers, the more likely consumers are to follow the advice of opinion leaders [4] (Casaló,2020), and thus opinion leaders are more likely to trigger consumer engagement behaviour. Therefore, this paper proposes the following hypothesis.

**H2: KOL traits have a positive effect on Consumer Engagement.**

### 2.3 The Mediating role of Consumer Confusion

Consumer confusion can cause cognitive distress, and constant cognitive depletion leads to shopping fatigue, which in turn can lead to a strong sense of failure and frustration and negative psychology such as disappointment and resentment [13] (Kasabov,2015). Negative psychology can lead to consumers being

unable to make choices or even avoiding choices [1] (Ait Omar,2019), which ultimately affects consumer engagement. Therefore, this paper proposes the following hypothesis.

**H3: Consumer confusion has an inverse effect on consumer engagement.**

Opinion leaders act as active media users of the live banding platform to explain product information or content to consumers. They also act as filters of information and recommend specific products to consumers [17] (Meng,2011), alleviate the uneasy psychological state that consumers exhibit when they are in a similar, ambiguous, and overloaded information situation during the purchase decision stage [7] (Edward &Sahadev,2012), and assist consumers in making optimal shopping choices. Therefore, opinion leaders with better traits help to reduce consumer confusion. On the contrary, when there are no opinion leaders to assist consumers in selecting and identifying product information, consumers will have a negative consumer experience, causing them psychological discomfort and behavioural uncertainty [13] (Kasabov,2015). At the same time, opinion leaders can directly influence consumer behaviors by using their own traits [23] (Sweeney,2012). Thus, consumer confusion assumes an intermediate bridging role between opinion leader traits and consumer engagement. Based on the above, the hypothesis is proposed.

**H4: Consumer confusion plays a mediating role in the relationship between opinion leaders and consumer engagement**

### 2.4 The Moderating role of Platform Enabling

Platform enabling refers to the potential ability of the platform to provide participating enterprises with resources output, data support, marketing assistance and model optimization for value creation [30] (Wang&Sheng,2017). Live-streaming e-commerce with goods needs to rely on a platform with complete infrastructure to realize real-time dynamic two-way interaction, display product information and make payments, so as to complete the process of consumer experience. Based on the stimulus-organism-response model (S-O-R model), scholars generally agree that external environmental stimuli have an impact on consumer behavior [8] (Eroglu,2010). In live banding and online purchasing, the external environmental stimuli mainly include opinion leader traits as well as the platform atmosphere [9] (Gatautis,2016). At the same time, as a medium of information exchange between opinion leaders and consumers, platforms with a higher level of enabling can provide richer resources for opinion leaders, which facilitates opinion leaders to play their own traits to better deliver product information and gain a higher degree of consumer trust, thus alleviating consumer confusion and changing consumer attitudes and behaviors [26] (Valente,1999). Therefore, for the same level of opinion leader traits, a live-streaming e-commerce platform with higher platform enabling performance can cut down the negative psychological effects and attitudes triggered by consumer confusion to a greater extent. This paper proposes the following hypothesis.

**H5: Platform enabling plays a positive moderating role between KOL traits and consumer confusion.**

From the previous analysis, it is clear that KOL traits increase consumer engagement behaviour by reducing consumer confusion, while platform enabling helps strengthen the relationship between opinion leader traits and consumer confusion. That is, the greater the platform enabling, the greater the indirect facilitation effect of opinion leader traits on consumer engagement. In other words, platform enabling plays a moderating role in the whole mediating mechanism of opinion leader traits-consumer confusion-consumer engagement, based on which, this paper proposes the hypothesis of moderating mediating effect.

**H6: Platform enabling positively moderates the mediating role of consumer confusion between KOL traits and consumer engagement**

## 3 Methodology

### 3.1 Sample and data

In order to collect the data needed to test the above research hypotheses, this study was conducted using an online and offline questionnaire. This questionnaire research was conducted on consumers who have participated in live shopping and data were collected through sampling. The data were collected in August 2022, and 400 questionnaires were collected, of which 368 were valid, with an effective rate of 92.00%. The demographic information of the survey respondents is shown in Table 1. In this pre-study, female respondents were in the majority, accounting for 68.48%; the age of respondents was mainly concentrated in the age of 20 to 30, accounting for a total of 66.30%; the number of people with education level in bachelor's degree was high, 263 people, accounting for 71.47%; the time distribution of participation in live shopping was relatively scattered, concentrated in 1 to 2 years, 174 people, accounting for 47.28%; the average weekly participation in the frequency of live shopping is more concentrated in more than 4 times, accounting for a total of 70.65%; the monthly amount spent in live shopping in the sample is mainly concentrated in 101 to 500 yuan, accounting for 60.60%. This sample can represent a broader group of live shopping.

**Table 1.** Demographics of Respondents (N = 368)

| Demographic | | Frequency | Percent |
|---|---|---|---|
| Gender | Male | 116 | 31.52 |
| | Female | 252 | 68.48 |
| Age | 20 or younger | 32 | 8.70 |
| | 21~30 | 244 | 66.30 |
| | 31~40 | 84 | 22.83 |
| | 41 or older | 8 | 2.17 |
| Education | High school | 29 | 7.88 |
| | Undergraduate | 263 | 71.47 |
| | Postgraduate | 67 | 18.21 |

| | | | |
|---|---|---|---|
| | Doctor | 9 | 2.45 |
| | 1 year or less | 61 | 16.58 |
| Years exposure | 1~2 years | 174 | 47.28 |
| to Live Shopping | 2~3 years | 102 | 27.72 |
| | 3 years or more | 31 | 8.42 |
| | 1 time or less | 29 | 7.88 |
| Times spent on Live | 2~3 times | 79 | 21.47 |
| Shopping per week | 4~6 times | 111 | 30.16 |
| | everyday | 149 | 40.49 |
| | 100 RMB or less | 45 | 12.23 |
| Money spent on Live | 101~500 RMB | 223 | 60.60 |
| Shopping per month | 501~999 RMB | 77 | 20.92 |
| | 1000 RMB or more | 23 | 6.25 |

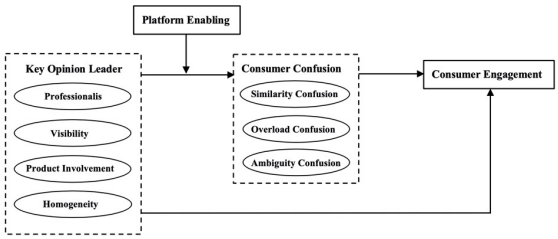


**Fig. 1.** Conceptual model of the moderated mediation relationship Photo credit：Original

### 3.2 Variable measurement

This study designed a scale to measure "the influence of opinion leader traits on consumer engagement in live streaming", which consists of 37 items and four parts. (1). The measure of opinion leader trait variables was adapted from [2] Bansal & Voyer (2000), [24] Sweeney & Soutar (2001), [20] Ohanian (1990), [10] Gilly (1998), and other related scales. Twelve question items were used to assess the degree of expertise, education, product involvement, and homogeneity of opinion leaders in Live-Streaming E-commerce. (2). The measurement of consumer confusion variables was adapted from a related scale such as [21] Schweizer (2006), which consists of 11 items to assess consumer similarity, overload, and ambiguity confusion. (3). The measurement of consumer engagement variables was adapted from the measurement scales in the studies of [15] Nery MMR (2021) and [12] Hollebeek (2014) and consisted of 4 items. **(4).** The measurement of platform enabling variables was adapted from the results of the study by [34] Yang (2014), [30] Wang (2017) and consisted of four question items.

Based on the above scale, basic information of respondents was added, including gender, age, education level, time and frequency of participation in live shopping, and amount spent on online shopping per month. The questions were all single-choice, using a 5-point Likert-type scale, with a gradual increase from "1" to "5", "1" means "totally disagree" and "5" means "totally agree". In addition, three or more questions were set for each variable to ensure the validity of the measure.

### 3.3 Control variables

In this study, gender, age, education, years exposure to live shopping, times spent on live shopping per week and average monthly amount spent on live shopping were selected as control variables to exclude their interference with the study results.

## 4 Result

### 4.1 Common method bias test and validation factor analysis

This study used Harman's one-factor approach to test for common method bias by including variables such as opinion leaders (professionalism, visibility, product involvement, degree of homogeneity), consumer confusion (similarity, overload, ambiguity), consumer engagement, and platform enabling in the factor analysis, and the unrotated factor analysis showed 9 common factors with eigenvalues greater than 1, with the largest eigenvalue of 10.343 common factor explained 33.364% of the total variance less than 50%, indicating that there was no significant common method bias in this study. In addition, this study used AMOS 26.0 to conduct validated factor analysis on four variables: opinion leaders, consumer confusion, consumer engagement, and platform enabling. As shown in Table 2, the four-factor model (x2/df= 1.627; GFI = 0.953; NFI = 0.953; TLI = 0.977; CFI = 0.981; RMSEA = 0.041) obtained an ideal data fit compared with other models, indicating that the four variables in this study have good discriminant validity among themselves.

**Table 2.** Validation factor analysis results

| **Model** | $x^2/df$ | **GFI** | **NFI** | **TLI** | **CFI** | **RMSEA** |
|---|---|---|---|---|---|---|
| Four-factor model KOL-T、CC、CE、PE | 1.627 | 0.953 | 0.953 | 0.977 | 0.981 | 0.041 |
| Three-factor model KOL-T+CC、CE、PE | 2.565 | 0.912 | 0.924 | 0.942 | 0.952 | 0.065 |
| Two-factor model KOL-T+CC+CE、PE | 3.946 | 0.871 | 0.880 | 0.890 | 0.907 | 0.090 |
| Single Factor model KOL-T+CC+CE+PE | 11.031 | 0.688 | 0.660 | 0.626 | 0.680 | 0.165 |

**Note :** KOL-T indicates opinion leader traits, CC indicates consumer confusion, CE indicates consumer engagement, PE indicates platform enabling, and "+" indicates two factors combined into one factor

KMO test and Bartlett ball test were used to test the validity of the scale. The KMO index obtained was 0.871, Bartlett's approximate chi-square was 8299.478, and the significance was P<0.001, indicating that the scale had good validity. The research data were suitable for extracting information and factor analysis.

### 4.2 Descriptive statistics

The means, standard deviations, correlation coefficients and internal consistency coefficients of the variables in this study are given in Table 3, resulting in high reliability for all variables. There was a significant negative correlation between opinion leader traits and consumer confusion (r=-0.455, p<0.01), a significant positive correlation between opinion leader traits and consumer engagement (r=0.620, p<0.01) and platform enabling (r=0.586, p<0.01), and a significant positive

correlation between consumer confusion and consumer engagement (r=-0.537, p<0.01). The negative correlation between consumer confusion and consumer engagement (r=-0.537, p<0.01) was also significant. This laid a good foundation for the subsequent hypothesis testing.

**Table 3.** Descriptive results and correlation coefficient matrix

| Variables | M | SD | KOL-T | CC | CE | PE |
|---|---|---|---|---|---|---|
| **KOL-T** | 3.660 | 0.669 | (0.858) | | | |
| **CC** | 2.602 | 0.872 | -0.455** | (0.903) | | |
| **CE** | 3.477 | 1.020 | 0.620** | -0.537** | (0.884) | |
| **PE** | 3.693 | 0.956 | 0.586** | -0.314** | 0.485** | (0.880) |

Numbers in parentheses on the diagonal indicate Cronbach's α.
*p<0.05, **p<0.01, ***p<0.001, Same below

## 4.3 Hypothesis testing

**Main effects test.** This study used SPSS26.0 to establish a main effects regression analysis model for the analysis of opinion leader traits on consumer confusion and consumer engagement as shown in Table 3 below. With opinion leader traits as the dependent variable, M3 as the model with only control variables, and M4 as the model with opinion leader traits added to M3, the analysis of opinion leader traits had a significant positive effect on consumer engagement (β=0.621, p<0.001), and hypothesis H2 was verified. Secondly, M5 added consumer confusion to M3, and the result was that consumer confusion had a significant side-effect on consumer engagement (β=-0.563, p<0.001), and hypothesis H3 was verified.

**Mediating effect test.** To test the mediating effect of consumer confusion between opinion leader traits and consumer engagement, as shown in Table 4, M1 is the model with only control variables, and M2 is the model with opinion leader traits added to M1, and the analysis of opinion leader traits has a significant negative effect on consumer confusion (β=-0.465, p<0.001), hypothesis H1 was verified. Also adding opinion leader traits and consumer confusion to M6, it is clear from M6 that consumer confusion has a significant negative effect on consumer engagement (β=-0.316, p<0.001) and the relationship between opinion leader traits on consumer engagement is still significant (β=0.474, p<0.001), but the coefficient decreases from 0.621 to 0.474, indicating that consumer confusion partially mediates the relationship between opinion leader traits and consumer engagement, and hypothesis H4 was tested.

**Table 4.** Results of main and mediating effects analysis

| Variables | CC | | | CE | | |
|---|---|---|---|---|---|---|
| | M1 | M2 | M3 | M4 | M5 | M6 |
| **Control variables** | | | | | | |
| Gender | 0.113 | 0.121** | -0.004 | -0.015 | 0.059 | 0.023 |
| Age | 0.055 | 0.021 | -0.027 | 0.017 | 0.003 | 0.024 |
| Education | 0.032 | 0.029 | -0.011 | -0.007 | 0.007 | 0.002 |
| Years | 0.123 | 0.114** | 0.001 | 0.013 | 0.070 | 0.049 |
| Times | -0.348*** | -0.370*** | 0.148 | 0.177*** | -0.048 | 0.060 |
| Money | 0.169** | 0.219*** | 0.030 | -0.037 | 0.125 | 0.032 |
| **Independent variable** | | | | | | |
| KOL-T | | -0.465*** | | 0.621*** | | 0.474*** |
| **Intermediate variables** | | | | | | |
| CC | | | -0.563*** | -0.316*** | | |
| $R^2$ | 0.122 | 0.335 | 0.029 | 0.409 | 0.307 | 0.474 |
| Adjusted $R^2$ | 0.107 | 0.322 | 0.013 | 0.397 | 0.294 | 0.464 |
| F | 8.349*** | 25.882*** | 1.797 | 35.573*** | 22.827*** | 40.635*** |

**Moderating effect test.** The product terms were constructed by normalizing the independent and moderating variables, respectively, as a way to eliminate covariance. The results of the hierarchical analysis are shown in Table 5. According to models M2 and M3, the interaction term between opinion leader traits and platform enabling has a significant positive effect on consumer confusion (β = -0.169, p < 0.01), which indicates that platform enabling enhances the relationship between opinion leaders and consumer confusion, supporting the H5 hypothesis.

**Table 5.** Moderating effect test

| Variables | CC | | |
|---|---|---|---|
| | M1 | M2 | M3 |
| Gender | 0.113 | 0.121** | 0.106 |
| Age | 0.055 | 0.021 | 0.026 |
| Education | 0.032 | 0.029 | 0.024 |
| Years | 0.123 | 0.114** | 0.110 |
| Times | -0.348*** | -0.370*** | -0.366*** |
| Money | 0.169** | 0.219*** | 0.218*** |
| KOL-T | | -0.465*** | -0.365*** |
| **Interaction items** | | | |
| KOL-T × PE | | | -0.169** |
| $R^2$ | 0.122 | 0.335 | 0.353 |
| Adjusted $R^2$ | 0.107 | 0.322 | 0.339 |
| F | 8.349*** | 25.882*** | 24.504*** |

**Moderated mediating effect test.** In this paper, we calculated the indirect effect of opinion leader traits on consumer engagement through consumer confusion at different platform enabling levels, and obtained 95% confidence intervals, as shown in Table 5. The confidence intervals obtained at different platform enabling levels do not contain 0. The indirect effect of opinion leader traits on consumer engagement behavior through consumer confusion is significant, indicating the existence of the mediated effect. h6 hypothesis is supported. To further verify the moderating effect, we plot the moderating effect (see Fig. 2) in order to reflect the moderating effect of platform enabling between the independent variable opinion leader and the dependent variable consumer confusion more visually. The absolute value of the slope under high platform enabling is larger than that under low platform enabling, indicating that when the platform enabling is at a higher level, the stronger the influence of opinion leader traits on consumer confusion, i.e., platform enabling positively moderates the negative effect of opinion leader traits on consumer confusion, and hypothesis H6 is further verified.

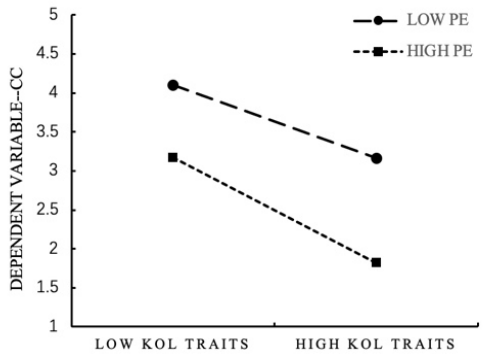


**Fig. 2.** Moderating effect of Platform Enabling (PE) on the relationship between KOL traits and Consumer Confusion (CC)
Photo credit：Original

## 5. Research conclusions and insights

### 5.1 Conclusions

This study explores the influence of live-streaming opinion leader traits on consumer engagement, the mediating role of consumer confusion, and the moderating role of platform enabling in the relationship between opinion leader traits and consumer confusion by means of a questionnaire. The study shows that opinion leader traits have a significant positive effect on consumer engagement; consumer confusion partially mediates the relationship between opinion leader traits and consumer engagement; furthermore, the negative effect of opinion leader on consumer confusion is more significant under the influence of platform enabling.

### 5.2 Theoretical value

The contribution of this study is mainly in two aspects: on the one hand, the mediating variable consumer confusion and the moderating variable platform enabling are introduced in the relationship model between opinion leader traits and consumer engagement, and the mechanism of the interaction between them is empirically tested, which fills the gap of empirical research in related fields to a certain extent. On the other hand, this paper jointly looks at the relationship between live-streaming e-commerce KOL traits and consumer engagement from three perspectives: buyers, sellers, and platforms, considers KOL traits in four dimensions: expertise, popularity, product involvement, and degree of homogeneity, and measures consumer confusion in three dimensions: similarity, transcendence, and ambiguity confusion, providing a more comprehensive idea for live-streaming e-commerce companies to improve sales .

### 5.3 Research limitations and outlook

Due to various constraints of subjective and objective conditions, the following limitations of this study are worthy of further improvement in future studies: (1) Most of the samples were taken from coastal provinces such as Jiangsu, Zhejiang, Shanghai, which are slightly unrepresentative. (2) This study uses cross-sectional data, and the causal attribution among variables is not strict enough. In the future, longitudinal research method can be used to collect data and further effectively explore the causal relationship among the dimensions of each variable through empirical sampling method. (3) From the correlation analysis, it can be seen that the frequency and amount of live shopping are significantly related to consumer confusion, and future research can further explore the relationship between the frequency of live shopping, the amount of live shopping and consumer confusion.

## References

1. Ait Omar D, Garmani H, El Amrani M, et al. A customer confusion environment in telecommunication networks: analysis and policy impact[J]. International Journal of Cooperative Information Systems, 2019, 28(02): 1930002.
2. Bansal H S, Voyer P A. Word-of-mouth processes within a services purchase decision context[J]. Journal of service research, 2000, 3(2): 166-177.
3. Bouhlel O, Mzoughi N, Ghachem M S, et al. Online purchase intention: Understanding the blogosphere effect[J]. International journal of e-business management, 2010, 4(2): 37-51.
4. Casaló L V, Flavián C, Ibáñez-Sánchez S. Influencers on Instagram: Antecedents and consequences of opinion leadership[J]. Journal of business research, 2020, 117: 510-519.
5. Chen J S, Ching R, Tsai H T, et al. Blog effects on brand attitude and purchase intention[C]//2008 International Conference on Service Systems and Service Management. IEEE, 2008: 1-6.
6. China Internet Network Information Centre (CNNIC). The 49th Statistical Report on Internet Development in China [J].2022.
7. Edward M, Sahadev S. Modeling the consequences of customer confusion in a service marketing context: An empirical study[J]. Journal of Services Research, 2012, 12(2): 127-146.
8. Eroglu S A, Machleit K A, Davis L M. Empirical testing of a model of online store atmospherics and shopper responses[J]. Psychology & marketing, 2010, 20(2): 139-150.
9. Gatautis R, Vitkauskaite E, Gadeikiene A, et al. Gamification as a mean of driving online consumer behaviour: SOR model perspective[J]. Engineering Economics, 2016, 27(1): 90-97.
10. Gilly M C, Graham J L, Wolfinbarger M F, et al. A dyadic study of interpersonal information search[J]. Journal of the academy of marketing science, 1998, 26(2): 83-100.
11. Gruen T W, Osmonbekov T, Czaplewski A J. eWOM: The impact of customer-to-customer online know-how exchange on customer value and

loyalty[J]. Journal of Business research, 2006, 59(4): 449-456.

12. Hollebeek L D, Glynn M S, Brodie R J. Consumer brand engagement in social media: Conceptualization, scale development and validation[J]. Journal of interactive marketing, 2014, 28(2): 149-165.
13. Kasabov E. What we know, don't know, and should know about confusion marketing[J]. European Journal of Marketing, 2015(11-12): 1777-1808.
14. Lyons B, Henderson K. Opinion leadership in a computer-mediated environment[J]. Journal of Consumer Behaviour: An International Research Review, 2005, 4(5): 319-329.
15. Martins Rebouças Nery M, Alves Sincorá L, Carneiro T C J. Trajectory and research opportunities on consumer brand engagement in social networking sites[J]. Journal of Internet Commerce, 2021, 20(4): 479-507.
16. Mason A N, Narcum J, Mason K. Social media marketing gains importance after Covid-19[J]. Cogent Business & Management, 2021, 8(1): 1870797.
17. Meng F, Wei J, Zhu Q. Study on the impacts of opinion leader in online consuming decision[C]//2011 International Joint Conference on Service Sciences. IEEE, 2011: 140-144.
18. Mitchell V W, Papavassiliou V. Marketing causes and implications of consumer confusion[J]. Journal of Product & Brand Management, 1999(4): 319-342.
19. Mitchell V W, Walsh G, Yamin M. Towards a conceptual model of consumer confusion[J]. ACR North American Advances, 2005(1): 143-150.
20. Ohanian R. Construction and validation of a scale to measure celebrity endorsers' perceived expertise, trustworthiness, and attractiveness[J]. Journal of advertising, 1990, 19(3): 39-52.
21. Schweizer M, Kotouc A J, Wagner T. Scale development for consumer confusion[J]. Advances in consumer Research, 2006, 33(1): 184-190.
22. Sun T, Youn S, Wu G, et al. Online word-of-mouth (or mouse): An exploration of its antecedents and consequences[J]. Journal of Computer-Mediated Communication, 2006, 11(4): 1104-1127.
23. Sweeney J C, Soutar G N, Mazzarol T. Word of mouth: measuring the power of individual messages[J]. European Journal of Marketing, 2012, 46(1/2): 237-257.
24. Sweeney J C, Soutar G N. Consumer perceived value: The development of a multiple item scale[J]. Journal of retailing, 2001, 77(2): 203-220.
25. Turcotte J, York C, Irving J, et al. News recommendations from social media opinion leaders: Effects on media trust and information seeking[J]. Journal of computer-mediated communication, 2015, 20(5): 520-535.
26. Valente T W, Davis R L. Accelerating the diffusion of innovations using opinion leaders[J]. The Annals of the American Academy of Political and Social Science, 1999, 566(1): 55-67.
27. Venkatraman M P. Opinion leaders, adopters, and communicative adopters: A role analysis[J]. Psychology & Marketing, 1989, 6(1): 51-68.
28. Walsh G, Hennig-Thurau T, Mitchell V W. Consumer confusion proneness: scale development, validation, and application[J]. Journal of Marketing Management, 2007, 23(7-8): 697-721.
29. Walsh G, Mitchell V W. The effect of consumer confusion proneness on word of mouth, trust, and customer satisfaction[J]. European Journal of marketing, 2010, 44(6): 838-859.
30. Wang J X, Sheng Y. Platform enabling improving the production capacity of complex products[N]. China Social Science Journal, 2017-09-13(004).
31. Wang Q, Shukla P. Linking sources of consumer confusion to decision satisfaction: The role of choice goals[J]. Psychology & Marketing, 2013, 30(4): 295-304.
32. Wangenheim F V, Bayón T. The effect of word of mouth on services switching: Measurement and moderating variables[J]. European Journal of Marketing, 2004, 38(9/10): 1173-1185.
33. Weimann G. The Influentials: People Who Influence People[J]. State University of New York Press, Albany, NY, 1994.
34. Yang J Z, Zheng B X, Yang L F. Research on cross-border e-commerce index system based on factor analysis[J]. Finance & Trade Economics, 2014, 35: 94-102.
35. Zaichkowsky J L. The personal involvement inventory: Reduction, revision, and application to advertising[J]. Journal of advertising, 1994, 23(4): 59-70.