

The Effect of E-commerce Live Streaming Shopping on Consumers' Purchase Intention in China-Focusing on Features of Streamers and Contents

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ABSTRACT

In China, online live streaming shopping as a part of e-commerce shows rapid growth, while many sellers can not achieve the economic benefits as expected. This study mainly extracts, analyzes, and examines the general features of e-commerce live streaming shopping, positively affecting consumers' purchase intentions. Many UGC sellers can obtain some practical ways to output more high-quality content with limited resources. This study places the following nine features as independent hypotheses: streamer's professionalism, awareness, homogeneity, attractiveness, reliability, contents' interaction, entertainment, discount, uniqueness, and consumers' purchase intention taken as a dependent variable. As a result of statistical analysis of the data collected through the survey, all nine hypotheses were adopted.

Keywords: e-commerce, online live streaming shopping, purchase intentions, streamer's feature, content's feature

INTRODUCTION

It can be said that e-commerce online live shopping in China began to form around 2016. At the time, "live internet broadcasting" spread with a feverish rage around the younger age group. Economic benefits and potential values were explosive growth as a new aspect of the popular culture industry. Currently, in the e-commerce industry in China, live internet shopping is showing rapid growth overall. Simultaneously, there are quite a few sellers who do not achieve the economic benefits as expected through live internet broadcasts. The content creation method of live internet shopping can be classified into UGC and PGC. PGC, which occupies a small proportion, provides highly specialized human resources to produce high-quality content. Simultaneously, the development of mobile communication technology allows anyone to have a mobile phone UGC. It occupies the majority because it is easy to broadcast live with only one, which is generally low in quality as existing e-commerce sellers conduct live broadcasting at their discretion. Many vendors will need a practically easy-to-use method that effectively improves the quality of UGC with limited resources.

From the previous works, the relationship between live Internet shopping and consumer purchase-related psychology or behavior in recent years is a factor that affects consumer's purchase-related psychology or behavior by extracting characteristics belonging to a relatively

narrow category from various aspects. The relationship between interaction types and impulsive purchase intentions in live online shopping (Zheng, 2019) affects streamers' characteristics on consumers' attitudes (Fang, 2018) and KOL's effect on consumers' purchase intentions. Examples include previous studies such as impact (Tan, 2017). These studies' achievements have high academic and practical contributions in highly specialized fields such as academic fields and PGC. Still, it seems that it is practically impossible for many UGC sellers with low content expertise to refer to them and effectively utilize them.

This study aims to analyze the universal and general characteristics of e-commerce internet live shopping that positively influence consumers' purchase intention. A study to examine the characteristics is likely to positively influence consumers' purchase intention and select universal and general characteristics belonging to the categories of the essential elements extracted in this study. This study verifies the relationship between these characteristics and purchase intention. We want to design a model and establish a hypothesis. Design a survey and verify the research model and hypothesis through empirical analysis of the collected data. Many UGC sellers intend to present practically available plans for producing and developing content for high-quality e-commerce Internet live shopping, even with limited resources.

BACKGROUND

E-commerce Internet Live Shopping

"E-commerce Internet live broadcasting shopping" can be understood as providing an online shopping process to consumers within a particular time by combining live Internet broadcasting in e-commerce. In general, streamers, who play the role of host, use video recording to display and sell product information in real-time on the Internet live broadcasting platform, and even provide consultation services to consumers, thereby interacting between streamers and consumers. The process of realizing live broadcasts, viewing, exchanges, sales, and purchases in a virtual space within a particular promised time can be referred to as e-commerce Internet live broadcast shopping' (Liu, 2018).

The content link between the streamer and the viewer (consumer) is essential when shopping for live online broadcasting. The streamer mainly explains product-related information such as production, user experience, and experience and communicates with and between consumers. It can be seen that contents are created by organically harmonizing all the contents created in communication and its appearance. According to (Jia, 2019; Rui & Kang, 2016), there are three types of streamers for live online shopping. First, as a person who has already had a social influence in the media or a famous person on the Internet such as Wang Hong, fans' appeal is considerable. Secondly, as a person in charge of KOL's role (Key Opinion Leader), he communicates highly specialized information to consumers through understanding, knowledge, and experience of the product. Third, the seller plays the role of a streamer directly at his or her discretion. The differences in competitiveness and limitations that stand out for each of the three types of streamers are revealed. If the seller directly plays the role of a streamer, compared to Wang Hong or KOL, there are many cases where there are not already many fans, and basic knowledge about the live shopping process is lacking. Therefore, all material resources for a product are in place, but in general, it is difficult to say that it has essential characteristics as a streamer or as content. Only a simple product introduction or purchase-related information flows over time in a live broadcast. Therefore, it is not easy to maintain continuous viewing by consumers who have entered the live room because they are

interested in the product. Therefore, few transactions close them (Jia, 2019; Zhang et al., 2017; Li, 2019).

E-commerce Internet live broadcast shopping can be classified into two main types, UGC and PGC¹. PGC (Professional Generated Content) is a method in charge of content production in cooperation with streamers such as Wang Hong and KOL in related fields and human resources with high expertise in this field. By producing high-quality content, PGC satisfies consumers' higher demand for product information by delivering valuable information to consumers with insightful analysis in this field often (Liang, 2019; He, 2018; Liu, 2018). UGC (User Generated Content) is a method in which sellers generally conduct live broadcasts directly at their discretion. The cost of preparing a live broadcast is low because we can shop for live broadcasts on the Internet with a single mobile phone, and there is no investment in additional human resources to produce content. Many sellers move into the e-commerce platform. If they are granted live broadcasting rights, they directly or within a tiny budget compared to PGC, they recruit human resources such as streamers to conduct live broadcasting shopping. These live broadcasts are conducted as product introductions or exhibitions of the use process, which feels monotonous and boring because of the lack of detailed planning for content production in advance. Overall, this way's content is generally of low quality, difficult to attract many consumers, and a low conversion rate to actual purchasing power. Currently, UGC occupies a large proportion of the entire platform (Zhang, 2018; He, 2018; Zhou, 2017).

In the e-commerce internet live broadcasting shopping platform, high-quality content is mainly produced by the PGC method. It is generally carried out only during large-scale shopping events, brand festivals, and discount events. It is a process of preparing streamers and contents through meticulous preliminary planning by administering a large amount of capital and human resources to achieve the effect of concluding a significant amount of transactions during live broadcasting. Therefore, most of the time on the platform, content is mainly generated by UGC (Zhang, 2018; He, 2018; Zhou, 2017). Therefore, improving UGC content quality can produce high-quality content overall in the industry and the platform.

Purchase Intention

In terms of psychology, intention can be a premise that translates to behavior (Fishbein & Jcek, 1975). There are many studies on purchase intention in the fields related to consumer's purchasing sentiment and behavior. It is because purchasing intention is an essential variable for predicting purchasing behavior in marketing and management-related fields. Purchasing intention is also the probability that the consumer's psychological beliefs, attitudes, and plans decide whether to purchase by subjective judgment about the product lead to the final purchasing behavior (Dodds et al., 1991). Purchasing intention is affected by positive (+) and negative (-) influencing factors, and the more consumers' preference for the product, the more positively the purchase intention is influenced (Parasuraman et al., 1991). According to Amoroso (2016), purchase intention is an index that reflects the feasibility of a consumer's specific purchasing behavior. Purchasing intention is an expression of purchasing motives and shows consumers' efforts and will to realize future purchasing behaviors (Eagly & Chaiken,

¹ Sina Technology(2020) <https://tech.sina.com.cn/i/2020-04-16/doc-iirczymi6715822.shtml>

1993). The more intense the purchase intention is, the more likely it is to lead to the consumer's actual purchase behavior (Schiffman et al., 2010).

Consumers' purchasing sentiment and behavior are complexly influenced by several factors, and influencing factors such as price, design, packaging, quality, knowledge, fashion, ambassadors, and family relationships are examples (Madahi & Sukati, 2012). According to the experimental results of Satish & Peter (2003), the more detailed information a consumer knows about the product's function, description, price, company, etc., the higher the purchase intention is. They tend to pay attention to brands they know. In both studies of Zucker (1986) and Koufaris (2004), reliability has proven the result of remarkably increasing consumer's purchase intention.

According to a study by Guo & Li (2018), the interactivity, entertainment, and preferentiality of live broadcasting positively (+) influence consumers' purchase intentions. Richmond (1996) argued that if an Internet shopping mall promotes and disseminates products or services, it will be beneficial to extend the time for consumers to browse the Internet shopping mall. If a product or service is introduced through video by introducing multimedia technology, consumers can experience the feeling directly, which further strengthens the purchase intention. Haubl & Trifts (2000) found that in a study, if online shopping malls provide a collaborative platform to consumers, consumers can significantly shorten information retrieval time, help consumers make decisions, and increase consumers' purchase intentions. Jarvenpaa (2005) found that when an online shopping mall attracts consumers through photos and videos and interacts with a consumer network through an Internet shopping mall, the consumer's belief in the Internet shopping mall is created, which was said that it would be helpful for stimulation and elevation. When Arun (2002) studies the influencing factors of purchase intention, the price and quality have a distinct effect on consumers' purchase intention and the effect of the online shopping mall's quality of services on consumers' purchase intention.

RESEARCH MODEL, HYPOTHESIS, OPERATIONAL DEFINITION

Research Model, Hypothesis

This study aims to design a research model to analyze and verify the effect of e-commerce Internet live broadcasting shopping on consumers' purchase intention. First, through analysis of related previous studies, it will positively affect consumers' purchase intention. We looked at the characteristics of e-commerce internet live broadcast shopping. Many of the existing studies have focused on specific product types or specific elements of live shopping and analyzed the effect on consumers' purchase-related psychology and behavior. This study aims to select and verify more universal and general characteristics that various e-commerce Internet live broadcasting shopping should positively influence consumers' purchase intention. This study is a common element that should be dealt with fundamentally for high-quality production regardless of various types of e-commerce internet live shopping. It is the premise that product-related information is effectively delivered to consumers. A research model selects the characteristics belonging to the two significant content and streamer factors, which is the moderator in charge of content deliverer' and setting the consumer's purchase intention' as a dependent variable.

As suggested in the theoretical background, UGC, created by many sellers, changing the product information presented in text and pictures to video, but it is difficult to say that it has the

characteristics of content that should be equipped as an e-commerce internet live shopping. Currently, the practical and easy-to-use method for many sellers to increase UGC's content's quality to some extent is that streamers and contents must have some universal and general characteristics, and these characteristics are broadcast live on the Internet for the sale of specific products. It will be necessary to gradually improve the streamer's ability and the quality of content in planning and executing live internet shopping to consider how it should be delivered to consumers through shopping. Among the various characteristics reviewed through prior research in consideration of these points, this study has a high possibility of positively affecting consumers' purchase intention. Specifically, the streamer's expertise, awareness, homogeneity, attractiveness, and reliability are 5. Four characteristics were selected and set as independent variables, such as dog, content interactivity, entertainment, discount, and uniqueness. Accordingly, a total of nine hypotheses were raised about the effect of e-commerce Internet live broadcasting shopping on consumers' purchase intentions (H1~H9). The schematic of the research model is as follows. (Figure 1.)

H1: E-commerce Streamer's expertise in live online shopping will positively (+) influence consumers' purchase intentions.

H2: E-commerce Streamers' awareness of live online shopping will have a positive (+) effect on consumers' purchase intentions.

H3: E-commerce The homogeneity of streamers when shopping on the Internet live broadcast will have a positive (+) effect on consumers' purchase intentions.

H4: E-Commerce The attractiveness of streamers when shopping online for live broadcasts will have a positive (+) effect on consumers' purchase intentions.

H5: E-commerce Streamer's credibility in live online shopping will have a positive (+) effect on consumers' purchase intentions.

H6: E-Commerce The interactivity of content during live online shopping will have a positive (+) effect on consumers' purchase intentions.

H7: E-Commerce The entertainment of content during live online shopping will have a positive (+) effect on consumers' purchase intentions.

H8: E-commerce Internet live broadcast shopping, the discount of content will positively (+) affect consumers' purchase intentions.

H9: E-commerce The uniqueness of content when shopping on the Internet live broadcast will have a positive (+) effect on consumers' purchase intentions.

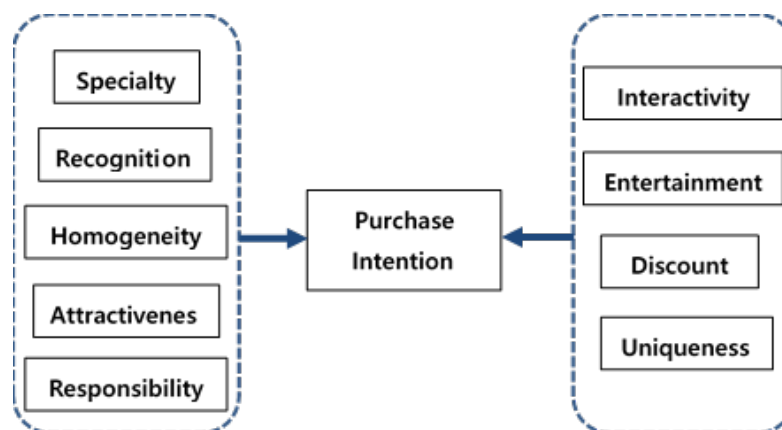


Figure 1. Research Model

Operational Definition

Independent variables include the streamer's expertise, awareness, homogeneity, attractiveness, reliability, interactivity of live content, entertainment, discount, and uniqueness. Moreover, the dependent variable is the consumer's purchase intention. All questions in the survey consist of "1=not at all", "2=not", "3=normal", "4=yes", and "5=very yes" using the Likard 5-point scale. The specific measurement items are as follows:

1. Streamer's expertise is defined as "experience and experience of using products recommended by streamers, familiarity with product information, level of expertise, level of ability to provide useful information." To measure how consumers feel streamer's expertise, this study comprises three questions that respond to the streamer's expertise in three aspects: product knowledge, ability, and experience. (A1. This streamer has enough knowledge about the product. A2. This streamer has excellent expertise in the field of products. A3. This streamer has sufficient experience with the product) (Bansal & Voyer, 2000; Gilly et al., 1998; Fang, 2018).
2. Streamer's awareness is defined as "the degree to which a streamer is known to the public," which is a measure of the size of a streamer's reputation. To measure the streamer's awareness in three aspects, including popularity, influence, and exposure rate, it comprises three questions corresponding to the following. (B1. When this streamer broadcasted live, there were a lot of viewers and fans in the live room. B2. This streamer frequently appears in the mass media. B3. This streamer has influence and appeal) (Ohanian, 1990; Liu, 2016).
3. Streamer's homogeneity is the detection of the degree to which consumers agree with the streamer in age, gender, beliefs, preferences, and lifestyle. In this study, the measurement of streamer homogeneity is divided into four aspects: basic personal information (e.g., personality, preference, age, gender, appearance characteristics, etc.), values, product taste, and career (C1. This streamer has the same as some basic information. (Example: personality, taste, age, gender, appearance characteristics) C2. This streamer is the same as my values. C3. This streamer is like my hobby for products. C4. This streamer has the same product experience as us.) (Gilly et al., 1998; Liu, 2018).
4. The streamer's attractiveness is the streamer's external image and inner personality. In this study, the measurement of streamer attractiveness is divided into two aspects: external and intrinsic (D1. We think this streamer is very pretty or in good shape. D2. We feel comfortable with this streamer's external image or voice. D3. This streamer has a strong personality charm. D4. This streamer has a strong personality charm.) (Zhang et al., 2017; Li, 2019; Li Xi, 2019).
5. Streamer's credibility is the level of consumer's trust in the streamer. In this study, the measurement of streamer reliability is divided into three aspects: ability, integrity, and goodwill (E1. We believe this streamer can recommend excellent products. E2. We believe the product information and experiences shared by this streamer are accurate. E3. We believe this streamer is favorable and will take into account the interests of consumers.) (Liu, 2018; Jia, 2019).
6. Live broadcasting contents' interactivity is the degree of real-time interaction and communication between streamers and consumers when broadcasting live e-commerce transactions. In this study, content interactivity measurement is divided into three aspects: participation, consumer response, and communication (F1. We actively participate in this streamer's live interaction and issues. F2. This streamer is actively responding to consumer problems or issues during the live broadcast process. F3. This

- streamer frequently exchanges and discusses with viewers in specific fields and live broadcast rooms) (Liu, 2018; Li, 2019).
7. The entertainment of content is that consumers experience a degree of fun and enjoyment while watching live e-commerce broadcasts. In this study, the measurement of content entertainment is divided into three aspects: pleasure, interest, and immersion (G1. We were in a great mood watching this streamer live. G2. We were very interested in watching this streamer's live broadcast. G3. When We watch this streamer's live broadcast, We fall into it and sometimes forget what to do.) (Robert & Rossiter, 1982; Zheng Xing, 2019; Jia, 2019).
 8. Content discounts are some discount programs that streamers give to consumers when broadcasting live e-commerce transactions. In this study, the measurement of content discount is divided into four aspects: purchasing the product that is not scheduled to be purchased because the price is low, the degree of discount, the opportunity to purchase a discounted product, and a discount (H1. Products recommended by this streamer are cheap. H2. The products recommended by this streamer have a high discount rate. H3. There are more opportunities to buy discounted merchandise in this streamer's live room. H4. We did not initially plan to buy it, but after watching this streamer's live broadcast, We felt so inexpensive that We wanted to purchase the recommended product) (Li Xi, 2019; Li, 2017).
 9. The uniqueness of content is different from other live broadcasts of the same type, whether the format of the live broadcast or the content has its characteristics when live broadcasting in e-commerce transactions. In this study, the measurement of content uniqueness is divided into style, format, time, and frequency (I1. This streamer's live broadcast style differs from other types of live broadcasts (e.g., humor, noisy, quiet). I2. This streamer's live broadcast format differs from other types of live broadcasts (e.g., stories, outdoor live broadcasts, shows, guest invites, tastings). I3. The time and frequency of this streamer's live broadcasts are different from other types of live broadcasts (e.g., live on-time, live on irregularities, live on new products, live on promotions).
 10. Purchasing intent refers to the high or low likelihood that consumers will purchase products when e-commerce internet is broadcast live. In this study, the measurement of purchase intention is divided into three aspects: purchase possibility, repurchase possibility, and shareability (J1. We are very likely to buy the product in this streamer's live room. J2. We will also consider buying a product from this streamer's live room next time. J3. We will recommend or share this streamer and a live broadcast room with our friends) (Jiang, 2019; Jia, 2019).

EMPIRICAL ANALYSIS

Demographic Characteristics

Looking at the characteristics of the total 310 respondents used for data analysis, males were 91 (29.4%), and females were 219 (70.6%), and the proportion of females was significantly higher than that of males. Respondents under 30 accounted for 83.5%, and the age group is mainly concentrated in the age group under 30. As for the degree of education, 78.1% of them were higher than vocational colleges, of which the bachelor's education was the most at 39.7%, followed by vocational college education and master's education. It is expected to provide data suitable for this study's analysis by explaining that most respondents have received higher education and have a relatively high understanding, acceptance, and awareness of live online

shopping. The student group is the largest at 48.4%, and it is expected to provide essential data in the analysis of this study. 77.1% of those with an average monthly consumption level of 3000 won or less accounted for the most, of which 1001~2000 won accounted for 35.8%, which can be seen as a result of most of the respondents are college students, and their income is relatively low. Considering that e-commerce Internet live broadcasting has become popular among young people in recent years, it can be estimated that the respondents' characteristics in this study are statistically reasonable.

Reliability and Validity

The overall α coefficient value is 0.857, which is greater than 0.8, indicating the questionnaire's reliability and stability. If the Cronbach's Alpha value of each variable and the corresponding measurement item is greater than 0.7, the total scale's reliability is high Table 1.

Table 1. Reliability Test Result

variable	Measurement question	Cronbach's Alpha	Cronbach's Alpha if Item Deleted
Specialty	A1	.885	.863
	A2		.809
	A3		.837
recognition	B1	.869	.774
	B2		.820
	B3		.848
homogeneity	C1	.878	.829
	C2		.835
	C3		.848
	C4		.859
attractiveness	D1	.902	.867
	D2		.885
	D3		.866
	D4		.874
responsibility	E1	.862	.796
	E2		.831
	E3		.794
Streamer		.773	
interactivity	F1	.881	.848
	F2		.800
	F3		.847
entertainment	G1	.887	.847
	G2		.815
	G3		.856
discount	H1	.911	.871
	H2		.880
	H3		.891
	H4		.894
uniqueness	I1	.875	.802
	I2		.844
	I3		.822
purchase intention	J1	.971	.940
	J2		.950
	J3		.978
Constructs		.838	
Total Scale		.857	

Validation of variables is performed through factor analysis. The principal component analysis method is used as the factor extraction method, and the right-angle rotation method (Varimax) is used as the factor matrix rotation method. KMO and Bartlett's sphericity test is performed to confirm the factor analysis's suitability and the suitability of the sample. The KMO test is an index used to compare simple and partial correlation coefficients between variables, with a range of 0-1. The more significant the KMO value, the stronger the Correlation between variables, so it is suitable for factor analysis.

On the contrary, the smaller the KMO value, the weaker the Correlation between variables indicates that it is not suitable for factor analysis. If the KMO is 0.9 or higher, it is very suitable for factor analysis. It is very suitable between 0.8-0.9. It is suitable between 0.7-0.8. It should be possible between 0.6-0.7. It indicates very bad between 0.5-0.6. Bartlett's spherical test is used to test whether each variable is independent. If Sig.<0.05, there is a correlation between the variables, and factor analysis can be performed. As shown in Table 2, the KMO value is 0.789, indicating that this group's data is suitable for factor analysis. At the same time, Sig. value is .0000, indicating a correlation between variables in the design, and is suitable for factor analysis.

Table 2. KMO 와 Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.789
Bartlett's Test of Sphericity	Approx. Chi-Square	2919.847
	DF	136
	Sig.	0.000

As shown in Table 3, five factors with an eigenvalue more significant than one were extracted. From the table, it can be seen that 78.027% of the total explanatory power for the previous five factors is greater than 60% so that the following explanation should be made. The factor loading refers to a simple correlation between an index and a variable. It can be seen that there is a strong relationship when the factor loading is more significant than 0.6. Also, when the factor loading amount is less than 0.4, a weak correlation can be found. If the factor loading amount is between 0.4 and 0.6, it indicates a moderate relationship. The component matrix obtained through SPSS analysis is shown in Table 1.4.

Table 3. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.799	22.349	22.349	3.799	22.349	22.349	3.119	18.347	18.347
2	3.065	18.029	40.378	3.065	18.029	40.378	2.948	17.34	35.686
3	2.422	14.249	54.628	2.422	14.249	54.628	2.452	14.424	50.111
4	2.191	12.886	67.513	2.191	12.886	67.513	2.385	14.03	64.141
5	1.787	10.514	78.027	1.787	10.514	78.027	2.361	13.886	78.027
6	0.445	2.619	80.646						
7	0.405	2.383	83.029						
8	0.388	2.285	85.314						
9	0.362	2.127	87.441						
10	0.331	1.949	89.390						
11	0.316	1.861	91.251						
12	0.292	1.716	92.967						
13	0.286	1.685	94.652						
14	0.261	1.536	96.188						
15	0.23	1.353	97.541						
16	0.213	1.256	98.797						
17	0.205	1.203	100						

Extraction Method: Principal Component Analysis.

Table 4. Component matrix

	Component				
	1	2	3	4	5
D3	0.890				
D1	0.887				
D4	0.878				
D2	0.858				
C1		0.868			
C2		0.867			
C3		0.842			
C4		0.813			
A2			0.917		
A3			0.898		
A1			0.866		
B1				0.899	
B2				0.892	
B3				0.849	
E3					0.892
E1					0.877
E2					0.871

Extraction Method: Principal Component Analysis.

According to Table 4, all factor loadings are above 0.8, so the Correlation between the overall index and the variable is strong. If the extracted factors are suitable for the model design, the questionnaire's structure efficiency is excellent. The method of measuring the model's mass by performing factor analysis in SPSS corresponds to exploratory factor analysis, analyzes the data directly, and then analyzes whether it matches the hypothesized model through result analysis. On the other hand, in AMOS, the progression factor analysis corresponds to the test factor analysis. The model assumed by AMOS is first determined, and then the collected data is substituted and examined. It is introducing the questionnaire data and evaluating the degree of conformity of the structural equation. The indices used in the text are GFI, AGFI, RMR, CFI, and CMIN/DF. We would like to look at the indices and evaluation criteria selected below. GFI is generally acceptable if the value of GFI is between 0.7 and 0.9, and this indicates that the closer to 1, the better the fit of the model is if it is 0.9 or more. AGFI is the same as the GFI analysis principle, but this can be accepted if the value of AGFI is between 0.7 and 0.9 except for the effect of the degree of freedom on GFI. It indicates that the fit of the model is better if it is 0.9 or more.

CFI is generally acceptable if the value of CFI is between 0.7 and 0.9, and this indicates that the fit of the model is better if it is above 0.9. CMIN/DF is generally accepted if the value of CMIN/DF is less than 5, and if it is between 1 and 3, the suitability of the explanatory model is suitable. The TLI does not need to guarantee that its value range is between 0 and 1, and the TLI is close to 1, indicating a good fit. RMR generally indicates that the model fit is better if the value of RMR is less than 0.08. The fit index results are shown in Table 1.5. According to Table 5, the value of AGFI is more significant than 0.9. Able to know. The value of TLI is 0.997, which is between 0 and 1 and approaches 1. Moreover, it indicates that the CFI value is more significant than 0.998, and the value of RMR is less than 0.046. It can be seen that all indices fit the criteria, the established model has a good fit, and analysis can be performed accordingly.

Table 5. Model goodness-of-fit index

CMIN/DF	GFI	AGFI	TLI	CFI	RMR
1.061	0.957	0.939	0.997	0.998	0.046

According to Table 6, the KMO value is 0.801, indicating that this area's data are suitable for factor analysis. At the same time Sig. value is .0000, indicating a correlation between the design variables and is suitable for factor analysis. Next, We want to do a factor analysis. As shown in Table 7, four factors with an eigenvalue more significant than one were extracted. According to the table, it can be seen that the total explanatory power of all four factors is 80.506%, which is greater than 60%, and the following steps can be performed. The component matrix obtained through the SPSS analysis is shown in Table 8. As shown in Table 1.8, all factor loadings are above 0.8, so the Correlation between the overall index and the variable is good.

Table 6. KMO 와 Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.801
Bartlett's Test of Sphericity	Approx. Chi-Square	2492.408
	DF	78
	Sig.	0.000

Moreover, if the extracted factors are suitable for the model design, the questionnaire's structural validity is good. The fitness index results are shown in Table 9. According to Table 9, the value of CMIN/DF is 1.483, between 1 and 3. The value of GFI is 0.960, indicating that it is more significant than 0.9. The AGFI value is 0.938, which is greater than 0.9, and the TLI value is 0.985 between 0 and 1 and approaches 1. The value of CFI is 0.988, which is greater than 0.9. The value of RMR is 0.037, which is less than 0.05. Accordingly, all indices fit the standard, the established model has a good fit, and the subsequent analysis is to proceed.

Table 7. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	4.575	35.194	35.194	4.575	35.194	35.194	3.162	24.326	24.326
2	2.256	17.356	52.55	2.256	17.356	52.55	2.451	18.857	43.183
3	2.087	16.054	68.603	2.087	16.054	68.603	2.443	18.795	61.977
4	1.547	11.903	80.506	1.547	11.903	80.506	2.409	18.529	80.506
5	0.377	2.899	83.406						
6	0.361	2.776	86.181						
7	0.342	2.635	88.816						
8	0.307	2.364	91.18						
9	0.27	2.074	93.254						
10	0.263	2.022	95.277						
11	0.256	1.969	97.246						
12	0.2	1.539	98.784						
13	0.158	1.216	100						

Extraction Method: Principal Component Analysis.

Table 8. Component matrix

	Component			
	1	2	3	4
H1	0.880			
H3	0.875			
H2	0.870			
H4	0.860			
G3		0.895		
G2		0.887		
G1		0.861		
F2			0.879	
F3			0.878	
F1			0.854	
I1				0.904
I3				0.889
I2				0.876

Extraction Method: Principal Component Analysis.

Table 9. Model goodness-of-fit index

CMIN/DF	GFI	AGFI	TLI	CFI	RMR
1.483	0.960	0.938	0.985	0.988	0.037

Table 10, since the KMO value is 0.755, indicates that such data can be performed by factor analysis. At the same time, Sig. value is .0000, indicating a correlation between the designed variables, and factor analysis can be performed. We want to look at the following factor analysis. As shown in Table 11, one factor with an eigenvalue more significant than one was extracted. According to the table, the total explanatory power is more significant than 65.047%, explained next. According to the component matrix Table 12, all factor loadings are above 0.7, so the Correlation between the overall index and the variable is good. The extracted factors are suitable for the model design, indicating that the questionnaire's validity is good.

Table 10. KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.755
Bartlett's Test of Sphericity	Approx. Chi-Square	1295.297
	DF	3
	Sig.	0.000

Table 11. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	2.835	94.488	94.488	2.835	94.488	94.488
2	0.123	4.104	98.592			
3	0.042	1.408	100			

Extraction Method: Principal Component Analysis.

Table 12. Component matrix

	Component
	1
J2	0.982
J1	0.976
J3	0.958

Correlation Analysis

The Pearson analysis is used to correlate variables. The greater the Pearson correlation's absolute value, the stronger the Correlation, indicating that the range of values is -1.0 to 1.0. If the absolute value of the Pearson correlation is more significant than 0.8, the Correlation is robust; Strong Correlation is suggested if the absolute value of Pearson's Correlation is between 0.6 and 0.8; When the absolute value of Pearson's Correlation is between 0.4 and 0.6, it means that it is moderately related. If Pearson's Correlation's absolute value is between 0.2 and 0.4, it indicates a weak correlation. If the Pearson correlation's absolute value is less than 0.2, the constellation may be extremely weak, and there may be no correlation. According to the table above, there is a positive correlation between the streamer's professionalism, recognition, homogeneity, attractiveness, reliability, and purchase intention. Initially, the hypotheses H1, H2, H3, H4, H5 were tested. According to the table above, there is a positive relationship between content interactivity, entertainment, discount, uniqueness, and purchase intention. Initially, the hypotheses H1, H2, H3, H4, H5 were tested.

Table 13. Analysis of Correlation between streamer's factor and purchase intention

		Purchase intention	Specialty	Recognition	Homogeneity	Attractiveness	Responsibility
Purchase intention	Pearson Correlation	1	.255**	.341**	.254**	.249**	.245**
	Sig. (2-tailed)		0	0	0	0	0
	N	310	310	310	310	310	310
Specialty	Pearson Correlation	.255**	1	0	0	0	0
	Sig. (2-tailed)	0		1	1	1	1
	N	310	310	310	310	310	310
Recognition	Pearson Correlation	.341**	0	1	0	0	0
	Sig. (2-tailed)	0	1		1	1	1
	N	310	310	310	310	310	310
Homogeneity	Pearson Correlation	.254**	0	0	1	0	0
	Sig. (2-tailed)	0	1	1		1	1
	N	310	310	310	310	310	310
Attractiveness	Pearson Correlation	.249**	0	0	0	1	0
	Sig. (2-tailed)	0	1	1	1		1
	N	310	310	310	310	310	310
Responsibility	Pearson Correlation	.245**	0	0	0	0	1
	Sig. (2-tailed)	0	1	1	1	1	
	N	310	310	310	310	310	310

**** Correlation is significant at the 0.01 level (2-tailed).**

Table 14. Analysis of Correlation between factors of content and purchase intention

		Purchase intention	Interactivity	Entertainment	Discount	Uniqueness
Purchase intention	Pearson Correlation	1	.384**	.264**	.360**	.136*
	Sig. (2-tailed)		0	0	0	0.016
	N	310	310	310	310	310
Interactivity	Pearson Correlation	.384**	1	0	0	0
	Sig. (2-tailed)	0		1	1	1
	N	310	310	310	310	310
Entertainment	Pearson Correlation	.264**	0	1	0	0
	Sig. (2-tailed)	0	1		1	1
	N	310	310	310	310	310
Discount	Pearson Correlation	.360**	0	0	1	0
	Sig. (2-tailed)	0	1	1		1
	N	310	310	310	310	310
Uniqueness	Pearson Correlation	.136*	0	0	0	1
	Sig. (2-tailed)	0.016	1	1	1	
	N	310	310	310	310	310

**** Correlation is significant at the 0.01 level (2-tailed).**

*** Correlation is significant at the 0.05 level (2-tailed).**

Structural Equation Verification

This section is to verify the theoretical model of the effect of live e-commerce online shopping in China on consumer purchase intentions and to verify the hypothetical relationship between streamers of live e-commerce broadcasts and the contents of live e-commerce broadcasts. This paper organizes and studies the relevant literature. The streamer's expertise, recognition, homogeneity, attractiveness, reliability, interactivity, entertainment, discount, and uniqueness of live content become independent variables, and purchase intention is dependent. Furthermore, make a model construction Figure 2. As shown in Table 15, the model fit index and criteria were obtained by analyzing with AMOS. GFI is generally acceptable if the value of GFI is between 0.7 and 0.9, and this indicates that the closer to 1, the better the fit of the model is if it is 0.9 or more.

AGFI is the same as the GFI analysis principle, but this can be accepted if the value of AGFI is between 0.7 and 0.9 except for the effect of the degree of freedom on GFI. It indicates that the fit of the model is better if it is 0.9 or more. CFI is generally acceptable if the value of CFI is between 0.7 and 0.9, and this indicates that the fit of the model is better if it is above 0.9. CMIN/DF is generally accepted if the value of CMIN/DF is less than 5, and if it is between 1 and 3, the suitability of the explanatory model is suitable. RMSEA indicates the difference in model failure fit when the RMSIA value is more than 0.1. If the RMSIA value is less than 0.1, it can be accepted. If the RMSIA value is less than 0.05, the model fit is acceptable. NFI is generally

acceptable if the NFI value is between 0.7 and 0.9, indicating that the model fits better if it is above 0.9. IFI can be accepted if the value is between 0.7 and 0.9, and it also indicates that if the value is above 0.9, i.e., the closer it is to 1, the better the fit of the model. According to Table 15, the CMIN/DF value of this study's model and sample data is 1.467, which is between 1 and 3, so the fit is good. The GFI value is 0.885, and goodness-of-fit is applicable. The value of AGFI is 0.868, and the goodness of fit is applicable. RMSEA is 0.039, which has good suitability. The value of CFI is 0.973, which has good suitability. The value of NFI is 0.913, which has good suitability. The value of IFI is 0.973, which is a good fit. As each fit index reaches the general research standard, it can be said that this model has a good fit.

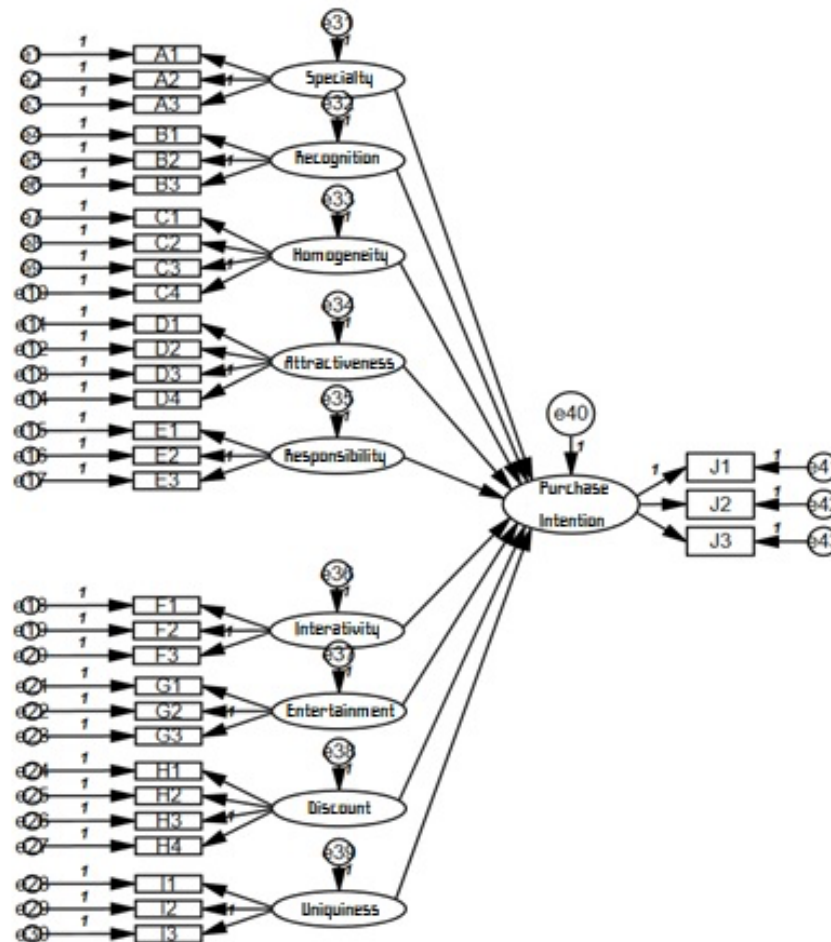


Figure 2. Structural equation model

Table 15. Model goodness-of-fit index

CMIN/DF	GFI	AGFI	RMSEA	CFI	NFI	IFI
1.467	0.885	0.868	0.036	0.973	0.913	0.973

The hypothesis's test is mainly based on the standardization factor and C.R. the value and P-value judge it. According to academic standards, when C.R.'s absolute value is 1.96 or more, the significance value is $P < 0.001$. It is indicated as '***' to adopt the research hypothesis; It is understood that $P > 0.05$ has not been reached. According to Table 16, the D.C. value compared

with purchase intention is greater than 1.96, with professionalism, recognition, homogeneity, attractiveness, reliability, interactivity, entertainment, discount, and uniqueness. Also, since all of the P values were significantly smaller than 0.001, the H1, H2, H3, H4, H5, H6, H7, H8, and H9 were all adopted. The nine hypotheses presented in the research model are tested, and the situation in which the model hypothesis is tested is mainly judged as a significant value. The hypothesis can be adopted when the P values of the two variables are less than 0.05. If the P-value is greater than 0.05, the hypothesis is not adopted. According to this principle, hypothesis testing results through data analysis are shown in Table 17.

Table 16. Regression Weights

			Estimate	S.E.	C.R.	P
Purchase intention	<---	Specialty	0.431	0.033	13.251	***
Purchase intention	<---	Recognition	0.434	0.038	11.495	***
Purchase intention	<---	Homogeneity	0.53	0.044	11.998	***
Purchase intention	<---	Attractiveness	0.386	0.029	13.171	***
Purchase intention	<---	Responsibility	0.306	0.034	8.977	***
Purchase intention	<---	Interactivity	0.339	0.031	10.761	***
Purchase intention	<---	Entertainment	0.396	0.033	11.903	***
Purchase intention	<---	Discount	0.453	0.036	12.754	***
Purchase intention	<---	Uniqueness	0.368	0.033	11.222	***

Table 17. Research hypothesis verification result

Research hypothesis	Results
H1: E-commerce Streamer's expertise in live online shopping will positively (+) influence consumers' purchase intentions.	Accept
H2: E-commerce streamers' awareness of live online shopping will positively (+) influence consumers' purchase intentions.	Accept
H3: The homogeneity of streamers in e-commerce Internet live shopping will positively (+) influence consumers' purchase intentions.	Accept
H4: E-commerce The attractiveness of streamers when shopping on the Internet live broadcast will have a positive (+) effect on consumers' purchase intentions.	Accept
H5: E-Commerce Streamer's credibility in live online shopping will have a positive (+) effect on consumers' purchase intentions.	Accept
H6: E-Commerce, The interactivity of contents during live internet shopping, will have a positive (+) effect on consumers' purchase intentions.	Accept
H7: E-Commerce, The entertainment of content during live online shopping, will positively (+) influence consumers' purchase intentions.	Accept
H8: E-commerce Internet live broadcast shopping, the discount of content will positively (+) affect consumers' purchase intentions.	Accept
H9: E-commerce The uniqueness of contents when shopping on the live Internet broadcast will positively (+) influence consumers' purchase intentions.	Accept

CONCLUSION

This study aims to analyze the general characteristics of live e-commerce online shopping that positively (+) influence consumers' purchase intentions. The research was on the relationship between live online e-commerce shopping in China and consumers' purchase intentions. The summary of the research results is as follows. In this study sample, the respondents were more concentrated in the younger age group under the 30s and the highly educated group. The number of women was significantly higher than that of men, and the average monthly consumption level's demographic characteristics were low. It can be seen as a relatively consistent result with the current status of e-commerce Internet live broadcasting shopping in China, spreading mainly among younger age groups in recent years. Second, as a result of data analysis, it was found that both the streamer and the contents selected in this study had an important influence on the purchase intention of consumers when shopping for e-commerce internet live broadcasting. Specifically, nine characteristics are selected: streamer's expertise, recognition, homogeneity, attractiveness, reliability, content interactivity, entertainment, discount, and uniqueness, positive for consumers' purchase intention (+). There was a statistically significant result that is affected.

The conclusions and implications derived from this study are as follows. First, when shopping for high-quality e-commerce Internet live broadcasts that stimulate consumers' purchase intentions, the streamer's professionalism, recognition, homogeneity, attractiveness, reliability, and interactivity of contents, entertainment, discount, and uniqueness are selected. The role will be necessary. PGC, which produces high-quality Internet live shopping, which occupies a small portion of the industry, has provided a large amount of capital and human resources with high expertise so that these characteristics are well-equipped. These characteristics are specific to particular products or specific events. It can be seen as a

thoroughly planned result, well harmonized according to demand. Second, it is possible to refer to the following measures that can be practically utilized with limited UGC resources, which is conducting live shopping on the low-quality Internet, which currently occupies a large portion of the industry. First of all, the streamer should have enough preparation in advance, such as product-related information, rich knowledge, and experience of use, and then feel the expertise to consumers during live broadcasting. Secondly, it would be advantageous to analyze the preliminary user group's characteristics in advance and select a streamer whose homogeneity overlaps a lot with the user group. These two characteristics will likely lead to continued trust and loyalty of consumers to streamers and products. Third, many UGCs are practically impossible to recruit suitable streamers with high awareness and strong attractiveness due to limited resources, so it will be necessary to gradually increase the awareness of streamers and increase their attractiveness through practice. Fourth, interactivity shared in real-time between streamers and consumers and between consumers is a unique characteristic that could not be realized in existing e-commerce platforms. Preparing specific interactions of specific interactions to play an influential role in live broadcasting And verification will be needed in the actual process. Fifth, many consumers aim for a special discount when shopping in live broadcasting, so it will be necessary to emphasize product discount information. Lastly, entertainment and uniqueness are also well harmonized with other characteristics, so more viewers will likely flock to live online shopping and ultimately stimulate consumers' purchase intentions through continuous participation. Third, the nine characteristics extracted in this study are universal characteristics that should be provided. The roles and importance of these characteristics will be different depending on the product type. In general, consumers have a high demand for the streamer's expertise and image in the cosmetics-related beauty field. In the clothing field, the more homogeneity between the streamer and the consumer, the more effective it will be. In the home appliance field, there will be high demands on the design of the streamer's expertise and the way product information is displayed. Fourth, to improve the overall quality of e-commerce Internet live broadcasting shopping, theoretical and practical research that can support many UGCs is expected to develop in the academic field that constitutes the future system with a comprehensive and in-depth variety.

ACKNOWLEDGMENT

This study was supported by Hankuk University of Foreign Studies Research Fund of 2021.

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