Factors Affecting Consumers' Early Stage and Continuous Online Shopping Behaviour

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Abstract: At the end of 2019, the novel coronavirus pneumonia "COVID-19" broke out, and the sudden outbreak has greatly changed people's lifestyle. The spread of the "COVID-19" has restricted offline activities, and the way of shopping has been transformed into online shopping. Under this social background, the new shopping method online live-streaming shopping has entered people's life and has been quickly accepted by the public. The rapid development of internet technology makes the iterative updating of things more frequent, at this time, live-streaming shopping developed rapidly, and more and more people are willing to focus on live-streaming shopping rather than traditional shopping methods. However, the factors affect online shopping remain to be researched.

Keywords: Live Streaming Shopping; Consumer Behaviour; Marketing; Influencing factors of Live Streaming Shopping

1. Research hypothesis

Live streaming realizes bidirectional communication between streamers and consumers in a real-time interactive way, thus providing consumers with an immersive shopping experience and an emotional value in interpersonal interactions (Wohn et al., 2018). Nowadays, because of the characteristics of real-time interaction, the technology of live streaming has been widely applied to online marketing by enterprises to create higher conversion rate and better sales (Hu and Chaudhry, 2020). However, although many studies have investigated the influencing mechanism of live-streaming shopping on consumers' purchase intention (Wongkitrungrueng and Assarut, 2018; Sun et al., 2019; Park and Lin, 2020; Xue et al., 2020; Ma, 2021a,b), only a few of them involve the unique feature of live streaming e-commerce (i.e., interactions), making it unclear how live streaming interactions promote consumers' purchase intentions. In live-streaming rooms, streamers can display product information in diversified forms, including but not limited to offering product close-ups, model displays, and promotions, which reduce the uncertainty of consumers (Kozlenkova et al., 2017). In particular, streamers' opinions eliminate consumers' concerns and confidence in them. At the same time, consumers improve their social presence through real-time interaction with streamers and other viewers, thus gaining pleasant emotional experiences (Chen and Lin, 2018).

Among the above influencing factors, their own factors include gender, age, income, education level, time spent watching live shopping, and the degree of demand for products by watching live streaming shopping; live streamer factors include live streamer appearance, live streamer specialty, live streamer advertising; commodity factors include product exhibition, product price, product quality and whether it is a brand; platform factors include platform influence[1-3].

Consumers' own factors affect their purchasing behaviour when watching online live broadcasts for shopping.

① The relationship between gender and purchase behaviour when watching online live shopping for the first time. In order to study whether gender plays a role in the purchase behaviour of online shopping for the first time, we plan to incorporate gender into the questionnaire, and set male as 1 and female as 2. Here, we propose the following research hypotheses:

H1a: Consumers' gender positivity affects their purchasing behaviours while watching online shopping.

② The relationship between age and purchase behaviour when watching online live shopping for the first time. In order to study whether age plays a role in the purchase behaviour of online shopping for the first time, we plan to incorporate age into the questionnaire, and set the age of 18-25 as 1, the age of 26-

40 as 2, and the age of 41-60 as 2. 3, 4 for 60 years and older. Here, we propose the following research hypotheses:

H1b: Consumers' age positively affects their purchasing behaviours when watching online live shopping.

③ The relationship between income and purchase behaviour when watching the online live broadcast for the first time. In order to study whether the income plays a role in the purchase behaviour when watching the online live broadcast for the first time, we plan to include the income in the questionnaire, and set the income below 1,000 yuan as 1, 1,000-5,000 yuan as 2, and 5,000-20,000 yuan as 3, 4 for more than 20,000 yuan. Here, we propose the following research hypotheses:

H1c: Consumers' income level positively affects their purchasing behaviour when watching online live shopping.

④ The relationship between education level and purchasing behaviour when watching online live shopping for the first time. In order to study whether education level plays a role in the purchase behaviour of online shopping for the first time, we plan to incorporate education level into the questionnaire, and set junior high school and below as 1, high school as 2, university as 3, and master's degree as 1 and above is 4. Here, we propose the following research hypotheses:

H1d: Consumers' educational level positively affects their purchasing behaviour when watching online live shopping.

⑤ The relationship between the time spent watching live streaming shopping and the purchase behaviour when watching the online live shopping for the first time. In order to study whether the time spent watching live streaming shopping plays a role in the purchase behaviour, we plan to include the time spent watching live streaming shopping in the questionnaire, and set 5 minutes as 1; 5-30 minutes as 2 and more than 30 minutes as 3. Here, we propose the following research hypotheses:

H1e: The length of time consumers watch live shopping has a positive impact on their purchasing behaviour when watching live streaming shopping.

⑥ The relationship between the degree of demand for the product and the purchase behaviour when watching the live streaming shopping for the first time. In order to study whether the degree of demand for products plays a role in the purchase behaviour of live streaming shopping for the first time, we plan to include the degree of demand for products in the questionnaire, and set the low as 1, the middle as 2, and the high as 3. Here, we propose the following research hypotheses:

H1f: Consumers' demand for products positively affects their purchasing behaviours when watching online live shopping.

When consumers watch live streaming shopping, the live streamer factor affects their purchasing behavior:

⑦ The relationship between the image of the live streamer and the purchase behaviour when watching the live streaming shopping for the first time buyers. In order to study whether the image of the live streamer plays a role in the purchase behaviour when watching the live streaming shopping for the first time, we plan to include the influence of the image of the live streamer on whether or not to buy into the questionnaire, and set the low as 1, the middle as 2, and the high as 3. Here, we propose the following research hypotheses:

H2a: The image of live streamers positively affects their purchasing behaviours when watching online live broadcasts for shopping.

⑧ The relationship between the professionalism of the live streamer and the purchase behaviour when watching the live streaming shopping for the first time. In order to study whether the professionalism of the live streamer plays a role in the purchase behaviour when watching the live streaming shopping for the first time, we plan to include the influence of the professionalism of the host on whether or not to buy into the questionnaire, and set low as 1, medium as 2, high as 3. Here, we propose the following research hypotheses:

H2b: The professionalism of live streamers positively affects their purchasing behaviours when watching online live broadcasts for shopping.

⑨ The relationship between the advertising effect of the live streamer and the purchase behaviour

when watching the live streaming shopping for the first time. In order to study whether the advertising effect of the live streamer plays a role in the purchase behaviour when watching the live streaming shopping for the first time, we plan to include the influence of the advertising effect of the live streamer on whether or not to buy into the questionnaire, and set the low as 1, the medium as 2 and the height as 3. Here, we propose the following research hypotheses:

H2c: The advertising effect of live streamers positively affects their purchasing behaviours when watching live streaming shopping for shopping.

The commodity factors affect consumers' purchasing behaviour when they watch live streaming shopping:

⑩The relationship between product quality and purchase behaviour when watching live streaming shopping for the first time. In order to study whether product quality plays a role in purchasing behaviour when watching live streaming shopping for the first time, we plan to include the influence of product quality on whether or not to buy into the questionnaire, and set low as 1, medium as 2, and high as 3. Here, we propose the following research hypotheses:

H3a: Product quality positively affects their purchase behaviour when watching live streaming shopping.

⑪ The relationship between product price and purchase behaviour when watching live streaming shopping for the first time. In order to study whether the product price plays a role in the purchase behaviour when watching the live streaming shopping for the first time, we plan to include the influence of the product price on whether or not to buy into the questionnaire, and set the low as 1, the middle as 2 and the high as 3. Here, we propose the following research hypotheses:

H3b: Product price positively affects their purchase behaviour when watching live streaming shopping.

⑫ The relationship between product display and purchase behaviour when watching live streaming shopping for the first time. In order to study whether the product display degree plays a role in the purchase behaviour when watching the live streaming shopping for the first time, we plan to include the influence degree of product display on whether or not to buy into the questionnaire, and set low as 1, medium as 2 and high is 3. Here, we propose the following research hypotheses:

H3c: Product visibility positively affects their purchase behaviour when watching live streaming shopping.

⑬ The relationship between whether the product is a more famous brand and the purchase behaviour when watching the live streaming shopping for the first time. In order to study whether the brand of the product plays a role in the purchase behaviour when watching the live streaming shopping for the first time, we plan to include the influence of the brand of the product on whether or not to buy into the questionnaire, and set low as 1, medium as 2 and high as 3. Here, we propose the following research hypotheses:

H3d: Whether a product is a more famous brand affect or not affects its purchase behaviour when watching a live streaming shopping.

⑭ Platform affect consumers' purchasing behaviour when they watch live streaming shopping. In order to study whether the platform plays a role in the purchase behaviour when watching the live streaming shopping for the first time, we plan to include the influence of the platform factor on whether or not to shop into the questionnaire, and set the low as 1, the middle as 2 and the high as 3. Here, we propose the following research hypotheses:

H4a: Platform factors positively affect the purchase behaviour when watching live streaming shopping.

2. Model Construction

We use the first-time buyer to represents the early stage customers. Based on whether consumers place an order when they watch live streaming shopping for the first time, we put the customers will have or not place an order as a dependent variable, which represented as Y; the factors investigated in the questionnaire are gender, age, income, education level, the time of watching live streaming shopping for the first time, the customer demand for products when watching live streaming shopping for the first

time, the influence of the live streamer image on whether to place an order or not, the influence of live streamer professionalism on whether to place an order (live streamer specialty), the influence of the advertisement effect of the live streamer on the order (live streamer advertising), the influence of the product display on whether to place an order (product exhibition), the influence of product price on whether to place an order (product price), the influence of product quality on whether to place an order (product quality), and the influence of seller branding on whether to place an order (brand) as independent variables. Set "Purchase order = 1, purchase without order = 0", therefore, this is a binary variable, using a binary classification logistic regression model, the function form as follows:

$$Y(P)=Log(p/1)=b0+b1X1+ b2X2+ b3X3+…+ bpXp.$$

Among them, Xp represents 14 independent variables, and p is the probability of event occurrence. Occurrence ratio = frequency of occurrence of events/frequency of non-occurrence of events, that is p/1-p. When the occurrence ratio is greater than 1, it indicates that the independent variable has a positive effect on the occurrence rate of event p, or the occurrence probability of the event is high; When the ratio is less than 1, it indicates that the independent variable has a negative effect on the occurrence rate of event p, or the occurrence probability of the event is low[4-7].

3. Empirical research

In total 200 questionnaires were distributed to eligible consumers, a total of 193 valid questionnaires were collected, of which 85 purchased and 108 did not purchase. After all factors were included in the logistic regression analysis model through stata software, it was found that gender, income, education level, time spent on watching live streaming shopping for the first time, demand for products when watching live streaming shopping for the first time (requirement), influence of the live streamer image on whether or not to place an order (live streamer appearance), the influence of the live streamer's live broadcast professionalism on whether to place an order (live streamer specialty), the influence of the live streamer's advertising effect on the order (live streamer advertising), the influence of the product display on whether to place an order (product exhibition) , the influence of product price on whether to place an order (product price), the influence of product quality on whether to place an order (product quality), the influence of branding on whether to place an order (brand) is positively correlated with the order and purchase, age (age) is negatively correlated with ordering and purchasing. (Table 1).

Table 1: The influencing factors of whether consumers place an order when watching live shopping for the first time, and all the factors are logistic regression.

buy	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
gender	.1944024	.5060627	0.38	0.701	-.7974623	1.186267
age	-.7685828	.3418143	-2.25	0.025	-1.438527	-.0986391
income	.0785963	.3289984	0.24	0.811	-.5662288	.7234214
education	.1301824	.433705	0.30	0.764	-.7198637	.9802286
time	1.355217	.601724	2.25	0.024	.1758597	2.534575
requirement	.3567257	.7398167	0.48	0.630	-1.093288	1.80674
anchorappearance	.8468335	1.35009	0.63	0.531	-1.799294	3.49296
anchorspecialty	2.131438	.6554825	3.25	0.001	.846716	3.41616
anchoradvertising	2.570667	.5185434	4.96	0.000	1.55434	3.586993
pruductexhibition	.9491322	.5363721	1.77	0.077	-.1021378	2.000402
platforminfluence	2.292285	1.487128	1.54	0.123	-.6224314	5.207002
productprice	.8160833	.4089444	2.00	0.046	.014567	1.6176
productquality	1.413397	.6528883	2.16	0.030	.1337597	2.693035
brand	.6388052	.5103972	1.25	0.211	-.3615549	1.639165
_cons	-28.41181	5.618248	-5.06	0.000	-39.42337	-17.40025

In order to further analyze the more significant influencing factors, set P<=0.05, the influence of the live streamer advertising effect on the order (live streamer advertising), the influence of the live streamer specialty on whether to place an order (live streamer specialty), the influence of quality on whether to place an order (product quality), the influence of product price on whether to place an order (product price), and the time spent watching live shopping (time) are included in the model (Table 2).

Table 2: Factors influencing whether consumers place orders when watching live streaming for the first time. When P<=0.05, five factors are included in the model.

buy	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
anchoradvertising	2.923316	.4956372	5.90	0.000	1.951885	3.894747
anchorspecialty	2.557454	.611796	4.18	0.000	1.358356	3.756552
productquality	1.578138	.6023521	2.62	0.009	.3975494	2.758726
time	1.335112	.5430618	2.46	0.014	.2707308	2.399494
productprice	.751542	.3584983	2.10	0.036	.0488982	1.454186
_cons	-20.51381	2.87177	-7.14	0.000	-26.14237	-14.88524

The five influencing factors are further calculated, including the influence of the live streamer advertising effect on the order (live streamer advertising), the influence of the live broadcast professionalism of the live streamer on whether to place an order (live streamer specialty), and the influence of the product quality on whether to place an order (product quality), the influence of product price on whether to place an order (product price), and the influence of watching live streaming shopping (time) on whether or not to place an order. The advertising effect of the live streamer has the most obvious influence on the consumers' first viewing of live streaming shopping, and the OR value reaches 18.60; the live streamer specialty's OR value reached 12.90; the OR value of the product quality influence on consumers' first viewing of live streaming shopping is 4.85; the OR value of the viewing time is 3.80; The OR value of the influence of product price on consumers' first viewing of live streaming shopping and placing an order is 2.12. Therefore, the probability that consumers place an order after watching live shopping for the first time can be obtained: P=1/{1+exp[-(2.923316* live streamer advertising + 2.557454* live streamer specialty + 1.578138* product quality + 1.335112*time – 20.51381)]

Table 3: The most significant influencing factors of whether consumers place orders when watching live streaming for the first time.

buy	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
anchoradvertising	18.60288	9.22028	5.90	0.000	7.041952	49.14364
anchorspecialty	12.90293	7.893959	4.18	0.000	3.889793	42.80061
productquality	4.845924	2.918953	2.62	0.009	1.488173	15.77973
time	3.800423	2.063864	2.46	0.014	1.310922	11.0176
productprice	2.120267	.7601121	2.10	0.036	1.050113	4.280996
_cons	1.23e-09	3.54e-09	-7.14	0.000	4.43e-12	3.43e-07

Table 4: The OR value calculated for the most significant influencing factor of whether consumers place an order when watching live streaming for the first time.

buy	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
anchoradvertising	19.99213	9.397939	6.37	0.000	7.956543	50.23351
anchorspecialty	17.05002	9.961334	4.85	0.000	5.425222	53.58366
_cons	1.97e-06	3.47e-06	-7.43	0.000	6.15e-08	.0000628

In order to further analyze the more significant influencing factors, when P<=0.001 is set, only the influence of the live streamer advertising effect on buying behaviors (live streamer advertising) and the influence of the live streamer professionalism on whether to place an order (live streamer specialty) 2 factors went into the model (Table 3), and we obtained its OR value (Table 4), the results show that the influence of the live streamer's advertising effect on whether consumers place an order after watching the live streaming shopping for the first time is very obvious, and the OR value reaches 19.99. The influence of liver streamer specialty is also very obvious, with an OR value of 17.05. The above results show that the most significant factor affecting consumers' first time live streaming shopping is the advertising effect and the professionalism of the live streamer, which far exceeds the influence of product quality and product price on customer behavious[8-10].

When P<=0.001, only the influence of the live streamer advertising effect on the order (live streamer advertising) and the influence of the live streamer professional degree on whether to place an order (live streamer specialty) are included in the model. The results show that the advertising effect of the live streamer has a significant influence on whether consumers place an order after watching the live

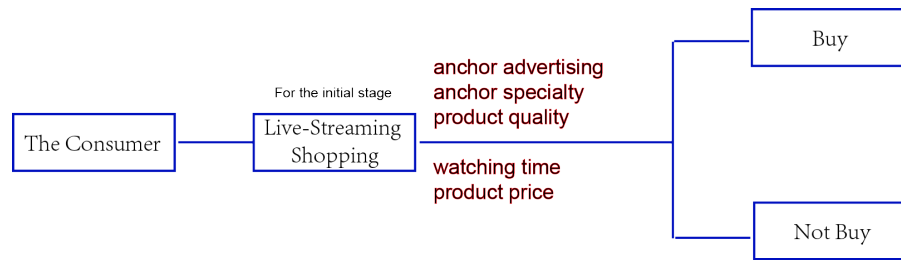streaming shopping for the first time, and the OR value reached 19.99.

Figure 1: Factors that affect consumer behaviors for the initial stage

4. Summary

Factors that influence whether consumers place an order after watching a live streaming shopping in the initial stage include the advertising effect of the live streamer, the professionalism of the live streamer, the quality of the product, the length of watching the live streaming shopping, the price of the product and the quality of the product. Whether or not to place an order, among all the factors, the one with most significant influence is the advertising effect of the live streamer and the professionalism of the live streamer. The above conclusions also explain that the initial consumers may be influenced by the live streamers to buy some products that they do not need (Figure 1).

5. Factors Affecting Consumers' Continuous Online Shopping Behaviors

5.1 Influencing factors

According to the above hypothetical model, in the previous online shopping questionnaire, the factors we investigated include gender, age, income, education, and the number of people who watched the live streaming shopping.

5.2 Research hypothesis

Among the above influencing factors, factors include gender (gender), age (age), income (income), education level (education), the time spent watching live streaming shopping (time), and the degree of demand for products by watching live streaming shopping (requirement); live streamer factors include live streamer appearance, live streamer specialty, live streamer advertising; commodity factors include product exhibition, product price, product quality and whether it is a more famous brand; platform factors includes platform influence.

Consumers' own factors affect their purchasing behavior when watching online live broadcasts for shopping:

① The relationship between gender and the purchase behavior of live streaming shopping. In order to study whether gender plays a role in the purchase behavior of live streaming shopping, we intend to incorporate gender into the questionnaire, and assign male as 1 and female as 2. Here, we propose the following research hypotheses:

H5a: Consumers' gender affects their purchasing behaviors while watching live streaming shopping.

② The relationship between age and purchase behavior of live streaming shopping. In order to study whether age plays a role in the purchase behavior of live streaming shopping, we plan to incorporate age into the questionnaire, and set 18-25 years old as 1, 26-40 years old as 2, and 41-60 years as 3, 60 years old and older as 4. Here, we propose the following research hypotheses:

H5b: Consumers' age affects their purchase behavior of live streaming shopping

③ The relationship between income and the purchase behavior of live streaming shopping. In order to study whether the income plays a role in the purchase behavior of live streaming shopping, we plan to include the income in the questionnaire, and set the income below 1,000 RMB as 1, 1,000-5,000 RMB as 2, 5,000-20,000 RMB as 3 and RMB 20,000 and above as 4. Here, we propose the following research hypotheses:

H5c: Consumers' income level affects their purchase behavior of live streaming shopping

④ The relationship between the educational level and the purchase behaviour of live streaming shopping. In order to study whether the educational level plays a role in the purchase behavior of live streaming shopping, we plan to include the educational level into the questionnaire, and assign the level of education includes 1 for junior school and below, 2 for high school, 3 for university, and 4 for master's degree and above. Here, we propose the following research hypotheses:

H5d: Consumers' education level affects their purchase behaviour of live streaming shopping.

⑤ The relationship between the time spent on watching live streaming shopping and the purchase behaviour of live streaming shopping. In order to study whether the length of watching time plays a role in the purchase behaviour of live streaming shopping, we plan to include the time of watching live streaming shopping in the questionnaire, and set the time, set 1 for watching less than 5 minutes, and 2 for 5-30 minutes, 3 for more than 30 minutes. Here, we propose the following research hypotheses:

H5e: The time consumers spend on watching live streaming shopping has a positive impact on their purchase behaviour of live streaming shopping.

⑥ The relationship between the demand for the product and the purchase behaviour of live streaming shopping. In order to study whether the demand for products plays a role in the purchase behaviour of live streaming shopping, we plan to include the demand for products in the questionnaire, and set the low as 1, the middle as 2, and the high as 3. Here, we propose the following research hypotheses:

H5f: Consumers' demand for products positively affects their purchase behaviour of live streaming shopping

When consumers watch live streaming shopping, the live streamer factor affects their purchasing behavior

⑦ The relationship between the image of the live streamer and the purchase behaviour of live streaming shopping. In order to study whether the live streamer image plays a role in the purchase behaviour of live streaming shopping, we plan to include the influence of live streamer image on whether or not to buy into the questionnaire, and set the low as 1, the middle as 2, and the high as 3. Here, we propose the following research hypotheses:

H6a: The image of live streamers positively affects their purchase behaviour of live streaming shopping

⑧ The relationship between the professionalism of the live streamer and the purchase behaviour of live streaming shopping. In order to study whether the professionalism of the live streamer plays a role in the purchase behaviour of live streaming shopping, we plan to include the influence of the professionalism of the live streamer on whether or not to buy into the questionnaire, and set the low as 1, the medium as 2, and the high as 3. Here, we propose the following research hypotheses:

H6b: The professionalism of live streamers positively affects their purchase behaviour of live streaming shopping.

⑨The relationship between the advertising effect of the live streamer and the purchase behaviour of live streaming shopping. In order to study whether the advertising effect of the live streamer plays a role in the purchase behaviour of live streaming shopping, we plan to include the influence of the advertising effect of the live streamer on whether or not to buy into the questionnaire, and set the low as 1, the medium as 2 and the high as 3. Here, we propose the following research hypotheses:

H6c: The advertising effect of live streamers positively affects their purchase behaviour of live streaming shopping.

Commodity factors affect consumers' purchasing behavior when they watch live streaming shopping

⑩ The relationship between product quality and purchase behaviour of live streaming shopping. In order to study whether product quality plays a role in continuous purchase behavior, we plan to include the influence of product quality on whether or not to purchase into the questionnaire, and set low as 1, medium as 2, and high as 3. Here, we propose the following research hypotheses:

H7a: Product quality positively affects their purchase behaviour of live streaming shopping.

⑪ The relationship between the product price and the purchase behaviour of live streaming shopping. In order to study whether the product price plays a role in the continuous purchase behavior, we plan to include the influence of the product price on whether or not to purchase into the questionnaire, and set the low price as 1, the middle price as 2, and the high price as 3. Here, we propose the following research hypotheses:

H7b: Product price positively affects their purchase behaviour of live streaming shopping.

⑫ The relationship between product visibility and the purchase behaviour of live streaming shopping. In order to study whether product visibility plays a role in continues purchase behaviour of live streaming shopping, we plan to include the impact of product visibility on whether or not to purchase into the questionnaire, and set low as 1, medium as 2, and high as 3. Here, we propose the following research hypotheses:

H7c: Product visibility positively affects customers' purchase behaviour of live streaming shopping

⑬ The relationship between whether the product is a famous brand and the purchase behaviour of live streaming shopping. In order to study whether the brand of the product plays a role in the continuous purchase behaviour of live streaming shopping, we plan to include the influence of the brand of the product on whether or not to purchase into the questionnaire, and set the low as 1, the middle as 2, and the high as 3. Here, we propose the following research hypotheses:

H7d: Whether a product is a more famous brand positively affects purchase behaviour of live streaming shopping

⑭ Platform factors affect consumers' purchase behaviour of live streaming shopping. In order to study whether the platform factor plays a role in the continuous purchase behaviour of live streaming shopping, we plan to include the influence of the platform factor on the purchase behaviors into the questionnaire, and set the low as 1, the middle as 2, and the high as 3. Here, we propose the following research hypotheses:

H8a: Platform factors positively affect customers' purchase behaviour of live streaming shopping.

5.3 Model Construction

We use the 1) buying behaviors lasts more than 3 months 2) bought some goods through live streaming shopping customers, to represents the customer type of continuous buying customers. This article will use whether to place an order to purchase a product as a dependent variable, which is represented by Y; the factors investigated in the questionnaire are gender, age, income, education level, product requirements (requirement), the influence of the live streamer on whether to place an order (live streamer appearance), the influence of the professionalism of live streamer on whether to place an order (live streamer specialty), the influence of the advertising effect of the whether to place an order (live streamer advertising), the influence of product display on whether to place an order (product exhibition), the influence of product price on whether to place an order (product price), the influence of product quality on whether to place an order (product quality), and the influence of branding on whether to place an order (brand) are used as independent variables. Set "Purchase order = 1, no order = 0", therefore, this is a binary variable, using a binary classification Logistic regression model, and its function form is as follows:

$$Y(P)=Log(p/1)=b0+b1X1+ b2X2+ b3X3+…+ bpXp.$$

Among them, Xp represents 14 independent variables, and p is the probability of event occurrence. Occurrence ratio = frequency of occurrence of events/frequency of non-occurrence of events, that is, p/1-p. When the occurrence ratio is greater than 1, it indicates that the independent variable has a positive effect on the occurrence rate of event p, or the occurrence probability of the event is high; When the ratio is less than 1, it indicates that the independent variable has a negative effect on the occurrence rate of event p, or the occurrence probability of the event is low.

5.4 Empirical research

Taking consumers who have more than three months of live streaming shopping experience and the purchase behavior as a sample, after distributing the questionnaire to eligible consumers, we conducted a total of 200 questionnaires to analysis the latest live streaming shopping experience, the obtained data will be analyzed by stata 15 software, and a logistic regression model will be constructed. Within 200

questionnaires, 197 valid questionnaires were collected, among the 197 questionnaires, 89 purchased and 108 did not purchase. After incorporating all factors into the logistic regression analysis model through stata software, it was found that the last time they watched a live streaming shopping, product demand, live streamer appearance, live streamer specialty, product exhibition, product price, product quality is positively correlated with order purchase, age (age), gender (gender), income (income), education level (education), the influence of the live streamer's advertising effect on the order (live streamer), platform influence (platform influence) is negatively correlated with order purchases (Table 5).

Table 5: The influencing factors of whether consumers place an order when they watch live streaming shopping for the first time, and perform logistic regression on all factors

buy	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
gender	-.0226581	.4600681	-0.05	0.961	-.9243751	.8790589
age	-.6071058	.3322869	-1.83	0.068	-1.258376	.0441646
income	-.8792363	.3306439	-2.66	0.008	-1.527286	-.2311862
education	-1.113215	.4233951	-2.63	0.009	-1.943054	-.2833755
time	.7949815	.527847	1.51	0.132	-.2395797	1.829543
requirement	2.227711	.5346759	4.17	0.000	1.179765	3.275656
anchorappearance	.9851833	.5247445	1.88	0.060	-.043297	2.013664
anchorspecialty	.4866544	.5028748	0.97	0.333	-.498962	1.472271
anchoradvertising	-.0762993	.5396839	-0.14	0.888	-1.13406	.9814617
pruductexhibition	.9210466	.3989918	2.31	0.021	.139037	1.703056
platforminfluence	-.501901	.7883154	-0.64	0.524	-2.046971	1.043169
productprice	1.898324	.6492642	2.92	0.003	.6257899	3.170859
productquality	1.749194	.510102	3.43	0.001	.7494121	2.748975
brand	0	(omitted)				
_cons	-13.06497	2.767071	-4.72	0.000	-18.48833	-7.641615

Seven factors, including product price, income, time spent watching live streaming shopping, and education level were included in the model (Table 6).

Table 6: Influencing factors of whether consumers place an order during the last viewing of live streaming shopping

buy	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
requirement	2.237222	.5049146	4.43	0.000	1.247607	3.226836
productquality	1.641637	.4652006	3.53	0.000	.7298611	2.553414
pruductexhibition	1.060277	.3698827	2.87	0.004	.3353207	1.785234
productprice	1.776827	.5924455	3.00	0.003	.615655	2.937999
income	-.8480669	.3102124	-2.73	0.006	-1.456072	-.2400618
time	1.039295	.4748568	2.19	0.029	.1085925	1.969997
education	-.7654925	.3683921	-2.08	0.038	-1.487528	-.0434572
_cons	-13.73486	2.351497	-5.84	0.000	-18.34371	-9.126011

There are 7 factors included in the model, including: the degree of demand for the live broadcast products to watch (requirement), the quality of the product (product quality), the degree of product exhibition (product exhibition), the level of product price (product price), and the income (income), the time of watch live streaming shopping (time) and education level of the customers who watch live streaming shopping (education).

Further calculate the OR value of the above seven influencing factors on whether to place an order, and the result is shown in Table 9. With an OR value of 8.52   (Table 7), the demand of products bring the most obvious impact on consumers' live streaming shopping purchase behaviors; product prices also have a significant impact on consumers' live streaming shopping purchase behaviors with an OR value of 7.05; The impact of product quality on consumers' live streaming shopping purchase behaviors is also very obvious, with an OR value of 4.24; the OR value of product display on consumers' live streaming shopping purchase behaviors is 3.02; the OR value of the time watching live streaming shopping impact consumers' live streaming shopping purchase behaviors is 2.57; the OR value of the influence of the income level on the consumers' live streaming shopping purchase behaviors is 0.50. Therefore, it can be further summarized that the probability that consumers place an order by watching live streaming shopping: P=1/{1+exp[-(8.518262*requirement + 7.05122* product price + 4.240022* product quality + 3.020304* product exhibition + 2.566879*time + 0.5016235*income + 0.5250331*education+

9.29*10-7)]}

Table 7: The OR value calculation of the influencing factors of whether consumers place an order after watching live streaming shopping for the first time

buy	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
requirement	8.518262	4.051706	4.50	0.000	3.353339	21.63837
productquality	4.240022	1.887468	3.25	0.001	1.771949	10.14577
pruductexhibition	3.020304	1.072899	3.11	0.002	1.505496	6.059293
productprice	7.05122	4.080656	3.38	0.001	2.268088	21.92141
income	.5016235	.1465265	-2.36	0.018	.2829685	.8892373
time	2.566879	1.169654	2.07	0.039	1.050841	6.270091
education	.5250331	.1865785	-1.81	0.070	.261637	1.053596
_cons	9.29e-07	2.14e-06	-6.04	0.000	1.02e-08	.0000845

5.5 Conclusions

The demand of product has the obvious impact on consumers' live streaming shopping purchase behaviors, with an OR value of 8.52; product prices also have a significant impact on consumers' live streaming shopping purchase behaviors, with an OR value of 7.05; The impact of product quality on consumers' live streaming shopping purchase behaviors is also very obvious, with an OR value of 4.24; the OR value of product display on consumers' live streaming shopping purchase behaviors is 3.02; The OR value of the influence of duration time on consumers' live streaming shopping purchase behaviors is 2.57; The OR value of the influence of the income level on consumers' live streaming shopping purchase behaviors 0.50.
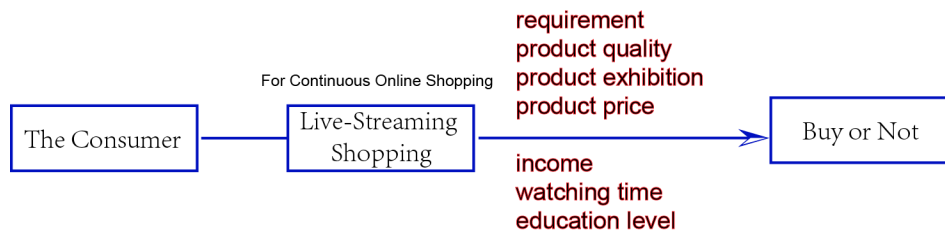

Figure 2: Factors that affect continuous live streaming shopping consumer behaviors

The above conclusions also indicates that high-quality and low-cost products in demand are still the secret to the sustainable development of the industry (Figure 2).

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