A Study on E-commerce Webcast Characteristics Based on Consumers' Perception

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Abstract: *The characteristics of network broadcast have important influence on consumers' attitude, emotion and decision-making behavior. Data were collected through a questionnaire survey on consumers. Descriptive statistical analysis and correlation analysis were conducted by SPSS software to investigate the e-commerce webcast characteristics (visibility, interactivity, authenticity and entertainment). The results showed that: (1) The mean values of the four dimensions of e-commerce webcast characteristics are between 3.45 and 3.66, indicating that the effect of e-commerce webcast is above the average level. (2) There is a significant positive correlation between the four dimensions of e-commerce webcast characteristics, indicating that they will influence each other. (3) Overall, there were differences in the evaluations of visibility, interactivity, authenticity and entertainment among respondents with different demographics. The above conclusions not only enrich the research on network broadcast marketing, but also can be used to guide the network broadcast marketing practice of e-commerce.*

Keywords: Wbcast characteristics, E-commerce, Consumers' perception

1. Introduction

With the continuous development of social media marketing technology, consumers' daily habits have undergone many changes, and online live shopping has gradually entered consumers' daily life[1]. Online live broadcasting with goods refers to a new shopping mode in which products are recommended to consumers and inquiries are answered by real-time video through live broadcasting platform, and then the purchase is completed[2]. In the scenario of e-commerce live broadcasting, consumers can know product information in real time[3]. For example, anchors can convey various information related to products to consumers. Videos can strengthen customer relationship management, and the information is more vivid and real than text description and pictures.

This study collect data through a questionnaire survey, and use SPSS software to descriptive statistical analysis and correlation analysis. Based on consumers' perception perspective, this study investigate e-commerce webcast characteristics of visibility, interactivity, authenticity and entertainment. It will help to understand the live webcast effect, predict live online marketing performance, and provide reference to improve the live webcast scene.

2. Webcast Characteristics

With the development of information technology, the emergence of network broadcast, a new social media, has narrowed the distance between life and screen, and has attracted extensive attention due to its features of entertainment, interaction and real-time[4]. In webcast mode, the consumer can real-time understand product information[3]. Compared with traditional marketing, network broadcast marketing has the following characteristics: (1) The target of consumers' attention has changed from the former anchor merchants (or stores) to network anchors or Internet celebrities. (2) The elements of consumer interest are changed. The points of interest can be the talent display of the host or the ability of verbal persuasion, instead of relying on the characteristics of the product or service itself. (3) Diversified information sources, consumers can learn about products or services through fans' interactive messages, online comments, website ratings and other comprehensive opinions. Information features play an important role in this process[1]. In recent years, the influence of network broadcast features on consumer perception and reaction has become the focus of academic attention. The atmosphere cues of

live broadcast scenes had a significant positive impact on impulse purchase intention[5]. The characteristics of e-commerce anchors (interactivity and professionalism) have a significant positive impact on consumers' purchase intention[6]. The visibility, interactivity, authenticity and entertainment of live broadcast would not only promote consumers' purchase intention[7]. The quality of live broadcast information has a significant positive impact on the perceived usefulness of live viewers' information, and the trust of anchors and the perceived usefulness and emotional attitude of attractive viewers have a significant impact[8]. Responsiveness, entertainment and mutuality of information interaction significantly and directly affect the participation behavior of users of e-commerce live broadcast[9]. In general, the characteristics of network broadcast mainly include visibility, interactivity, authenticity and entertainment, which will affect consumers' attitude, emotion and decision-making behavior.

3. Data Collection

The measurement of network broadcast features refers to relevant research[7]. From April 8 to 29, 2022, electronic questionnaires were distributed on QQ, Wechat and other social platforms with the help of Wenjuanxing platform. Consumers with online live shopping experience were surveyed. A total of 246 valid questionnaires were collected. The basic information of samples is shown in Table 1.

Table 1: Background characteristics of participants (N=246).

Characteristics		Frequency	Percentage (%)	Cumulative percentage (%)
Gender	Male	84	34.15	34.15
	Female	162	65.85	100.00
Age	20 years old or below	16	6.50	6.50
	21-35 years old	167	67.89	74.39
	36-50 years old	47	19.11	93.50
	Above 50 years old	16	6.50	100.00
Education level	High school or below	55	22.36	22.36
	College degree	69	28.05	50.41
	Bachelor degree	83	33.74	84.15
	Master or above	39	15.85	100.00
Monthly income	3000 CNY or less	54	21.95	21.95
	3001-5000 CNY	46	18.70	40.65
	5001-7000 CNY	53	21.54	62.20
	Above 7000 CNY	93	37.80	100.00
Professional	Student	22	8.94	8.94
	Employees of government organs or public institutions	31	12.60	21.54
	Enterprise staff	93	37.80	59.35
	Freelancer	46	18.70	78.05
	Others	54	21.95	100.00

4. Results

4.1 Reliability and Validity Test

Table 2: Reliability and validity test.

Dimension	Cronbach's Alpha	KMO	Bartlett's Test of Sphericity		
			Approx. Chi-Square	df	P
Visibility	0.952	0.727	823.363	3	<0.001
Interactivity	0.907	0.730	524.895	3	<0.001
Authenticity	0.936	0.803	1048.362	6	<0.001
Entertainment	0.946	0.751	734.159	3	<0.001
Overall scale	0.970	0.803	5278.746	78	<0.001

Cronbach's Alpha coefficient of the four dimensions of visibility, interactivity, authenticity, entertainment and the overall scale were all greater than 0.9, KMO values were all greater than 0.7, and

P values of bartlett's test of sphericity were all less than 0.001 (Table 2), indicating that they all had good reliability and validity.

4.2 Descriptive Statistical Analysis

The results of descriptive statistical analysis on the four dimensions of network broadcast features (visibility, interactivity, authenticity and entertainment) are presented in Table 3. The mean values are between 3.45-3.66. The standard deviation values are between 0.897-1.062. The absolute skewness values are between 0.493-0.649. The absolute kurtosis values are between 0.118-0.585.

Table 3: Descriptive statistical analysis.

Dimension	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Visibility	1.00	5.00	3.45	1.062	-0.493	-0.118
Interactivity	1.00	5.00	3.66	0.933	-0.618	0.409
Authenticity	1.00	5.00	3.66	0.897	-0.649	0.585
Entertainment	1.00	5.00	3.55	1.022	-0.497	-0.336

4.3 Correlation Analysis

The pearson correlation coefficients between the four dimensions of network broadcast features (visibility, interactivity, authenticity and entertainment) ranged from 0.755-0.887, and the P values were all less than 0.01 (Table 4), indicating significant positive correlation between them.

Table 4: Correlation Analysis(N=246).

Dimension	Visibility	Interactivity	Authenticity	Entertainment
Visibility	1			
Interactivity	0.851**	1		
Authenticity	0.755**	0.887**	1	
Entertainment	.702**	.761**	.806**	1

Note：**P< 0.01.

4.4 Independent Sample T-test and Analysis of Variance

Table 5: Independent samples test by gende

Dimension		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	P	t	df	P	Mean Difference
Visibility	Equal variances assumed	28.431	<0.001	-1.581	244	0.115	-0.225
	Equal variances not assumed			-1.356	114.193	0.178	-0.225
Interactivity	Equal variances assumed	54.780	<0.001	-2.243	244	0.026	-0.279
	Equal variances not assumed			-1.905	111.768	0.059	-0.279
Authenticity	Equal variances assumed	26.180	<0.001	-2.306	244	0.022	-0.276
	Equal variances not assumed			-1.992	116.063	0.049	-0.276
Entertainment	Equal variances assumed	13.937	<0.001	-0.058	244	0.954	-0.008
	Equal variances not assumed			-0.052	130.760	0.958	-0.008

T-test results of independent samples by gender (Table 5) showed that the mean scores of interactivity and authenticity were significantly different between males and females (P<0.05), while the mean scores of visibility and entertainment were not significantly different (P>0.05). The results of

variance analysis (ANOVA) by age (Table 6) showed that the mean scores of visibility (P<0.01), interactivity (P<0.05) and authenticity (P<0.01) of respondents with different age groups had significant differences, while the mean scores of entertainment had no significant differences (P>0.05). The results of ANOVA by education level (Table 7) show that there are significant differences in the mean scores of visibility, interactivity, authenticity and entertainment of respondents with different education levels (P<0.001). The results of ANOVA by monthly income (Table 8) show that the mean scores of visibility (P<0.05), interactivity (P<0.001), authenticity (P<0.001) and entertainment (P<0.001) of respondents with different monthly income have significant differences. The results of ANOVA by occupations (Table 9) showed that the mean scores of visibility, interactivity, authenticity and entertainment of interviewees from different occupations were significantly different (P<0.001).

Table 6: ANOVA by age.

Dimension		Sum of Squares	df	Mean Square	F	P
Visibility	Between Groups	17.035	3	5.678	5.304	0.001
	Within Groups	259.075	242	1.071		
	Total	276.111	245			
Interactivity	Between Groups	9.645	3	3.215	3.820	0.011
	Within Groups	203.686	242	0.842		
	Total	213.332	245			
Authenticity	Between Groups	12.205	3	4.068	5.329	0.001
	Within Groups	184.772	242	0.764		
	Total	196.977	245			
Entertainment	Between Groups	4.152	3	1.384	1.331	0.265
	Within Groups	251.550	242	1.039		
	Total	255.702	245			

Table 7: ANOVA by education level.

Dimension		Sum of Squares	df	Mean Square	F	P
Visibility	Between Groups	33.012	3	11.004	10.954	<0.001
	Within Groups	243.099	242	1.005		
	Total	276.111	245			
Interactivity	Between Groups	17.638	3	5.879	7.271	<0.001
	Within Groups	195.693	242	0.809		
	Total	213.332	245			
Authenticity	Between Groups	15.422	3	5.141	6.852	<0.001
	Within Groups	181.555	242	0.750		
	Total	196.977	245			
Entertainment	Between Groups	34.760	3	11.587	12.691	<0.001
	Within Groups	220.942	242	0.913		
	Total	255.702	245			

Table 8: ANOVA by monthly income.

Dimension		Sum of Squares	df	Mean Square	F	P
Visibility	Between Groups	8.916	3	2.972	2.692	0.047
	Within Groups	267.194	242	1.104		
	Total	276.111	245			
Interactivity	Between Groups	15.365	3	5.122	6.261	<0.001
	Within Groups	197.966	242	0.818		
	Total	213.332	245			
Authenticity	Between Groups	32.557	3	10.852	15.973	<0.001
	Within Groups	164.420	242	0.679		
	Total	196.977	245			
Entertainment	Between Groups	68.806	3	22.935	29.698	<0.001
	Within Groups	186.896	242	0.772		
	Total	255.702	245			

Table 9: ANOVA by professional.

Dimension		Sum of Squares	df	Mean Square	F	P
Visibility	Between Groups	120.033	4	30.008	46.336	<0.001
	Within Groups	156.077	241	0.648		
	Total	276.111	245			
Interactivity	Between Groups	87.151	4	21.788	41.614	<0.001
	Within Groups	126.180	241	0.524		
	Total	213.332	245			
Authenticity	Between Groups	80.748	4	20.187	41.858	<0.001
	Within Groups	116.229	241	0.482		
	Total	196.977	245			
Entertainment	Between Groups	69.234	4	17.309	22.370	<0.001
	Within Groups	186.468	241	0.774		
	Total	255.702	245			

5. Conclusion

Network broadcast shortens the distance between life and screen, and its visibility, interactivity, authenticity, entertainment and other characteristics will affect consumers' attitude, emotion and decision-making behavior. Based on the perspective of consumer perception, this study collected data through questionnaire survey, and conducted descriptive statistical analysis and correlation analysis with SPSS software to investigate the visibility, interactivity, authenticity and entertainment of the features of e-commerce network broadcast. The results showed that: (1) The mean values of the four dimensions of visibility, interactivity, authenticity and entertainment of network broadcast features are between 3.45 and 3.66, indicating that the effect of e-commerce network broadcast is above the average level. (2) There is a significant positive correlation between the four dimensions of visibility, interactivity, authenticity and entertainment of network broadcast features, indicating that the four dimensions of network broadcast features will influence each other. (3) Overall, there were differences in the evaluations of visibility, interactivity, authenticity and entertainment among respondents with different demographics. Therefore, e-commerce webcast providers should comprehensively improve the visibility, interactivity, authenticity and entertainment in online livestreaming mode, so as to enhance the overall effect and promote the marketing performance of e-commerce webcast. This study enrich the relevant research on network broadcast marketing, and provide reference for live broadcast e-commerce enterprises to improve the network broadcast scene.

This study collected 246 samples. Future studies can expand the sample range and increase the sample size to improve the reliability of research results and conclusions. In addition, this study only examined consumers' perception and evaluation of the four dimensions of webcast characteristics (visibility, interactivity, authenticity and entertainment). Future research can further investigate the influence of network broadcast features on consumer loyalty and purchase intention.

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