

Modelling the Effects of Variety-Seeking on WOM in a Livestream Context

ABSTRACT

This study verifies the effects of fans' perceived variety-seeking on perceived value, attachment, and words of mouth in a live-streaming context. In this study, the questionnaire survey method was used to collect data, and 372 valid samples were obtained through online questionnaire survey. The results of the study found that the respondents' perceived value not only directly affected their words of mouth, but also affected their words of mouth through attachment while the manager didn't concern variety seeking issue within a live broadcast situation. Moreover, in a live-streaming context, variety seeking do strengthen fans' perceived value-attachment relationships. Based on this, the study suggests that companies should prioritize improving the emotional and social value provided by live broadcasts to gain platform dependence and recognition from fans.

Keywords: live broadcast, words of mouth, perceived value, attachment

1. Introduction

Live broadcasting is one of the main communication modes of new media. The information sender delivers timely text, pictures, audio and video, animation and other information to the information recipient (Internet users or fans) through the Internet (Yen, 2021). Therefore, it has the characteristics of real-time, interactive, wide range of application, rich contents and themes, diversified forms of expression and so on while comparing to traditional TV media. Among them, real-time is called the sender can contact to receiver in time and on time; Interactivity refers to the interaction made by hosts and fans; A wide range of application means that sending and receiving messages are not limited by time, place and space, and fans can join or quit at any time; Rich content and topics refers to topics covering news, learning, leisure interests, shopping, technology, etc.; Multiple forms of expression means that live broadcast can be presented through text, pictures, audio and video, animation, or in a variety of ways.

Due to the diverse types of live broadcast programs, they are becoming more and more popular among users all over the world. And it attracts more and more Internet companies to add functions or create live broadcast platforms. New and old We media such as WeChat, Tiktok, Kuaishou, Himalaya, Xiaohongshu, etc. all have live broadcast functions or dedicated platforms. Under this circumstance, more and more companies and entrepreneurs are transmitting corporate brand and product information through live broadcasts, and try to attract users' attention and increase revenue. In such

Comment [T1]: This sentence is vague as the word 'perceived' is used twice.

Comment [T2]: It is a repetition. The use of questionnaire has already been mentioned.

Comment [T3]: Should be in plural form

Comment [T4]: This statement is unclear. Author may consider reconstructing the sentence to elaborate major findings as a result of analysis.

Comment [T5]: verb **do** does not agree with the subject

Comment [T6]: should be plural

Comment [T7]: incorrect form of the verb

Comment [T8]: Does the author aim to mention the definition of these key terms? The use of semicolon (;) is not appropriate. Author may consider using comma (,) or just make them simple sentences.

Sources (citations) are definitely needed to support the definitions written here.

Comment [T9]: an incorrect form of the verb

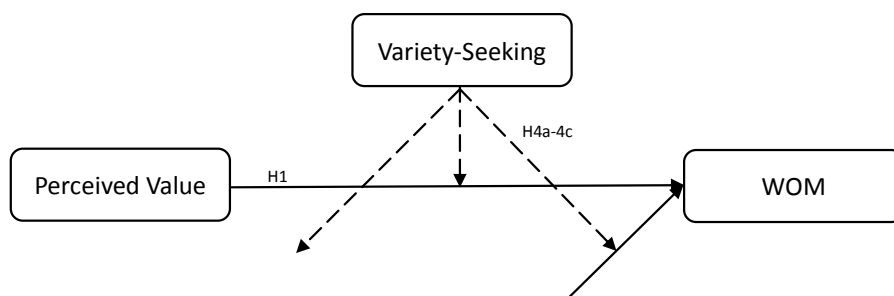
situation, the same product/brand can not only be performed on live broadcasting on multiple platforms, but fans have many choices of live broadcast platforms while there are so many firms **join** in the live broadcast industry. Consequently, it is easy to switch channels for fans, resulting in the phenomenon of variety-seeking among fans. The variety-seeking behaviors of fans and their impacts on corporate live broadcast activities have become an important research issue.

Comment [T10]: incorrect form of the verb

Furthermore, there are also problems such as fake live broadcast marketers, platforms, products and data, and consumer rights damage, and even problems in government supervision and thinking while the live broadcast is popular (Fang, 2021; Zhao, 2021). For example, the marketers' words and deeds, making use of minors' live broadcasts for profit, fulfilling the responsibility of the main body of the platform, data fraud and false propaganda, frequent occurrence of counterfeit and shoddy products, and difficulties in obtaining evidence for consumers' rights protection, etc., have received strong reactions from the masses (Huang and Kong, 2021). In other words, the current live broadcast industry may have problems with fans' perceived value, attachment and words of mouth.

Due to the numerous and convenient live broadcast platforms, fans have many choices, and fans have various search phenomena for watching live broadcasts. They can easily switch live broadcast platforms, which may have different effects on the perceived value and attachment of corporate live broadcasts. When a company engages in live broadcast activities, it may lead to a decrease in the perceived value of fans to a specific live broadcast platform (brand) and a decrease in attachment and damage to their reputation for the brand if the data is falsified or falsely promoted. However, even if a company truly promotes its brand through live broadcasts, fans will perceive higher value, but they will not be able to obtain higher attachment and words of mouth. Because the variety-seeking phenomenon of fans may reduce or strengthen the relationship between perceived value and attachment, perceived value and words of mouth.

Accordingly, the purpose of this study is to explore the effects of fans' variety-seeking phenomena on perceived value, attachment and words of mouth relationships in the context of live broadcasts, and to provide relevant suggestions. The research framework of this study is shown in Figure 1.



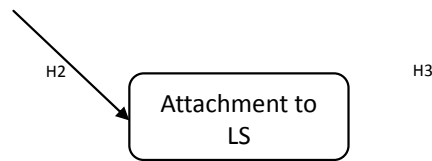


Figure 1. Research framework

2. Materials and Methods

2.1 Research hypotheses

Based on previous researches of Eid and El-Gohary (2015), Ramkissoon, David, Smith, and Weiler (2013), Yuksel, Yuksel, and Bilim (2010), Yen (2020a) and Yen (2020b), the research hypotheses were proposed, “H1: In the live broadcast situation, fans' perceived value is likely to affect their words of mouth”; “H 2: In the live broadcast situation, the fans' perceived value is likely to affect their attachment”; “H3: In the live broadcast situation, the fans' attachment is likely to affect their word of mouth”; “H4: In a live broadcast situation, fans’ variety-seeking perceptions is likely to affect their perceived value, attachment, and words of mouth relationships”.

2.2 The definition of variables and their measurements

This paper discusses the variable relationships in the live broadcast situation, which belongs to quantitative research. This research uses the questionnaire survey method to collect data. In terms of perceived value, it refers to fans efforts over their returns related to quality, financial, emotional, and social dimensions on visiting the live broadcast (Eid and El-Gohary, 2015). Platform attachment was defined as fans’ perceptions about the degree of platform dependent and platform identity while visiting the live broadcast (Ramkissoon, David, Smith, and Weiler, 2013; Yuksel, Yuksel, and Bilim,2010; Yen, 2020a). The definition of words of mouth refers to the extent of fans’ positive words and recommendations (Yuksel, Yuksel, and Bilim, 2010; Yen, 2020a). Variety-seeking was the extent of a fan who tries to seek an alternative while making a decision (Yen, 2020b).

In terms of measurement tools, basically the measure items used in this paper were adapted from previous researches of Eid and El-Gohary (2015), Ramkissoon, David, Smith, and Weiler (2013), Yuksel, Yuksel, and Bilim (2010), Yen (2020a) and Yen (2020b), which performed adequate reliability and validity. Questionnaire questions on perceived value (12 items), platform attachment (10 items), words of mouth (3 items), and variety-seeking (3 items) are developed, and the measurement tools have theoretical basis and expert validity after being judged by experts. Likert scale of 5 points ranging from 1 to 5 (1 for strongly disagree and 5 for strongly agree) were used

Comment [T11]: noun form may be incorrect

Comment [T12]: were does not appear to agree with the singular subject **scale**

for measuring the items.

2.3 Questionnaire survey

This research uses an online questionnaire, with fans who watch beauty live broadcasts as the matrix, and collects data through online questionnaires. The questionnaire was established in the questionnaire center in December 2021, and a total of 372 questionnaires were obtained by the end of December 2021.

In terms of sample characteristics, female accounted for 72.3% and male 27.7%. Age, 20-40 years old accounted for 32.4%, 41-50 years old accounted for 36.6%; 31% are over 51 years old. In terms of education level, 9.4% are below junior high school, 7.5% are above senior high school, 16.1% are above junior high school, and 66.9% are above bachelor degree. Most of the respondents are above junior high school. In terms of occupation, civil servants account for about 2.4%, and manufacturing employees account for 4.3%, 53.8% of respondents were students, 11.6% of respondents were employees in business and service industry, 3% of respondents were in agriculture and 25% were others. In terms of monthly average income, the monthly income below 3,000 yuan accounted for 62.9%, that of 3001-6000 accounted for 22.6%, that of 6001-8000 accounted for 7.5%, that of over 8,000 accounted for 7%, and that of respondents was mainly below 3000. In terms of the frequency of visits within a week, less than 5 times accounts for about 72.8%, 19.4% of respondents visit 6 to 10 times, and 7.8% of respondents visit the platform more than 11 times.

Comment [T13]: How was the sampling technique?

Comment [T14]: plural

Comment [T15]: plural

Comment [T16]: noun form may be incorrect

3. Results and Discussion

3.1 Descriptive statistics

The descriptive statistics of this study are shown in Table 1. The mean is between 2.84 and 3.92, the standard deviation is between 0.709 and 1.205, the absolute value of skewness is less than 3, and the absolute value of kurtosis is less than 10. The overall data does not violate the normal distribution. Secondly, the factor loadings of all the questions are greater than 0.7, and the reliability coefficients of the sub-facets are all greater than 0.7. The scale has good construct validity and reliability.

Comment [T17]: Author may consider displaying the sample characteristics in a table.

Comment [T18]: Discussion is not available.

After finding the results, author should interpret and describe the significance of the findings in relation to the problem statements. Author needs to explain any new insight that emerged as a result of the study. Hence, author needs to connect the discussion to the background of the study, hypotheses, and related literature that has been reviewed.

Table 1 Descriptive statistics (n=372)

Question items	Mean	SD	Sk	Ku	SFL
Quality Value (VE=71.58%, Cronbach's Alpha=.793)					
a1. Has a good organization.	3.76	.793	-.531	1.040	.832
a2. have an acceptable level.	3.92	.709	-.525	1.048	.891

a3. Maintain high levels throughout.	3.56	.877	-.042	-.471	.813
Financial Value (VE=75.36%, Cronbach's Alpha=.836)					
a4. Prices are fair.	3.85	.759	-.225	.075	.869
a5. Charges are reasonably priced.	3.79	.741	-.123	-.351	.891
a6. The price charged is economical.	3.81	.760	-.305	.244	.843
Emotional Value (VE=72.91%, Cronbach's Alpha=.814)					
a7. Watching the live stream makes me feel good.	3.56	.827	-.003	.016	.866
a8. Watching live, I can relax.	3.47	.867	-.046	-.201	.878
a9. Watching the live stream gives me a positive feeling.	3.62	.830	-.142	-.094	.817
Social Value (VE=75.80%, Cronbach's Alpha=.840)					
a10. Watching the live stream makes me happy.	3.54	.812	-.061	-.028	.828
a11. Watching the live stream has benefited me a lot.	3.41	.875	.035	-.026	.895
a12. Watching the live broadcast gave me a sense of social approval.	3.45	.906	-.082	-.118	.888
Platform Dependent (VE=73.48%, Cronbach's Alpha=.908)					
a21. Watching the live broadcast has a strong sense of identity.	3.35	1.019	-.171	-.672	.778
a22. Watching live has become a part of my life.	3.39	.885	.029	-.101	.825
a23. Watching XX brand cosmetics live is very special.	2.86	1.172	.219	-.757	.908
a24. Watching the live broadcast of XX brand cosmetics is very meaningful.	3.06	1.107	.016	-.551	.878
a25. Watching the live broadcast brought back many memories for me.	3.08	1.067	.004	-.491	.891
Platform Identify (VE=77.64%, Cronbach's Alpha=.927)					
a26. Watching the live broadcast, there is a deep psychological connection.	3.15	1.094	-.071	-.519	.873
a27. Watch live, better than other long videos.	3.16	1.042	-.086	-.369	.904
a28. Watching live broadcasts satisfies my leisure needs.	3.15	1.082	-.112	-.462	.882
a29. Watching a live broadcast is something that no other activity can replace.	3.18	1.093	-.088	-.551	.857
A30. Watching live broadcasts is an important leisure activity.	2.84	1.205	.192	-.896	.888
WOM for Live-stream (VE=73.20%, Cronbach's Alpha=.809)					
a31. I will tell others the advantages of XX brand cosmetics.	3.30	1.053	-.280	-.388	.800
a32. I will tell others about the features of XX brand cosmetics.	3.63	.891	-.687	.666	.885
a33 I would recommend others XX to buy branded cosmetics.	3.61	.900	-.592	.382	.879
Variety-Seeking (VE=73.53%, Cronbach's Alpha=.819)					

a41. I prefer cosmetics live broadcasts with high online ratings.	3.68	.965	-.511	-.160	.847
a42. I like to search for makeup livestreams recommended by my friends.	3.69	.968	-.532	-.074	.893
a43. I love watching makeup livestreams recommended by experts.	3.59	.990	-.372	-.439	.831

VE: Explained Variation; Sk: Skewness; Ku: Kurtosis; SFL: Standardized Factor loading

3.2 Confirmatory factor analysis

This study used AMOS 22 for confirmatory factor analysis, and the analysis results are shown in Table 2 and Table 3. Overall, the model fit is good and meets the theoretical requirements. All factor loadings reached a significant level, and the combined reliability (CR) was greater than 0.7, and the average extraction variance (AVE) was greater than 0.5 (Table 2). The scale used in this study has convergent validity. Secondly, the correlation coefficients between variables are all at a significant level, and the square root of the average extraction variation (AVE) is greater than the correlation coefficient (Table 3). The scale used in this study has discriminant validity.

3.3 Structural model analysis

The results of structural model analysis are shown in Table 4 and Table 5. The structural model analysis of this study adopts the stepwise addition method, and the variables are gradually added from model 1 to model 3. Model 1 discusses the relationship between perceived value and words of mouth, Model 2 explores the relationship between perceived value and words of mouth, and the relationship between perceived value and attachment; Model 3 explores the relationship between perceived value and words of mouth, the relationship between perceived value and attachment, and the relationship between attachment and words of mouth. It can be seen from Table 5 that the model fit is moderate, the perceived value of fans has a significant positive impact on attachment and word of mouth, and attachment significantly positively affects word of mouth. Hypotheses 1, Hypothesis 2, and Hypothesis 3 are all supported.

3.4 Moderated model analysis

Finally, this study divides the diversity search into two groups: high and low groups (138 samples in the low group and 234 samples in the high group) according to the average, and uses the multi-group model to analyze the interference model. The

analysis results are shown in Table 5. In the unrestricted mode, the main difference between high and low grouping is the impact of perceived value on word of mouth, and for the low-diversity search group, the effect is not significant. In other words, for fans with low-variety searches, their perceived value affects their words of mouth entirely through attachment mediation. For high-variety search fans, their perceived value can affect words of mouth directly or through attachment mediation. Second, in terms of interference effects, variety seeking significantly strengthened the perceived value-attachment relationship. In other words, in the context of high-variety search, the influence of fans' perceived value on attachment will be amplified, but the words of mouth effect will not be increased accordingly.

Table 2. Results of CFA (n=372)

Constructs	Indicator	λ	t-values	SMC	CR	AVE
Perceived value	PV1	.735	16.283	.541	0.881	0.653
	PV2	.652	13.913	.425		
	PV3	.916	22.488	.839		
	PV4	.899	22.051	.808		
Attachment to LS	PD1	.907	22.413	.822	0.943	0.893
	PI2	.981	25.388	.961		
WOM	WO1	.856	18.764	.732	0.758	0.516
	WO2	.649	13.303	.422		
	WO3	.627	12.695	.394		
Variety-Seeking	VS1	.752	15.808	.566	0.824	0.609
	VS2	.835	18.165	.697		
	VS3	.752	15.804	.566		

Notes: λ : Standardized factor loadings; SMC: Square multiple correlation; CR: Composite reliability; AVE: average variance extracted; All t-statistics are significant at 0.01 level; ($\chi^2=104.47$, d.f.=38, $p=.000$, $\chi^2/\text{d.f.} = 2.749$, GFI=.943, AGFI=.901, CFI=.963, RMSEA=.075)

Table 3. Discriminate validity (n=372)

Items	M	SD	PV	ALS	WO	VS
PV	10.94	1.82	0.808			
ALS	15.61	4.56	.754**	0.945		
WO	10.54	2.43	.705**	.690**	0.718	
VS	10.96	2.50	.558**	.432**	.497**	0.781

** $p < 0.01$

Table 4. Results of hypotheses testing for baseline model (n=372)

Paths	Model 1	Model2	Model 3
	Estimate(t)	Estimate(t)	Estimate(t)
PV-WO	0.856**(8.00)	0.883**(7.67)	0.391**(3.92)
PV-ALS		-0.876**(-11.71)	0.849**(12.07)
ALS-WO			0.524**(4.81)
R ² _{WO}	0.732	0.779	0.775
R ² _{ALS}		0.768	0.720
χ^2	15.52	84.32	55
d.f.(p)	10(0.000)	20(0.000)	19(0.000)
χ^2 /d.f.	1.55	4.21	2.90
GFI	0.988	0.953	0.968
AGFI	0.967	0.893	0.923
CFI	0.997	0.976	0.986
RMSEA	0.039	0.093	0.072

*p<0.05; **p<0.01

Table 5. Hypotheses testing for moderating effect

Paths	M1(VSL, n=138)	M2(VSH, n=234)	M3(Baseline model)	M4(Nested model)
	Estimate(t)	Estimate(t)	χ^2 (DF)	χ^2 (DF)
PV-WO	.249(1.65)	.502*** (3.36)	107(38)	108 (39)
PV-ALS	.703*** (6.25)	.877*** (9.13)	107(38)	117 (39)
ALS-WO	.689* (2.54)	.401** (2.83)	107(38)	110 (39)
R ² _{ALS}	.494	.769		
R ² _{WO}	.777	.765		
Chi-square testing				
H4a	$\Delta X^2/\Delta DF=1$			
H4b	$\Delta X^2/\Delta DF=10$, Supported			
H4c	$\Delta X^2/\Delta DF=9$			

*p<0.05; **p<0.01

4. Conclusion

Based on the analysis, this study found that the perceived value of fans does directly affect words of mouth, and also affects their words of mouth through attachment in the benchmark mode of live broadcast context. Therefore, companies should improve the quality value, financial value, emotional value, and social value of live broadcasts in order to gain words of mouth from fans. Among the perceived value

questions, the average score of emotional value and social value is low, and enterprises should prioritize improvement.

Moreover, the perceived value of fans will affect their words of mouth through attachment, and attachment is composed of live broadcast platform dependence and live broadcast platform identification in the live broadcast context. The live broadcast platform used is dependent, and fans should be guided to identify with the company's live broadcast platform in the long run, and it should be used to gain fans' words of mouth. Overall, the particularity and meaning of live broadcasts have a low average score and should be prioritized for improvement.

Finally, this study found that variety-seeking only affect the relationships between fans' perceived value and attachment, and it has no significant effects on perceived value-words of mouth and attachment-words of mouth. This shows that companies should clarify the variety-seeking characteristics of fans and strengthen fans' attachment to the company in the live broadcast context. For those fans with lower variety-seeking, perceived value does not directly affect words of mouth, but affects words of mouth through attachment. For those fans with higher variety-seeking, providing valuable live broadcasts can not only improve their reputation for their industry, but also increase their reliance on corporate live broadcast platforms and their recognition of live broadcast platforms.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

Reference

1. Yen, TF. (2021). Finding the Possible Solutions to the Cooperation within Livestream and Health and Wellness Tourism. *Asian Journal of Education and Social Studies*, 18(1): 34-40.
2. Fang, Xin (2021). Development obstacles and breakthrough Countermeasures of webcast platform. *Legality Vision*, 2021 (09), 139-140.
3. Zhao, Zheng (2021). Cognition and reconstruction of College Students' value relationship from the perspective of webcast. *Contemporary Youth Research*,

Comment [T19]: the verb **affect** does not agree with the subject

2021 (02), 87-94.

4. Huang, Qian and Kong, Jun (2021). How to manage live broadcast with goods? Here comes the new rule. Xinhua News Agency, 24th April 2021.
<https://baijiahao.baidu.com/s?id=1697823006929607747&wfr=spider&for=pc>
5. Eid, R., and El-Gohary, H. (2015). The role of Islamic religiosity on the relationship between perceived value and tourist satisfaction, *Tourism Management*, 46, 477-488.
6. Ramkissoon, H., David, L., Smith, G., and Weiler, B. (2013). Testing the dimensionality of place attachment and its relationships with place satisfaction and pro-environmental behaviours: A structural equation modelling approach, *Tourism Management*, 36, 552-566.
7. Yuksel, A., Yuksel, F., and Bilim, Y. (2010). Destination attachment: Effects on customer satisfaction and cognitive, affective and conative loyalty, *Tourism Management*, 31, 2, 274-284.
8. Yen, T.F. (2020a). Effects of experience authenticity on event Satisfaction, place attachment, and revisit intentions: An empirical study of wine culture festival at Yibin, Sichuan, *Journal of Island Tourism Research*, 12(4), 57-80.
9. Yen T.F. (2020b). Managing attendees' WOM at a wine cultural event: The moderating role of novelty-seeking, *Asian Journal of Education and Social Studies*, 7(3), 1-14.