

A study of the impact of online live shopping information display on consumers' purchase behaviour

Enshu Gu*, Yanhua Zhang, Linqing Yao

Department of Economics, School of Economy and Management, Communication University of China, Beijing, China

ABSTRACT

As a new form of content marketing in China, webcast shopping is in the stage of rapid development and exploration. Based on the SOR theoretical model, this study established a model of the impact of webcast information display on consumers' purchase behaviours. The external stimulus information at the level of products, network anchors and consumer groups will help consumers to establish cognitive at the level of product, relationship and emotional and further generate purchase intentions and behaviours. Through empirical analysis, the findings of this study are showed as follows. First, the information transmitted at the product level via webcast significantly and positively affects the establishment of consumer product, relationship and emotional cognition. Second, the information transmitted at the network anchor level also significantly and positively affects the establishment of consumers' cognition of products, relationships, and emotions. Third, the information at consumer group level transmitted through webcast only significantly and positively affects the establishment of relationship cognition, and the cognition at the product and emotion level is not significantly influenced. Forth, the impact of product, relationship, and emotional cognition established by online live shopping on consumers' purchase behaviours are significantly positive.

Keywords: Online live shopping, purchase behaviour, influence mechanism

INTRODUCTION

The development of the mobile Internet has given consumers ability to purchase merchandise anytime, anywhere, and the time spent on shopping is more fragmented. According to the 47th "China Statistical Report on Internet Development" released by the China Internet Network Information Center (CNNIC), as of December 2020, the number of Chinese online shopping users reached 802 million, with an increase of 172.3 million from December 2018. The scale of mobile online shopping users reached 781 million, with an increase of 188.67 million from 2018. The scale of online shopping users is still increasing while maintaining a huge volume. The huge scale of online consumers and the growth trend indicate that online consumption is further influencing the physical consumption. Meanwhile, webcasting has become a new outlet for users to spend their fragmented time. According to CNNIC, as of December 2020, the number of online live broadcast users reached 617 million. The online live shopping derived from webcast has also become an important part of the online consumption.

As a new form of merchandise content marketing in China, online live shopping is a new kind of shopping mode which recommend products to consumers, answer inquiries, and complete the purchase by means of real-time video by cooperating with live broadcast platforms¹. Online live shopping realizes the transition from pictures to videos, and the highly visual interface increases consumers' sense of presence² and trust³ from multiple senses. Nowadays, webcasting is in the stage of rapid development and exploration, which has aroused widespread concern. Current study about webcasts mainly focuses on communication, industry practice and legal aspects. And there are relatively few empirical studies. Therefore, this study applied the SOR model as a theoretical framework to further explore the internal mechanism among the product information display, consumer interaction behaviour and consumer product consumption behaviour in webcast to provide some reference for sales strategy, promotion of product sales and marketing efficiency in practice.

*guessgu@126.com

2. THE PRINCIPLE OF STIMULATE CONSUMPTION THROUGH WEBCAST

The SOR model believes that external stimuli will affect an individual's internal and external situations, thereby changing the individual's psychology and cognition, and thus influence the individual's behaviour⁴. Nowadays, the SOR model is widely used in the study of the impact of external environment on consumer behaviour and consumer willingness in the field of e-commerce.

In this study, we believe that the information transmitted via webcast mainly affects consumers' personal cognition and behaviour through stimulation at the product level, network anchor level and consumer group level. And the consumers' cognition about product, trust and emotion will lead to purchase behaviour, as shown in Figure 1.

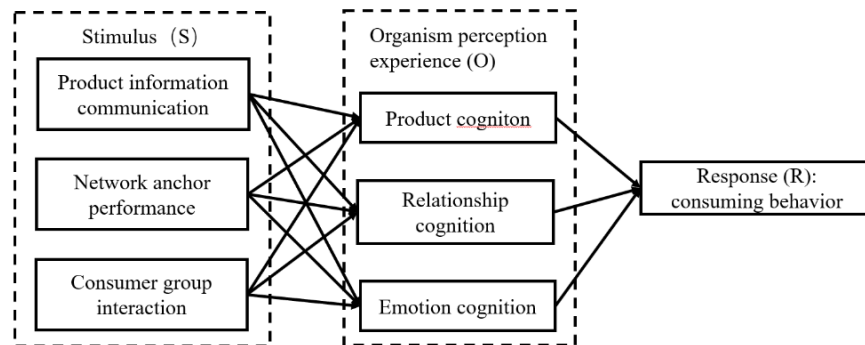


Figure 1. The impact of online live shopping on consumers' purchase behavior.

2.1 Product information to establish cognition

Through online live shopping, the information can obtain includes product performance, product price, and product brand. Consumers can obtain information about the product's functionality, durability, ease of use, scenario, symbolism, price, brand, etc.

The information transmitted via live webcast will help consumers to establish product awareness, which reduces the uncertainty of consumption and contributes to the establishment of trust. The acquisition of product information also lays a certain foundation for the establishment of consumers' purchase intention (or purchase emotion).

Based on the above discussion, this study puts forward the hypothesis of the impact of product information on consumers' individual cognition as follows:

Hypothesis 1: The product information is positive for consumer product cognition.

Hypothesis 2: The product information has a positive effect on the establishment of trust.

Hypothesis 3: The impact of product information on consumer sentiment building is positive.

2.2 Network anchors to establish cognition

As an intermediary between consumers and commodities in the process of online live shopping, the anchors all have a strong ability to influence consumers' purchasing decision^{5,6}. First, webcasters help consumers build product cognition more effectively by introducing products to consumers. Second, network anchors can build a personal setting and create a live broadcast atmosphere to attract consumer groups with similar values and create a more pleasant and interesting atmosphere for consumers. Consumers are likely to pay attention to and purchase products out of the trust of a certain anchor. At the same time, as a consumer guide, anchors' consumption advice is more influential. Third, the anchors also endorsed the products to a certain extent. Products recommended by anchors with good reputation are often considered to be trustworthy.

Based on the above discussion, this study puts forward the hypothesis of the impact of network anchors on consumers' individual cognition as follows:

Hypothesis 4: The anchor has a positive effect on consumers' awareness of the product.

Hypothesis 5: The anchor has a positive effect on the establishment of the trust.

Hypothesis 6: The anchor has a positive effect on consumers' sentiment building.

2.3 Consumer groups to establish cognition

Dupor and Liu (2003)⁷ pointed out that individual economic behavior will be affected by other individual behaviors in society. During the process of online live shopping, consumers can interact each other through comment barrage. This interaction is not limited to the interaction with the anchor, but can also be the interaction between consumers who watch the live broadcast. The content shared among consumers includes their shopping behavior, usage evaluation, and shopping experience. Wendner (2011)⁸ pointed out that in online environment, consumers will gain social recognition through interacting and imitating the behavior of peer or reference groups. The consumers who pay attention to a certain network anchor are often in the same social circle, and social interaction between consumers in the same circle is more likely to produce trust between people. Also, the function which enable communication between users will make users more enjoyable⁹, and the demonstration effect of consumption will trigger imitate shopping.

Based on the above discussion, this study puts forward the hypothesis of the impact of consumer group on consumers' individual cognition as follows:

Hypothesis 7: The interaction of consumer groups has a positive effect on the cognition of products.

Hypothesis 8: The interaction of consumer groups in online live shopping has a positive effect on the establishment of consumer trust.

Hypothesis 9: The interaction of consumer groups in online live shopping has a positive effect on consumer sentiment building.

2.4 Consumer cognition to establish cognition

Based on the motivation of consumers to watch online live shopping and the factors that may affect their purchase decision, consumers often watch live web shopping for the purpose of obtaining information, purchasing low-priced goods, and entertainment.

Anchors deliver products information to viewers through webcasts, which builds consumer cognition of the product, increases consumer preference and familiarity with the product, and enhances consumers' willingness to purchase¹⁰. Anchors, a kind of opinion leaders, based on their own professionalism, influence¹¹ and higher levels of product involvement and familiarity, to help consumer groups establish product cognition and gain the trust of consumer groups. In addition, the interaction between the anchor and the audience creates a real shopping scene for online live shopping. And through the promotion of commodities to arouse consumers' desire to consume.

Thus, his study puts forward the hypothesis of the impact of individual cognition on purchase intention and behavior as follows:

Hypothesis 10: The impact of consumer product cognition on purchase behavior is positive.

Hypothesis 11: The impact of trust relationship cognition on purchase behavior is positive.

Hypothesis 12: The impact of consumer sentiment on purchase behavior is positive.

3. EMPIRICAL STUDY

3.1 Scale design and data collection

This study uses an online questionnaire survey and relies on professional research websites for data collection. The questionnaire consists of two parts. The first part is the basic demographics contents, and the second part is the measurement scale. Based on the SOR theory and the characteristics of online live shopping, the scale explores the influencing factors of consumer purchase intention and behavior in online live shopping. The measurement variables involve three aspects: (1) stimulating factors, including product information communication, Anchor performance, consumer group interaction; (2) individual perception experience, including product cognition, relationship cognition, emotional cognition; and (3) purchase intention and behavior. The above variables are measured by 3-5 questions in the questionnaire. The scale uses a seven-point scale scoring method. A total of 285 answers were returned in this study. To ensure data quality, excluding questionnaires with a response time of less than one minute or obvious perfunctory responses, 262 valid responses were obtained.

3.2 Data analysis and hypothesis testing

3.2.1 *Consumer cognition to purchase decision.* Reliability refers to the rationality and accuracy of the measurement tools used. Reliability analysis can reveal the consistency and stability within the scale. This study uses SPSS19.0 as the reliability analysis software, and uses the Cronbach α test method. The reliability test result after processing shows that the overall Cronbach α values of all variables are >0.7 , which meets the internal consistency standard of the questionnaire and passes the reliability test.

Convergence validity refers to the correlation between the measurement items corresponding to the same latent variable. In this study, AMOS 22.0 was used as the validity analysis software, and we regard “observed variable factor load > 0.45 and reached a significant level” as the judgment standard. In the CFA model fitting indicators, $1 < NC < 3$, $P \text{ value} = 0.000$ (significant), $GFI > 0.9$, $RMSEA < 0.08$, $PGFI > 0.5$, all reached the ideal level, which shows that the model structure fitted well.

3.2.2 *Consumer cognition to purchase decision.* To intuitively understand the relationship between stimulus factors, individual perceived experience and decision-making behavior, AMOS 22.0 software and SPSS 19.0 software are used in combination to explore its influence mechanism. Use the latent variables of product information, network anchor, consumer group, product cognition, relationship cognition, and emotion cognition and save them as variables. Then establish a relationship between these latent variables and the four observed variables at the level of decision-making behavior to generate a structural equation model, as shown in Figure 2.

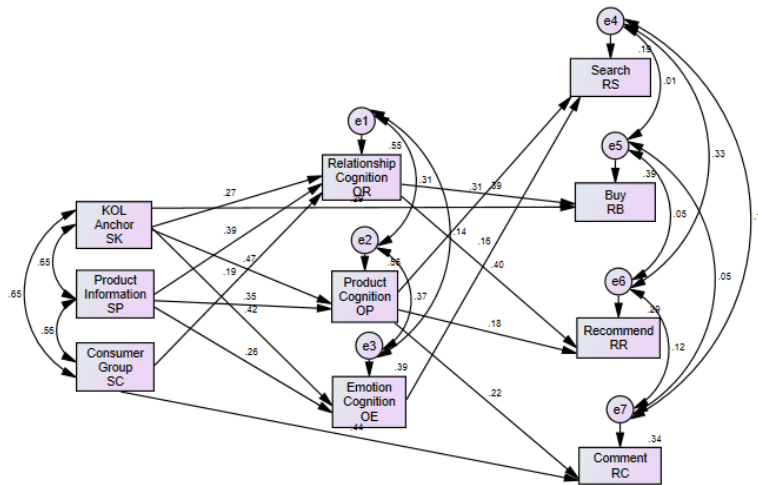


Figure 2. S-O-R structural equation mode.

The results reflected by the model are as follows. First, the performance of network anchors and the communication of commodity information have significant effects on relationship cognition, commodity cognition, and emotional cognition, while consumer group interaction only has a significant impact on the establishment of relationship cognition. Second, consumers’ relationship cognition has a significant impact on product purchases and product recommendations, product cognition has a significant impact on product search, product recommendation, and product reviews, while emotional cognition only affects Product search has a significant impact. Finally, the direct influence between the performance of the web anchor and product purchases, consumer group interaction, and product reviews also passed the significance test.

3.2.3 *Hypothesis test results.* Structural equation model test is a preliminary exploration of the S-O-R impact mechanism of online live shopping. In order to obtain a more accurate influence direction and influence size between variables, SPSS 19.0 is used to perform linear regression on latent variables, and the following hypothesis test results are obtained.

Table 1 below shows the results. First of all, at the product cognition level, the product information conveyed in online live shopping has a significant positive impact on the establishment of consumer product cognition, which means Hypothesis 1 has been verified. The performance of the anchor has a significant positive impact on the establishment of consumer product cognition, assuming Hypothesis 4 is verified. The interaction among consumers in online live shopping is not significant at the 5% level. Therefore, it is assumed that Hypothesis 7 is not verified.

Table 1. Regression analysis results.

Dependent variable	Independent variable	β	<i>t</i> -value	Adjusted R ²	<i>P</i> value of F test	DW test
Product cognition	Product information	0.322***	5.74	0.555	0.00	1.875
	Anchor	0.423***	6.959			
	Consumer group	0.1*	1.79			
Relationship cognition	Product information	0.384***	6.827	0.55	0.00	1.985
	Anchor	0.252***	4.125			
	Consumer group	0.223***	3.976			
Emotion cognition	Product information	0.246***	3.73	0.383	0.00	2.613
	Anchor	0.391***	5.461			
	Consumer group	0.061	0.931			
Purchase behavior	Product cognition	0.363***	5.166	0.472	0.00	1.727
	Relationship cognition	0.274***	4.394			
	Emotion cognition	0.148**	2.45			

Notes: *, **, and *** represent significant levels at 10%, 5%, and 1%, respectively.

Second, the product information conveyed in online live shopping has a significantly positive impact on the establishment of consumer relationship cognition. Hypothesis 2 is verified. The performance of the anchor has a significant positive effect on the establishment of consumer relationship cognition. Hypothesis 5 is verified. The interaction among consumers has a significant positive effect on the establishment of consumer relationship cognition. Hypothesis 8 is verified.

Third, the product information conveyed in online live shopping has a significant positive impact on the establishment of consumer emotional cognition. Hypothesis 3 is verified. The performance of the anchor in online live shopping has a significant positive effect on the establishment of consumers' emotional cognition. Hypothesis 6 is verified. The interaction between consumer groups in online live shopping has no significant effect on the establishment of consumers' emotional cognition. Hypothesis 9 does not hold.

Fourth, consumer cognition of product has a significant positive effect on purchase intentions and behaviors, assuming Hypothesis 10 is verified. Consumers' relationship cognition has a significant positive effect on their purchase intention and behavior. Hypothesis 11 is verified. And the emotional cognition established by consumers has a significant positive effect on their purchase intention and behavior. Hypothesis 12 is verified.

3.3 Conclusion of empirical research

Through empirical research, this study draws the following conclusions.

First, the performance of online anchors in online live shopping helps consumers to recognize products, establish the recognition and trust between anchors and consumers, create a good shopping atmosphere, and stimulate consumers' consumption desire. However, the consumer group level information transmitted via online live only significantly affects the establishment of consumer relationship cognition, and has no significant impact on consumers' product and consumption emotion cognition. The possible reasons for the above conclusions are summarized as follows. Network anchor and consumer group level information all help consumers reduce uncertainty in the consumption process. It also contributes to the establishment of a sense of identity and trust. The reason why the interaction of consumer groups does not help consumers build product cognition may be that during the process of watching the webcast, consumers are more inclined to receive information from product videos and anchors. Therefore, the information generated by the interaction between the consumer groups will only serve as a further supplement.

Second, the impact of product cognition, relationship cognition, and emotional cognition established by consumers in online live shopping experience on consumers' purchase intention and behavior is significantly positive. This also means that the more fully consumers know about products, trust the product and aware of their needs, the more likely they are to have consumption desires and behaviors.

4. CONCLUSION

Based on the SOR theoretical model, this study established a model of the impact of webcast information display on consumers' purchase behaviors. Through empirical analysis, the findings of this study are showed as follows. First, the information transmitted at the product level via webcast significantly and positively affects the establishment of consumer product, relationship and emotional cognition. Second, the information transmitted at the network anchor level also significantly and positively affects the establishment of consumers' cognition of products, relationships, and emotions. Third, the information at consumer group level transmitted through webcast only significantly and positively affects the establishment of relationship cognition, and the cognition at the product and emotion level is not significantly influenced. Forth, the impact of product, relationship, and emotional cognition established by online live shopping on consumers' purchase behavior is significantly positive.

In summary, by watching the webcast, consumers not only obtain product-related information, but also establish a connection with the anchor and consumer groups. This connection is embodied in the identification and trust of the anchor or the consumer group. The interaction of the consumer group through the webcast only helps to build relationship awareness. However, the live broadcast team should manage the interactive content during the live broadcast process, timely discover interactive statements that are not conducive to the establishment of positive relationships, and make a reasonable and appropriate response. Network anchors should undertake more tasks of delivering product-level information and stimulating consumer desire during the webcast. For product suppliers, the functionality and value of the product itself need to be more easily perceived by consumers.

ACKNOWLEDGMENTS

We acknowledge the financial support from the project of "2020 Chengdu Network Audio-Visual Industry Development Opportunity Report" (HW21018).

REFERENCE

- [1] Tang, X. J., Huang, C. X. and Wang, D., "“5G+”: A new start for the development of Chinese new media—the status quo and prospects of China's new media development from 2019 to 2020," *News and Writing*, 433(07), 43-49 (2020).
- [2] Zhu, Y. and Yin, W. H., "The dramaturgical marketing in online live shopping: Analysis based on Tik-Tok platform," *Journal of Shanghai University of International Business and Economics*, 28(02), 114-124 (2021).
- [3] Ma, Z. H., Ge, J. and Zhou, X., "Understanding antecedents of live video stream continuance use and users' subjective well-being via expectation confirmation model and parasocial relationships," *News and Communications Review*, 73(02), 29-46 (2020).
- [4] Lin, S. W. and Lo, Y. S., "Evoking online consumer impulse buying through virtual layout schemes," *Behaviour & Information Technology*, 35(1), 38-56 (2016).
- [5] Meng, L., Liu, F. J., Chen, S. Y. and Duan, S., "Can I evoke you? A study on the influence mechanism of information source characteristics of different types of live broadcasting celebrity on consumers' willingness to purchase," *Nankai Management Review*, 23(01), 131 -143 (2020).
- [6] Zhang, B. S., Zhang, Q. P. and Zhao, C. G., "The influence of webcast characteristics on consumers' purchase intention under e-commerce live broadcasting mode: The mediating role of consumer perception," *China Circulation Economy*, 35(06), 52-61 (2021).
- [7] Duper, B. and Liu, W. F., "Jealousy and equilibrium overconsumption," *American Economic Review*, 93(1), 423-428 (2003).
- [8] Wendner, R., "Will the consumption externalities' effects in the Ramsey model please stand up?" *Economics Letters*, 111(3), 210-212 (2011).

- [9] Choi, S., "The flipside of ubiquitous connectivity enabled by smartphone-based social networking service: Social presence and privacy concern," *Computers in Human Behavior*, 65, 325-333 (2016).
- [10] Kamins, M. A. and Marks, L. J., "The perception of kosher as a third party certification claim in advertising for familiar and unfamiliar brands," *Journal of the Academy of Marketing Science*, 19(3), 177-185 (1991).
- [11] Gatignon, H. and Robertson, T. S., "A propositional inventory for new diffusion research," *Journal of Consumer Research*, 11(4), 849-867 (1985).