



Research on the Influencing Factors of Consumers' Continuous Purchase Intention of Agricultural Products under E-commerce Live Streaming Mode

Yingzhen Wu¹, Ping Zhu¹, Qiancheng Ma^{2*}

¹Chengdu University of Information Technology, Chengdu, Sichuan, 610103 China

²Shanghai Business School, Shanghai, 201400 China

*1960548679@qq.com

Abstract. The purpose of this paper is to explore the influencing factors of consumers' sustained purchase intention of agricultural products under the e-commerce live streaming mode. Based on the SOR theory, a theoretical model was constructed, in which the features of agricultural products e-commerce live broadcasting were regarded as stimuli, consumer satisfaction and trust as organismic responses, and sustained purchase intention as behavioral responses. Data were collected by questionnaire method, and SPSS and AMO software were used for reliability test, validation factor analysis and model hypothesis test. The results show that factors such as product quality, price concessions, authenticity, visibility, entertainment, interactivity and public welfare affect consumers' satisfaction and trust and thus their continued purchase intention by influencing their satisfaction and trust. Accordingly, the countermeasures are proposed.

Keywords: Live E-commerce; Agricultural Products; Purchase Intention.

1 Introduction

Lagging sales of agricultural products are often a major problem for farmers, especially in remote areas. In 2020, while most industries were economically affected by the new Crown Pneumonia epidemic, online retail sales of agricultural products were in a state of growth, with an increase of 31% compared to the previous year, and more than 4 million live streams of agricultural products were broadcasted nationwide in the first quarter of that year, all of which are indicative of the huge potential of online live streaming of agricultural products. These data can show the huge potential of online live sales of agricultural products. However, as more and more farmers adopt live broadcasting to sell their products, related problems have emerged. For example, the homogenization of live content, product quality varies, live mode single, etc., these problems seriously affect the sales effect of agricultural products. In addition, in the public welfare to help farmers, village officials live and other activities under the auspices of a variety of activities, a lot of slow-selling agricultural products can be

quickly resolved, but this activity can attract customers for a long time? Or, after the government's help, how should farmers solve their own sales?

In summary, e-commerce live broadcast must enhance consumers' continuous purchase willingness, maintain the interaction and trust relationship with consumers, and turn one-time purchase consumers into continuous and loyal buyers in order to achieve the maximization of the economic benefits of live broadcast marketing and the durability of the development of live broadcast bandwagon. Based on the above background, the model affecting consumers' continuous purchase willingness is constructed and hypotheses are proposed, after which a reasonable questionnaire is designed, questionnaires are distributed to obtain real and reliable data, verify whether the hypotheses are valid, and draw research conclusions. Thus, it provides a reference for the development of e-commerce live platform.

2 Theoretical Foundation

According to the S-O-R model proposed by environmental psychologists Mehrabian and Russell, Stimulus refers to the external stimuli in the shopping environment that can influence consumers' cognitive awareness and emotions, Organism represents the cognitive awareness and emotional state formed by the individual receiving the external stimuli, and Response represents the behavioral response after the cognitive awareness and emotional state formed through the external stimuli^[1]. Song Zhijie et al. studied how new live broadcasting features (visibility, interactivity, and authenticity) affect consumers' purchase intention based on the SOR theory through consumers' perceived value and perceived trust^[2]; Dawei Liu et al. studied consumers' purchase intention of live broadcasting media based on the SOR (Stimulus-Organism-Response) model, and found that the influence of anchors and the brand awareness of products have a significant effect on purchase intention found that anchor influence and product brand awareness have a significant effect on purchase intention^[3]; Zhang et al. used social presence as a mediator to investigate the relationship between interactivity and consumer purchase intention^[4]; Yiqi Li empirically analyzed the relationship between external stimuli, psychological processes and consumer stationery purchasing behavior based on the SOR model using a multivariate ordered logistic regression model^[5]; Eroglu et al. further applied this theory to the study of online shopping, taking the environmental characteristics of shopping websites and their atmosphere as external stimuli, the user's internal emotional state (e.g., perceived pleasantness, arousal, etc.) as the organism, and the user's satisfaction and the related intimate or avoidance behaviors as the responses, and thus constructed an S-O-R theory of online shopping atmosphere research model^[6]. Therefore, this study concludes that the SOR theory is also applicable to the study of webcast shopping context.

3 Questionnaire Design and Distribution

In this paper, data were collected by questionnaire survey method. A screening question item is set in the questionnaire to distinguish between those who have used the client of the live e-commerce platform and those who have not used the client of the live e-commerce platform, and the respondents must be those who have had experience in purchasing agricultural products through live e-commerce. The structure of the questionnaire is divided into two parts: the first part is the investigation of the respondents' basic information and the use of live e-commerce; the second part, which is the most important part, is the investigation of the factors influencing the continuous purchase intention of the live e-commerce users, i.e., the investigation of the dependent variable. The questionnaires were designed on a 5-point Likert scale, with 1 to 5 indicating "completely disagree" to "completely agree". The designed questionnaires were sent to experts in the field of e-commerce for review. The initial questionnaire was modified according to the experts' comments. The initial questionnaire was sent to 50 respondents for pre-survey, and the final questionnaire was revised based on the results of the pre-survey.

This questionnaire survey distributed 600 questionnaires through the platform of Questionnaire.com, and 557 questionnaires were returned. After deleting the questionnaires that did not meet the conditions, 519 valid questionnaires remained, with a validity rate of 94%; among them, 44.1% of the respondents were male, and 55.9% were female; the age of the respondents basically ranged from 18 to 25 years old; most of the respondents' occupations were school students and ordinary staff, accounting for 37.8% and 29.5%; from the point of view of shopping experience, the online shopping experience of the respondents is basically more than 1 year, accounting for 94.8%, indicating that most of the respondents participating in this questionnaire survey have rich experience in online shopping.

4 Empirical Analysis

4.1 Reliability Test

In research, reliability tests are used to test the reliability of sample data, indicating the extent to which the scale can reliably measure the variables in the study. This paper focuses on reliability analysis as well as exploratory factor analysis to verify the reliability of the sample. The indexes of reliability analysis include Cronbach's α coefficient, whose value is between 0 and 1. Usually, 0.7 is used as the critical value to judge the reliability of the questionnaire, and when the value exceeds 0.7, the questionnaire is considered to have credibility, and the closer the value is to 1, the more reliable the data of the questionnaire is. In this paper, the Cronbach's α value of the questionnaire as a whole is 0.930 through SPSS24.0 analysis, which meets the requirements. The KMO value obtained through exploratory factor analysis is 0.876, which is greater than 0.5, indicating that the questionnaire is suitable for factor analysis. Subsequently, through exploratory factor analysis, 10 factors were extracted, and

the ratio of cumulative variance contribution reached 84.76%, and these data initially indicate that the questionnaire as a whole has good reliability. The reliability of the questionnaire is further verified by analyzing the Cronbach's α values of individual study variables below, and comparing the Cronbach's α values of individual measurement items for each variable with the Cronbach's α values after deletion of the item to confirm the reasonableness of the setting of each measurement item, and the reasonableness of the settings for each study variable (product quality, price concessions, visibility, interactivity, truthfulness, entertainment, Cronbach's α reliability coefficient values for each research variable (product quality, price concessions, visibility, interactivity, authenticity, entertainment, public interest, authority, satisfaction, consumer trust, and continuance of purchase intention) are all higher than 0.7, which further confirms the credibility of the questionnaire. Summarizing the above analyses, this paper concludes that the questionnaire has a good reliability.

4.2 Validation Factor Analysis

Before analyzing the validity of the questionnaire, it is first necessary to judge the fit between the questionnaire data and the validated factor analysis model, mainly through the chi-square degrees of freedom ratio, RMSEA value, GFI value, CFI value, TLI value and IFI value. Although different scholars have different views on the indicators for judging the degree of fit, most scholars agree that the above indicators can reliably judge the degree of fit of the model, and the specific results are shown in Table 1.

Table 1. Model Fitness Test.

Targets	Reference Standard	Results
CMIN/DF	1-3 as excellent, 3-5 as good	1.36
RMSEA	<0.05 as excellent, <0.08 as good	0.026
IFI	>0.9 as excellent, >0.8 as good	0.987
TLI	>0.9 as excellent, >0.8 as good	0.985
CFI	>0.9 as excellent, >0.8 as good	0.987

As shown in Table 2, all the fitting indexes meet the requirements, indicating that the fitting effect of the model is relatively satisfactory and further validity analysis can be carried out.

4.3 Model Hypothesis Tests

In the study, this research constructs a theoretical model based on the SOR theory by considering agricultural e-commerce live streaming features (authenticity, visibility, entertainment, interactivity, preferential, public interest, and authority) as stimuli (S), consumer satisfaction and consumer trust as organismic responses (O), and consumer

sustained purchasing intention as behavior (R). After the reliability and validity of the questionnaire were tested, this study used AMOS24 to conduct a structural equation modeling test on the model to determine whether the research hypotheses proposed in the previous section were valid. Before the path analysis of the model, the fit of the questionnaire data to the model was first examined, following the indicators and their judgment criteria used in the validated factor analysis. The fit indicators of the model obtained through the analysis are: chi-square degrees of freedom ratio = 1.93, TLI = 0.991, RMSEA = 0.022, IFI = 0.992, GFI = 0.935, CFI = 0.992, which are all within the range of the recommended values, so the model's fitting effect is good and further path analysis can be carried out.

Table 2. Results Of Research Hypothesis Tests.

Path Analysis	Estimate	S.E.	C.R.	P	Hypothetical Results
SAT<---PRD	0.319	0.044	6.022	***	Correct
SAT<---PRE	0.146	0.043	2.541	0.019	Correct
SAT<---VIS	0.129	0.042	2.294	0.034	Correct
SAT<---INT	0.038	0.047	1.363	0.071	Error
SAT<---AUT	0.13	0.041	2.316	0.012	Correct
SAT<---ENT	0.099	0.048	2.206	0.037	Correct
SAT<---PUB	0.135	0.047	2.408	0.022	Correct
SAT<---GOV	0.119	0.047	2.267	0.019	Correct
TRU<---PRD	0.212	0.043	4.985	***	Correct
TRU<---PRE	0.127	0.042	3.317	***	Correct
TRU<---VIS	0.119	0.046	2.707	0.041	Correct
TRU<---INT	0.171	0.048	2.683	0.045	Correct
TRU<---AUT	0.254	0.044	3.568	***	Correct
TRU<---ENT	0.118	0.049	2.486	0.027	Correct
TRU<---PUB	0.105	0.051	2.637	0.038	Correct
TRU<---GOV	0.017	0.047	0.241	0.81	Error
REP<---SAT	0.136	0.046	3.773	***	Correct
REP<---TRU	0.115	0.044	3.326	***	Correct

Combining the results of the above empirical analysis, it can be seen that two of the 18 research hypotheses proposed in the model building section of this study are

not valid, while the rest of the hypotheses are valid, and the test results are summarized in Table 2.

5 Conclusions and Recommendations

5.1 Conclusions

In this paper, we mainly start from the 2 perspectives of product characteristics (product quality, price concessions) and live broadcasting characteristics (visibility, interactivity, authenticity, entertainment, public welfare, authority) to explore the factors influencing the satisfaction, consumer trust and consumer's continued purchase intention of agricultural products under the e-commerce live broadcasting mode. Based on the results of the previous empirical analysis and hypothesis testing, the following conclusions can be drawn:

(1) In terms of consumer satisfaction, product quality, price concessions, authenticity, visibility, entertainment, interactivity, and public interest can influence consumers' willingness to continue purchasing by affecting consumer satisfaction.

(2) In terms of consumer trust, authenticity, visibility, entertainment, interactivity, public welfare, and authority can influence consumers' willingness to continue purchasing by influencing consumer trust.

Overall, the enhancement of agricultural product features and live broadcasting features can enhance consumers' willingness to continue purchasing and increase the rate of continued purchasing.

5.2 Recommendations

Since e-commerce live streaming showed a blowout development trend in 2019, the industry has seen an increasing number of new entrants, making the market increasingly competitive. For merchant anchors, whether they can increase consumers' sustained purchase intention and cultivate customer loyalty is the key to determining whether they can achieve a competitive advantage in the fierce market competition and obtain long-term development. Based on the results of this paper's empirical analysis and hypothesis testing, this study proposes five suggestions for merchants on how to increase consumers' continued purchase intention and cultivate customer loyalty as shown below.

(1) Pay attention to the real display of products, so that the display of products and consumers actually receive the same product, so also to do a good job of product quality control, especially the existence of products that are easy to decay, difficult to standardize and other issues, the need for businessmen to pay attention to the quality of management, do not just to attract new customers and false propaganda, blindly exaggerated product quality.

(2) Pay attention to the presentation effect of the live broadcast and enhance the interest of the content. Agricultural products e-commerce live visual, entertainment enhancement can improve the consumer's willingness to continue to buy, so merchants should pay attention to the visual presentation of the live interface, optimize

the degree of beauty of the product display and the degree of fun, in addition to the introduction of the product, but also through the display of the beautiful local scenery, as well as agricultural products planting, picking of interesting scenes, etc. to further enrich the content of the live broadcast, and also learn to shoot and composition skills to beautify the live broadcast interface. In addition, you can also learn the shooting and composition skills to beautify the presentation effect of the live interface.

(3) Maintain interaction with consumers throughout the live sales process. Interactivity is a major advantage of e-commerce live shopping over traditional online shopping, good interaction can enhance consumer trust and optimize their shopping experience, which has a positive effect on enhancing consumers' willingness to continue to buy. Therefore, merchants should pay attention to the anchor in the live broadcast process to maintain positive interaction with consumers, timely answer the duties of consumer doubts, to create a positive atmosphere of live shopping environment.

(4) Actively participate in public welfare activities organized by the local government to help farmers. Empirical evidence shows that public welfare and authority have a certain positive impact on consumers' willingness to repurchase. Although long-term reliance on the government is impractical and unattainable practice, but in the short term through the public welfare live can indeed bring farmers traffic, and in this case can also have a positive impact on the consumer's re-purchase behavior. Therefore, it is important to emphasize the initial sales under the public welfare activities to help farmers, and bring consumers a better post-purchase experience.

(5) Develop their own characteristics and cultivate their own anchors. For some farmers with small production scale, the short-term help of the government and other platforms to help farmers through live broadcasting can realize rapid attraction and sales of products. But in the long run, after the first time to obtain the flow should pay attention to refining their own characteristics and targeted publicity, actively cultivate professional, high-quality anchor, put an end to monolithic, vulgar live content, and to pay attention to the differentiation of the live content, can not blindly follow the trend of imitating other live room.

References

1. Mehrabian A, Russell J A, An Approach to Environmental Psychology [M], Cambridge: MIT Press, 1974,
2. Zhijie S, Chang L , Rui S. How Do Fresh Live Broadcast Impact Consumers' Purchase Intention? Based on the SOR Theory[J]. Sustainability, 2022,14(21): 14382-14382.
3. Dawei Liu, Jinyang Yu. Impact of perceived diagnosticity on live streams and consumer purchase intention: streamer type, product type, and brand awareness as moderators[J]. Information technology & management, 2022, 11-14.
4. Lei Zhang, Xiaoli Liu. Interactivity and live-streaming commerce purchase intention: Social presence as a mediator[J]. Social Behavior and Personality, 2023, 51(2).
5. Li Y. A Study on the Influence of External Stimuli and Psychological Processes on Stationery Purchase Behavior Based on SOR[J]. Proceedings of Business and Economic Studies, 2022, 5(4): 79-87.
6. Eroglu S A, Machleit K A, Davis L M. Empirical Testing of A Model of online Store Atmospherics and Shopper Responses [J]. Psychology & Marketing, 2003, 20 (2): 139-150.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

