

Summer 7-26-2022

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Recommended Citation

Yang, Jinglei; Zheng, Xinyuan; and Huang, Linjun, "Research on the Influence Mechanism of Consumers' Impulsive Buying under the Scenario of Public Welfare Live Streaming" (2022). *WHICEB 2022 Proceedings*. 52.

<https://aisel.aisnet.org/whiceb2022/52>

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Short Research Paper

Research on the Influence Mechanism of Consumers' Impulsive Buying under the Scenario of Public Welfare Live Streaming

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Abstract: As the most popular online shopping method at present, live streaming shopping has achieved remarkable results. Live streaming shopping has also been widely concerned and studied. However, few scholars have conducted empirical research on how to promote product sales in the context of public welfare live streaming. Based on the S-O-R theory, we analyze the impact mechanism of consumers' impulse buying under the scenario of public welfare live streaming through questionnaires, aiming to provide marketing strategy suggestions for solving the problem of live streaming, product promotion. The results show promotion efforts and moral elevation positively affect consumers' perceived value and impulsive buying intention, and the mediating effect of perceived value is significant. We enrich the research elements of impulse buying from live streaming commerce, promotes the integration of marketing disciplines and social sciences, and provide marketing strategy for solving the problem of products, which has certain theoretical and practical value.

Keywords: public welfare live streaming, promotion efforts, moral elevation

1. INTRODUCTION

With the continuous emergence of new forms of presentation in social media, mobile Internet culture has begun to enter the stage of visual communication. As of December 2020, the number of netizens in China was 989 million, and the scale of China's live streaming e-commerce market reached 1.2 trillion yuan, with an annual growth of 197%, China has become the world's largest online retail market. Under the background of the new crown epidemic in recent years, "live streaming, to help farmers" has achieved remarkable results. CCTV launched the "Thank you for making orders for Hubei" live streaming to help farmers sell more than 100 million yuan of agricultural products in just four hours. Farming live streaming, is a typical event of public welfare live streaming, promotion, and it has gradually become a win-win strategy that can obtain economic and social effects.

In marketing practice, public welfare events and promotions are commonly used marketing methods by businesses. When consumers watch public welfare live streaming, on the one hand, they may be stimulated by product promotions and make impulsive buying, and on the other hand, they may have emotional reactions to make impulsive buying. Existing studies have explored the impact of promotion efforts on impulse buying, mainly focusing on the effect of price discounts on people's willingness to participate in charity promotions^[1], and there is a lack of intermediate mechanism research on the impact of public welfare live streaming, on consumers from an emotional level. What are the changes in consumer sentiment and behavior under the public welfare live streaming? By studying this issue, we can put forward more effective marketing suggestions and promote the better development of public welfare live streaming.

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2. LITERATURE REVIEW

2.1 Public welfare live streaming

Live streaming has a very positive effect on promoting product sales. However, few scholars directly study product promotion in the context of public welfare live streaming. Following e-commerce platforms such as Taobao, JD.com, and Pinduoduo to help promote products, live streaming, has become an effective way to promote product sales. The interactivity, professionalism and credibility of the live streaming of online celebrities with goods can significantly arouse consumers' willingness to buy^[2]. The empirical results show that live atmosphere cues have a significant impact on consumers' impulse buying willingness. In the context of online celebrity live streaming, source credibility, hedonic attitude and self-product adaptability can significantly increase consumers' willingness to buy^[3]. By enhancing live streaming traffic, entertainment, social interaction and recognition, consumers' willingness to actively use live streaming, can be stimulated to help product sales^[4].

The research on public welfare live streaming mainly focused on the discussion of its characteristics and strategies, and mainly focused on case and qualitative studies. Through a case study of "Little Zhu Peiqi", some scholars have found that mainstream media live streaming has achieved the transition from public welfare communication to constructive communication through role reconstruction and innovative collaboration^[5]. At the same time, some scholars have proposed that public welfare live streaming needs to take into account platform traffic, product quality, and social benefits^[6]. For the analysis of the communication effect, the existing research results are all from the perspective of the main body of communication. For example, a case study from the perspective of 5W in communication studies, taking "Thank you for making orders for Hubei" as the object of investigation, and analyzing from the perspective of semiotics, it is believed that paying for the commodities in Hubei is more about paying for the symbolic meaning attached to the commodities^[7].

To sum up, there are few studies on the communication effect of mainstream media public welfare live streaming, and it is mostly based on qualitative research and empirical research to measure the communication effect from the perspective of platform communication, and no effective evaluation system has been established. There is a lack of research on the communication effects of receiving information from the perspective of consumers, changing attitudes, and finally forming behaviors. Therefore, we will use quantitative methods to comprehensively analyze the communication effect of public welfare live streaming and the real emotional attitude of consumers, explore the factors that affect the communication effect, and promote the further improvement of the public welfare live streaming.

2.2 Impulsive buying

Impulsive buying means sudden, irresistible, hedonic complex buying behavior, which belongs to unplanned purchases^[8]. Online impulse buying mainly arises from the spontaneous behavior of consumers due to lack of control when they are exposed to online stimuli^[9]. The process of impulsive buying behavior is characterized by the sudden and urgent buying desire or impulse felt by consumers when interacting with the website, and finally induced to produce online buying behavior^[10]. During special promotional activities (such as the Double Eleven Shopping Festival), the hot sales performance is largely caused by impulse buying^[11]. Regarding the research on the influencing factors of impulsive buying, most scholars have confirmed that social interaction is the stimulating factor that stimulates consumers to buy impulsively^[12]. The strong sense of social presence created by online live streaming marketing has a positive impact on consumers' impulse buying intention^[13].

3. HYPOTHESES

3.1 Promotion efforts

Promotion is an important marketing tool that affects consumers' shopping decisions. Large-scale promotions often lead to consumers' quick decisions and impulse buying. One of the main features of live e-commerce is that the host will give consumers a certain discount when recommending or selling products for promotion. The greater the promotion, the greater the benefits consumers can obtain. Higher potential benefits can make consumers feel more positive emotions and promote consumers' perception of product value^[14]. A positive psychological experience will effectively promote consumers' impulse buying. We put forward following hypotheses:

H1 Promotional efforts positively affects consumers' perceived value

H2 Promotional efforts positively affects consumers' impulse buying intention

3.2 Moral elevation

Adding charitable marketing messages will lead to more favorable consumer responses when businesses are advertising^[15]. The moral behavior of others will stimulate the individual to have a sense of moral elevation. Moral elevation refers to the feeling that one's own morality has been improved when he sees the moral behavior of others, and a feeling of warmth, moving, and heat in the chest is generated in the heart^[16], which further stimulates the individual to produce pro-social behaviors such as donation and participation in volunteer activities^[17]. People who have watched videos of others' moral behavior have a greater desire to have a more intimate connection with the good-doers, which makes them willing to actively participate in it and engage in pro-social behavior. Moral elevation plays an important role in consumer attitudes and pro-social behaviors^[18]. This paper argues that consumers' impulsive buying behaviors during public welfare live streaming are pro-social behaviors. We put forward following hypotheses:

H3 Moral elevation positively affects consumers' perceived value

H4 Moral elevation positively affects consumers' impulse buying intention

3.3 Perceived value

For consumers, perceived value is their own subjective view of a product. According to the S-O-R theory, external stimuli will act on consumers' final purchase behavior by triggering consumers' internal body responses. This article believes that in public welfare live streaming, preferential promotions cater to consumers' pursuit of low prices and are conducive to attracting passenger flow. As a positive moral emotion, the sense of moral elevation will prompt consumers to make decisions by influencing their views on products. We put forward following hypotheses:

H5 Perceived value positively affects consumers' impulse buying intention

H6 Perceived value mediates the relationship between moral elevation and impulsive buying intention

H7 Perceived value mediates the relationship between promotion efforts and impulsive buying intention

4. STUDY DESIGN

4.1 Questionnaire design and variable measurements

The questionnaire designed consists of two parts: the first part is the basic information of respondents participating in the public welfare live streaming, the second part includes some relevant items about promotion efforts, moral elevation, perceived value, and impulse buying under the public welfare live streaming scenario. The scale refers to the previous relevant literature and use the Likert 7-level scale, from 1 to 7, representing "completely disagree" to "completely agree". After the questionnaire was evaluated and revised according to the opinions of experts, and the initial questionnaire was formed.

The questionnaire survey first conducts pre-investigation on 30 respondents, analyzes and revises the

pre-investigation results. The formal survey adopted the scenario experiment method, convened 176 college students to participate in the questionnaire survey, and showed the public welfare live broadcast scene (the introduction of a certain unsalable agricultural product, if it is sold, it can relieve the living pressure of the residents and promote the regional economic development). After watching the scene, they answered some questions, and after excluding consumers who had no experience of live shopping and incomplete questionnaires, 142 valid questionnaires were finally recovered, with an effective rate of 80.68%. Some analyses details can be realized from Table 1.

Table 1. Confirmatory factor analysis and reliability analysis results of variables

| Variable | Measurement | S.t | CR | AVE | CA |
|---------------------|--|-------|-------|-------|-------|
| Moral elevation | M E1 I am very moved by the public welfare this product is involved in | 0.853 | 0.871 | 0.693 | 0.779 |
| | M E2 I am inspired by the good cause this product is involved in | 0.876 | | | |
| | M E3 The good cause this product is involved in makes me believe that the world is beautiful and full of kindness and generosity | 0.901 | | | |
| | M E4 This charitable cause this product is involved in makes me want to be a person of high moral character | 0.861 | | | |
| | M E5 The public welfare this product is involved in makes me want to help him/her more | 0.899 | | | |
| Promotional efforts | PE1 The product promotion of public welfare live streaming, is relatively strong | 0.830 | 0.943 | 0.846 | 0.909 |
| | PE2 The price of the products of public welfare live streaming, is relatively low. | 0.900 | | | |
| | PE3 Small gifts are often given when purchasing products of public welfare live streaming. | 0.761 | | | |
| Perceived value | PV1 I think the price paid for this promotion is worth it | 0.900 | 0.923 | 0.800 | 0.875 |
| | PV2 I think the promotional product is of good quality | 0.876 | | | |
| | PV3 I think it is wise to buy the promotional product | 0.906 | | | |
| Impulse buying | IB1 I want to own this product now | 0.900 | 0.944 | 0.771 | 0.926 |
| | IB2 I have a strong desire to buy | 0.947 | | | |
| | IB3 I didn't plan to buy it before, but now I see the product information and want to buy it | 0.912 | | | |

5. DATA ANALYSIS

5.1 Reliability and validity test

The reliability of the questionnaire is firstly analyzed by spss23.0. The results show that the Cronbach's α values of moral elevation, promotion efforts, perceived value and impulse buying intention are all greater than 0.7, indicating that the reliability of the scale is good. The overall KMO value is 0.836, which is greater than 0.7, and the Bartlett's sphericity test Sig. value is 0.000, which is less than 0.001. The two test results show that the correlation between variables is strong, which is suitable for factor analysis.

Table 2. Reliability and validity test

| Variable | Cronbach's α | KMO | Bartlett's sphericity test Sig. value |
|----------|---------------------|-------|---------------------------------------|
| ME | 0.874 | 0.836 | 0.000 |
| PE | 0.878 | | |
| PV | 0.850 | | |
| IB | 0.885 | | |

5.2 Multicollinearity test

The variable inflation factor (VIF) was used to measure the multicollinearity among the model variables, and the results are shown in the Table 3. It can be seen from Table 3. that the VIF value of each variable is less than the critical value of 5, indicating that the collinearity problem between the model variables is not serious. It can be seen that the collinearity problem will not cause adverse effects on the estimation of the path coefficients of the model structure.

Table 3. Multicollinearity test results of structural model

| variable | PE | IB |
|----------|-------|-------|
| PE | 2.640 | 2.069 |
| PV | 2.727 | |
| ME | 2.506 | 2.069 |

5.3 Model goodness of fit analysis

Through the coefficient of determination of endogenous latent variables, the contribution degree of each latent variable and the degree of model interpretation are analyzed. According to the analysis standard in general research, when the coefficient of determination of endogenous latent variables (variance explanation R^2) is greater than or equal to 0.67, the model fitting degree is good; when it is at 0.67 to 0.33, the model fitting degree is moderate; When it is less than or equal to 0.19, the model fit is poor. Using SmartPLS 2.0 software as a data analysis tool, the quality criterion of the inner life of the model is as follows, and its variance interpretation is in the range of 0.67 to 0.33, and it is close to 0.67, which proves that the model is well explained, and the fit high degree.

Table 4. Model goodness of fit analysis

| variable | R^2 | Adjusted R^2 |
|----------|-------|----------------|
| PV | 0.633 | 0.628 |
| IB | 0.596 | 0.588 |

5.4 Hypothesis Testing

In this paper, SmartPLS2.0 is used to test the significance and path coefficient of the direct causal relationship between variables. The data analysis results of the structural equation model are shown in the Table 5. It can be seen from Table 5. that moral elevation ($\beta=0.726$, $p<0.001$) and the promotion efforts ($\beta=0.738$, $p<0.001$) both have a significant positive effect on perceived value, assuming that both H1 and H3 are established. Both moral elevation ($\beta=0.661$, $p<0.001$) and promotion efforts ($\beta=0.629$, $p<0.001$) have significant positive effects on impulse buying intention, assuming that H2 and H4 are both valid. Perceived value has a significant positive effect on impulsive buying behavior ($\beta=0.836$, $p<0.001$), assuming H5 holds. Since the path coefficients of moral elevation and promotion efforts on perceived value are 0.749 and 0.810 respectively, it indicates that the influence of the two on perceived value is greater than that of moral elevation. The path coefficients of moral elevation and promotion efforts on impulse buying intention are respectively 0.765 and 0.773, indicating that the influence of the two on impulse buying intention is greater than that of moral elevation.

Table 5. Test results of direct relationship between variables

| path | Estimate | Std.Estimate | R^2 | T | P | Conclusion |
|---------|----------|--------------|-------|--------|-------|----------------|
| ME→ PV | 0.749 | 0.726 | 0.524 | 12.921 | 0.000 | H1 established |
| ME → IB | 0.765 | 0.661 | 0.434 | 10.798 | 0.000 | H2 established |
| PE → PV | 0.810 | 0.738 | 0.542 | 13.408 | 0.000 | H3 established |
| PE→ IB | 0.773 | 0.629 | 0.392 | 9.911 | 0.000 | H4 established |
| PV →IB | 0.836 | 0.746 | 0.554 | 13.733 | 0.000 | H5 established |

Bootstrap is used to test the mediating path between moral elevation and promotion efforts and impulse buying intention, and the results are shown in Table 6. It can be seen from the table that both moral elevation and the promotion efforts can affect the impulsive buying intention through perceived value. It is assumed that both H6 and H7 are established, and the two variables of moral elevation and promotion efforts have an indirect influence on the impulse buying intention of consumers, which were 0.473 and 0.562 respectively. It can be seen that the indirect influence of moral elevation and the promotion efforts on consumers' impulse buying intention is that the promotion efforts is greater than moral elevation.

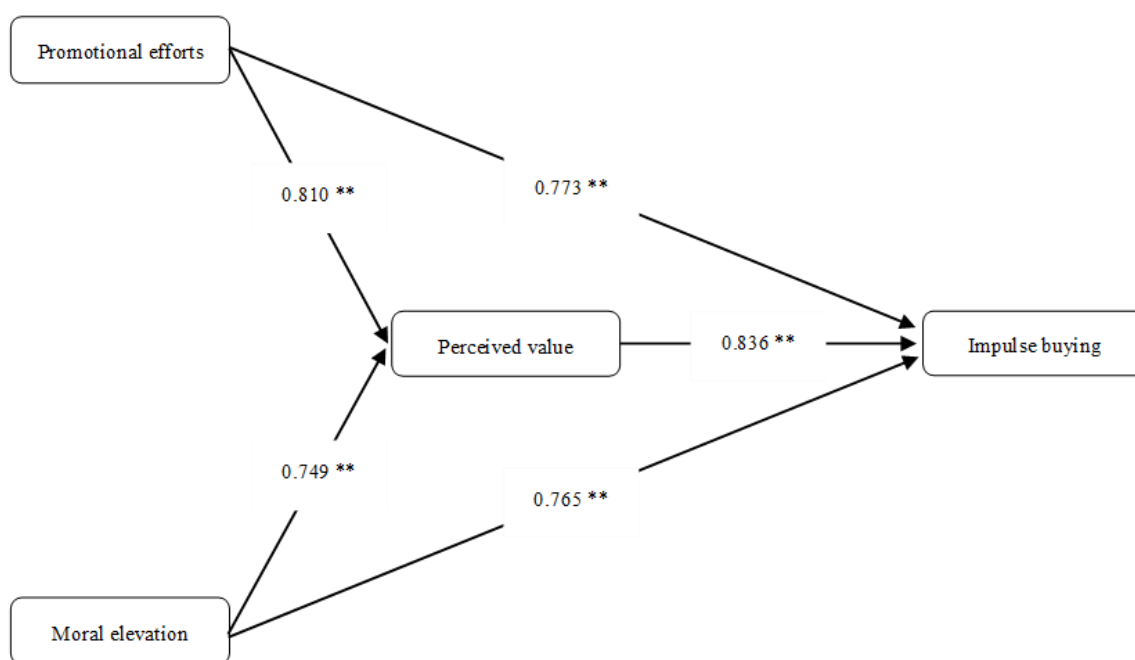


Figure 1. Research Model

Note: ** and * represent $p < 0.01$ and $P < 0.05$, respectively; dashed arrows indicate that the path does not hold.

Table 6. Bootstrap analysis results for the significance test of the mediation effect

| mediation path | Effect size | SE | Bootstrap 95% CI Mediation test | |
|----------------|-------------|-------|---------------------------------|-------|
| | | | Lower | Upper |
| ME → PV → IB | 0.473 | 0.090 | 0.310 | 0.655 |
| PE → PV → IB | 0.562 | 0.097 | 0.365 | 0.749 |

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Research conclusion

We construct a theoretical model of promotion efforts and moral elevation on impulse buying. The research results show that: in the context of public welfare live streaming, consumers' impulsive buying intention is affected by promotion efforts and moral elevation, and perceived value is directly related to promotion efforts and morality. There is a mediating effect between promotion efforts and impulse buying intention, and the effect of promotion efforts on perceived value and impulsive buying intention is more significant.

6.2 Implications to Management and practice

Previous studies have mainly focused on the impact of price discount factors on consumers' purchase intentions under promotions. We combine the effects of consumers' reactions (promotional efforts, moral elevation) in public welfare live streaming scenarios on perceived value to conduct a more comprehensive discussion, and expand research scope of live streaming marketing and provides a new perspective for public

welfare live streaming promotion.

6.3 Research limitations and future research

We select the typical live streaming, consumer group college students as the research object, but there are many types of consumer groups in real life, and other types of consumer groups can be considered in the future. This paper uses the scale to measure consumers' impulse buying intention without measuring the actual impulse buying behavior. In the future, on-site laboratory experiments can be set up to simulate real live shopping scenarios to record the actual impulse buying behavior of the subjects. Finally, we conduct research in the context of public welfare live streaming, but does not explore boundary conditions. In the future, we can continue to explore the boundary conditions that affect consumers' impulse buying in the context of public welfare live streaming.

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