

EFFECT OF KNOWLEDGE-BASED LIVE STREAMERS' FEATURES ON UNDERGRADUATE'S PURCHASE INTENTION IN PRIVATE UNIVERSITIES OF JINAN, CHINA*

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Abstract

The research objectives are to (1) explore the impact of features of knowledge-based live streamers on undergraduate's flow experience in the context of live streaming; (2) explore the impact of knowledge-based live streamers' features on undergraduate's purchase intention; (3) explore the impact of flow experience on undergraduate's purchase intention; (4) explore the mediating role of flow experience between the features of knowledge-based live streamers and undergraduate's purchase intention. To achieve these objectives, quantitative research was adopted in this research. A total of 425 students from five private universities of Jinan, China, participated in the survey by stratified sampling. Data was analyzed using a Structural Equation Modeling (SEM) approach to test the research hypotheses.

The research findings showed that (1) the features of knowledge-based live streamers had significant influence on undergraduate's flow experience; (2) the features of knowledge-based live streamers had significant influence on undergraduate's purchase intention; (3) the flow experience had significant impact on undergraduate's purchase intention; (4) the flow experience played a mediating role in the influence of knowledge-based e-commerce live streamers on undergraduate's purchase intention. Overall, this study not only enriches the theoretical understanding of consumer psychological mechanism in the e-commerce live streaming but also offers empirical evidence for the e-commerce live streaming industry to better meet consumer psychological needs, promoting

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sustainable development of the e-commerce live streaming industry in Jinan and beyond.

Keywords: Knowledge-based Live Streamer, Flow Experience, Purchase Intention

Introduction

In recent years, knowledge-based live streamers have gradually become a new trend in the integration of global e-commerce and content ecology. The sales of knowledge-based live streamers in China exhibits a high growth feature. To explore the psychological mechanism underlying the formation of customers' purchase intentions, in order to explain the high growth of knowledge-based live streamers' sales and to provide suggestions for continuous growth for e-commerce live-streaming enterprises become crucial.

Knowledge-based live streamers not only enjoy high popularity and attention on the Internet but also can spread knowledge and sell goods through live streaming, so that the audience can get pleasure and rich knowledge while shopping. The attractiveness of live streamers can change the internal state of consumers, arouse consumers' sense of excitement, and thus affect consumers' online purchase intention. Studies examined the impact of live streaming features and streamers' characteristics on consumers' purchase intentions, revealing that the attractiveness of live streamers significantly enhances consumer's inclination to make purchases (Pang et al., 2021; Ma, 2023). Professionalism is also one of the important features of knowledge-based live streamers. Empirical studies have shown that the professionalism of live streamers has a positive impact on consumers' purchase intention and perceptions during knowledge-based live streaming marketing (Cheng, 2023; Zhang & Chen, 2024). Throughout the process of product promotion via live streaming, the interactivity displayed by live streamers exhibit a substantial positive impact on consumer perceptions (Zhang & Chen, 2024). Entertainment refers to the level of gratification experienced by consumers during the process of live streaming, aimed at satisfying their psychological need for pleasure. Viewers typically utilize live streaming as a means to alleviate stress and engage in consumption primarily for relaxation and stress relief purposes (Wang et al., 2020).

The concept of flow experience refers to a state of pleasure where an individual becomes completely absorbed in an activity, demonstrating intense concentration, vitality, and attentiveness (Csikszentmihalyi, 1975). Based on a previous study conducted in 1996 by Hoffman and Novak, an online flow experience refers to the state that occurs when individuals observe live streaming of e-commerce. This experience is characterized by a seamless sequence of reactions. The flow experience encompasses nine general aspects, including the balance between skills and challenges, clear goals, integration of immediate feedback actions, awareness, focus, sense of control, diminished self-awareness, altered perception of time passage, and a sense of purpose.

Objectives

1. To explore the impact of features of knowledge-based live streamers on undergraduate's flow experience in the context of e-commerce live streaming.
2. To explore the impact of features of knowledge-based live streamers on undergraduate's purchase intention.
3. To explore the impact of flow experience on undergraduate's purchase intention.
4. To explore the mediating role of flow experience between the features of knowledge-based live streamers and undergraduate's purchase intention.

Literature Review

SOR theory: Mehrabian and Russell developed the stimulus-organism-response theoretical model, which proved highly suitable for investigating the influence of diverse environmental factors on human behavior (Mehrabian & Russell, 1974). This model has gained widespread adoption in marketing research. Based on the SOR model, characteristics of opinion leaders, and flow theory, Wang et al. (2022) developed a framework for understanding consumers' intention to purchase in the context of e-commerce live streaming. Zhang and Chen (2024) employed the SOR model as a research framework, wherein the characteristics of live streamers (i.e., their popularity, personal image, professionalism, interactivity, and empathy) were considered as the stimulus (S), while consumer cognition and emotions served as the organism (O), and consumer purchase intention represented the response (R).

Flow theory, originating from the field of psychology, has been utilized to understand the underlying factors influencing experiences across diverse domains. The seminal work by Csikszentmihalyi, who developed this theoretical framework, sought to explore why individuals who did not prioritize material rewards engaged in activities purely for their intrinsic value, thereby enhancing the significance of daily life through autotelic behavior. Researchers are currently engaged in extensive research on the utilization of flow theory in live streaming. According to Scheibe et al. (2016), simplistic website designs could effectively enhance the experience of flow among teenagers while they watched live streaming content. Li et al. (2018) investigated the gift-giving behavior of viewers in live streaming media, considering flow experience as a mediating variable. Furthermore, Li and Peng (2021) discovered a correlation between viewers' emotional attachment to the host and their flow experience. Individual live streamers have a greater impact on users' flow experience in e-commerce live streaming. The specialization, interactivity, attraction and popularity of live streamers would reduce the energy paid by users in purchasing products, enhance users' trust in live streamers, attract users to form positive emotions, and thus generate flow experience (Wei et al., 2022).

Based on previous research on live streamers' features, flow experience and purchase intention, the conceptual framework of this article is shown in Figure 1.

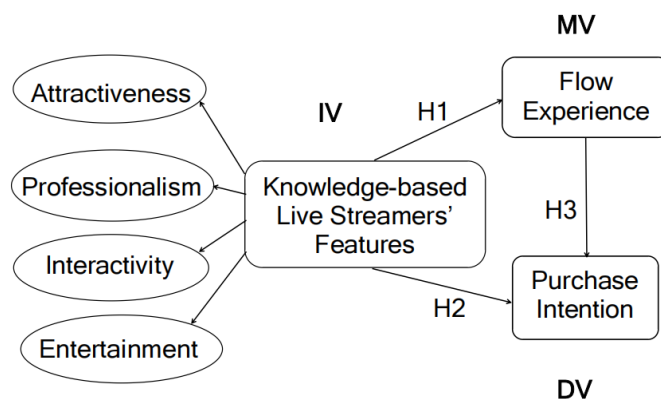


Figure 1 Conceptual Framework

Methodology

This research employs a quantitative approach, focusing on gathering data regarding the characteristics of knowledge-based live streamers (such as appeal, expertise, engagement, and entertainment value), flow experience, and the purchasing intentions of undergraduate students via surveys.

First, the design of the questionnaire is based on a mature scale in the existing literature. The scale covers the measurement indicators of major variables such as attractiveness, professionalism, interactivity, entertainment, flow experience and purchase intention. The questionnaire will be randomly distributed to five private universities (with 132511 college students) in Jinan. Considering both Jinan's flourishing e-commerce industry and its substantial number of college students residing made selecting this demographic for research purposes representative and justifiable. The sample sizes were determined using Yamane's simplified formula (Yamane, 1967), assuming a confidence level of 95% and $P = .05$ and the result was 399. The questionnaires were shared via WeChat, which is the most widely used social media platform in China. A stratified sampling method was used to distribute questionnaires online and a total of 462 questionnaires were collected, 425 effective questionnaires were obtained, with an effective collection rate of 91.9%.

In order to evaluate the reliability of the data, this study uses Cronbach Alpha coefficient to measure the internal consistency of each variable. In terms of data validity, this study uses confirmatory factor analysis (CFA) to evaluate the convergent validity, discriminant validity and model fit of the data. This study will measure it through average variance extracted (AVE) and composite reliability (CR). If both convergent validity and discriminant validity meet the standards, it means that the data has good validity. In addition, fit indicators such as the chi-square degree of freedom ratio (CMIN/DF), standardized fit index (CFI) and root mean square error approximation (RMSEA) will also be used to evaluate the overall fit of the model to ensure the rationality and scientificity of the model. Next, this study uses Amos software in the structural equation model (SEM) to perform path analysis to verify the relationship between the hypotheses. Finally, in order to further test the mediating effect of flow experience as a mediating variable, this study uses the Process method proposed by Hayes to analyze the mediating effect. Through the

Bootstrap sampling method, this study will estimate the significance of the mediating effect and evaluate the strength and direction of the mediating effect, so as to fully verify the mediating role of flow experience.

Results

Table 2 Research hypothesis path test

| Hypotheses | Path | | | Std. | S.E. | C. R. | P | Result |
|------------|------|------|------|------|------|-------|-----|----------|
| H1a | FE. | <--- | ATT. | .190 | .056 | 3.361 | *** | Accepted |
| H1b | FE. | <--- | PR. | .227 | .076 | 3.009 | ** | Accepted |
| H1c | FE. | <--- | INT. | .251 | .077 | 3.248 | ** | Accepted |
| H1d | FE. | <--- | EN. | .283 | .068 | 4.132 | *** | Accepted |
| H2a | PI. | <--- | ATT. | .181 | .053 | 3.437 | *** | Accepted |
| H2b | PI. | <--- | PR. | .200 | .070 | 2.870 | ** | Accepted |
| H2c | PI. | <--- | INT. | .276 | .073 | 3.786 | *** | Accepted |
| H2d | PI. | <--- | EN. | .190 | .064 | 2.983 | ** | Accepted |
| H3 | PI. | <--- | FE. | .174 | .060 | 2.873 | ** | Accepted |

Table 2 shows the path analysis results of the four hypotheses set in this study, including the standardized and unstandardized coefficients, standard errors, critical ratios, and P values of the paths. The results show that all hypotheses are accepted, indicating that the impact of each path is significant.

1. Effects of Stimulus Factors on Flow Experience (H1a–H1d)

All four stimulus factors—Attractiveness (ATT), Professionalism (PR), Interactivity (IN), and Entertainment (EN)—have significant positive effects on Flow Experience (FE) (standardized β ranging from 0.190 to 0.283; $p < 0.01$ to $p < 0.001$). Thus, H1a through H1d are all supported.

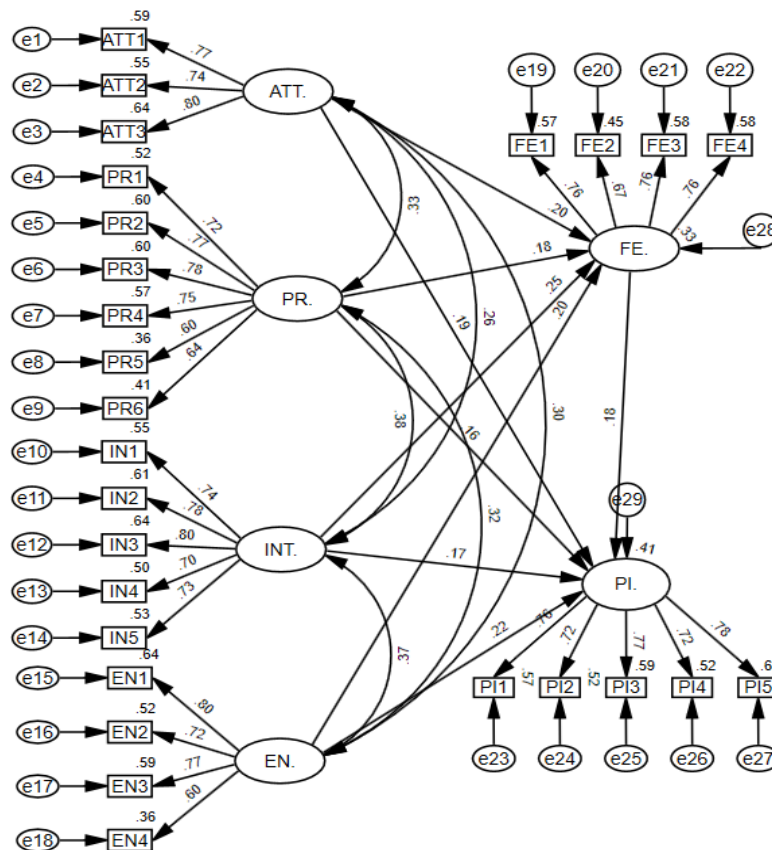
2. Effects of Stimulus Factors on Purchase Intention (H2a–H2d)

Each of the four stimuli Attractiveness (ATT), Professionalism (PR), Interactivity (IN), Entertainment (EN) also exerts a significant positive influence on Purchase Intention (PI) (standardized β ranging from 0.181 to 0.276; $p < 0.01$ to $p < 0.001$). Consequently, H2a through H2d are all supported.

3. Impact of Flow Experience on Purchase Intention (H3)

Flow Experience itself positively and significantly predicts Purchase Intention (PI) ($\beta = 0.174$, $p < 0.01$), confirming hypothesis H3.

Overall, every hypothesized path in this model was statistically significant and in the expected positive direction, indicating that both direct stimulus effects and the mediating role of flow experience contribute meaningfully to consumers' purchase intentions. The path model diagram is shown in Figure 2.



Discussion

Research objective 1 This study found that the direct effects of attractiveness, professionalism, interactivity and entertainment were 0.181, 0.200, 0.190 and 0.276 respectively, indicating that these 4 features could significantly enhance consumers purchase intentions. These results are in consistent with previous researcher Cheng (2023), Cao, et al., (2024), Chen and Zhang (2019), suggesting that features of knowledge-based live streamers can significantly

elevate overall consumer involvement and trust. Particularly in the live streaming market, as technology advances and competition increase, differentiated streamers' features becomes crucial.

Research objective 2 This study found that the direct effects of attractiveness, professionalism, interactivity and entertainment on flow experience were 0.190, 0.227, 0.251 and 0.283 respectively, indicating that these 4 features could significantly enhance consumers flow experience in context of e-commerce live streaming. These results are consistent with previous researcher Fei and Zhou (2021), Zheng et al (2023), Tian, et al (2022), Song, et al., (2023).

Research objective 3 This study found that the direct effects of flow experience on undergraduate's purchase intention was 0.174, indicating that flow experience could significantly influence consumer purchase intention. This result is in consistent with previous researcher Hyun et al., (2022), Liu et al. (2022), Huo, et al., (2023).

Research objective 4 This study found that flow experience played a significant mediating role between features of knowledge-based live streamers, and purchase intentions. The indirect effect of 4 features on purchase intention through flow experience 0.033, 0.039, 0.049 and 0.044 respectively. These findings are line with the result of Hyun et al., (2022), Liu et al. (2022), Huo, et al., (2023), indicating that enhancing flow experience can strengthen the impact of involvement on purchase intentions, as flow experience enhances the emotional connection between consumers and live streamers, thereby increasing their likelihood of purchasing behaviors.

Conclusion

This study not only revealed the mechanisms through which features of knowledge-based live streamers directly influence purchase intentions but also confirmed the mediating role of flow experience, enhancing our understanding of consumer behavior in the e-commerce live streaming sector. These findings are of significant strategic importance for e-commerce live streaming enterprises.

Recommendation

In future study, inclusion of consumers from various age groups, occupations, and cultural backgrounds can be considered to test the universality of the model. Secondly, the boundaries of theory can be expanded to explore the interaction effects between the characteristics of knowledge-based live streamers and other variables (such as product types, social influence), or introducing moderating variables (such as consumers' knowledge level). Lastly, the research can be driven by Technology combining AI sentiment analysis (such as bullet screen semantic recognition) or neuroscientific methods, deepening the mechanism analysis.

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