The Impact of Host Emotional Expression on Consumer Preference for Self-improvement products in E-commerce Live Streaming

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Abstract. The way hosts express emotions in live streaming not only impacts how online consumers perceive e-commerce products but also influences their impression of the hosts, ultimately affecting consumer behavior. This study aims to explore how emotional expression by e-commerce hosts influences consumer preference for self-improvement products. The findings show that the type of emotional expression by hosts affects consumer preference for self-improvement products. Compared to positive emotional expression, negative emotional expression by hosts tends to increase consumer preference for self-improvement products. Additionally, the study observes the mediating role of source credibility in influencing consumer preference for self-improvement products based on host emotional expression. High source credibility leads to a stronger preference for self-improvement products. These findings provide valuable insights for e-commerce hosts to understand which emotional expressions effectively attract consumers and enhance their preference for self-improvement products, and establish a theoretical basis for host emotional expression strategies.

Keywords: e-commerce live broadcast; emotional expression; self-improvement product preference.

1   Introduction

E-commerce live streaming is now a vital marketing platform due to its real-time, authentic, and highly interactive nature (Min & Tan, 2023)[20]. Unlike traditional social media, it allows two-way interaction between hosts and viewers, meeting consumers' demands for product information and emotional value (Ma, Jin, & Liu, 2023)[19]. This unique appeal drives high engagement and easily stimulates consumer purchasing behavior (Liu, Sun, & Liu, 2023)[16].

Hosts in e-commerce live streaming rooms play a significant role in connecting with users. Their language, tone, and body language during product demonstrations have a profound impact (Li, Wang, & Shi, 2023; Zhang, Wang, & Zhao, 2023) [15][33].

Different emotional expressions by hosts not only serve as their personal branding but also influence the effectiveness of their live sales, as they provide consumers with various emotional experiences, triggering a high level of emotional resonance (Deng, Lou, & Pei, 2023)[5]. Consumers judge hosts based on their emotional expressions, affecting the effectiveness of live sales. Previous research mainly focused on consumers' purchasing decisions from the perspectives of hosts' professionalism and popularity (Xia, 2022)[29], with little on how emotional expressions by hosts impact preferences for self-improvement products.

With the improvement of living standards, people are increasingly focused on self-enhancement, which can fundamentally improve an individual's self-concept and provide long-term benefits (Sedikides & Strube, 1997)[23]. E-commerce live streaming platforms have become important for selling self-improvement products (Chen, Chen, & Chen, 2023)[4]. This paper investigates how different emotional expressions by hosts influence consumers' preferences for self-improvement products and explores whether consumers' perceptions of source credibility mediate their preferences.

By examining the emotional value conveyed by hosts' emotional expressions in e-commerce and exploring the impact of these expressions on viewers' preferences for and responses to self-improvement products, this study aims to improve the potential of the e-commerce live streaming market. In the next section, we review relevant research on hosts' emotional expressions and self-improvement products, proposing theoretical hypotheses based on the source credibility model regarding the intrinsic mechanisms of hosts' emotional expressions on preferences for self-improvement products in e-commerce live streaming.

2   Literature review and hypothesis development

2.1   E-commerce Hosts and Emotional Expression

E-commerce live streaming is a modern sales model where hosts present product information to consumers through verbal introductions on live platforms. There is no standard definition for "e-commerce live streaming" in the academic community. Han (2021) defines it as a business model combining e-commerce and live streaming, launching products on e-commerce platforms and transforming offline products into online sales through brand promotion[11]. The rapid growth of live streaming in e-commerce has led scholars to focus on its commercial value, such as the impact of the live streaming atmosphere and information display on consumer engagement (Gong et al., 2019)[9].

As central figures in e-commerce live streaming, hosts' verbal, tonal, and physical elements during product demonstrations subtly influence consumer behavior. E-commerce hosts, a new group of individuals, introduce products to viewers in real-time through live platforms, prompting purchases (Xie & Li, 2019)[30]. Unlike influencers, e-commerce hosts need not only basic influencer traits but also the ability to prompt purchases (Liu & Meng, 2020)[17]. To sustain consumer purchases, hosts need to showcase their personal style, with emotional expression being a core component.

Unique emotional expressions attract high consumer attention and enhance engagement, increasing the likelihood of purchases (Diao et al., 2023)[6].

Emotional expression involves individuals communicating their internal emotional states through nonverbal actions and behaviors (Muzard et al., 2017)[21]. From the host's perspective, the live studio is akin to a performance stage, where hosts showcase themselves, meeting the audience's needs and demonstrating their value. E-commerce live streaming provides a second emotional expression space beyond daily life for consumers. Due to its ability to transcend time and space, e-commerce live streaming offers consumers a temporary escape from real life, making the live streaming room a space for emotional activities between hosts and viewers.

2.2   Self-improvement products

Self-improvement involves individuals consciously seeking to enhance physical, psychological, and spiritual aspects. This includes acquiring knowledge, improving skills, and enhancing personal attributes to foster a positive self-concept (Allard & White, 2015)[1]. Consumption of self-improvement products falls under compensatory consumption, where individuals purchase these products to improve personal attributes or self-concept in certain tasks, fulfilling the need for self-realization. For example, individuals may buy self-help books or functional beverages to enhance their abilities (Allard & White, 2015)[1].

Current research on self-improvement consumption primarily focuses on the antecedents and situational cues influencing this type of consumption. When individuals perceive a threat to their self-concept, they tend to engage in self-improvement behaviors to maintain self-esteem, leading to a preference for purchasing self-improvement products (Liu, Sang, & Dou, 2011)[18]. Negative emotional perceptions such as guilt or financial constraints also influence consumer preference for self-improvement products (Allard & White, 2015; Yang, Li, & Zhou, 2019)[1][31]. Additionally, activating the concept of money, social crowding, and other external situational cues can trigger consumers' self-achievement motivation and self-improvement demands, enhancing their preference for self-improvement products (Ding & Zhong, 2020; Zhao, Jing, & Tao, 2017)[7][34].

E-commerce live streaming is considered to have emotional value, including authenticity, immediacy, and high interactivity. The type of emotion affects consumers' understanding of product information to varying degrees. Positive emotions increase audience enjoyment of the program, while negative emotions reduce enjoyment and create cognitive buffering (Bagozzi, Gopinath, & Nyer, 1999)[2]. The type of emotion influences consumer product preferences. Under positive emotions, consumers are more inclined to choose indulgent products that bring spiritual satisfaction, while under negative emotions, they tend to select practical products to fulfill functional needs (Huang & Zhang, 2012)[14]. Considering that self-improvement products fall under practical items, the following hypothesis is proposed:

H1: The type of emotional expression by hosts influences consumer preference for self-improvement products. Compared to positive emotional expression, negative

emotional expression by hosts leads to a higher preference for self-improvement products among consumers.

2.3   Source Credibility

In information encounter situations, factors such as the form of information, the credibility of the source, the novelty of the information, and the ease of retrieval influence consumer attitudes (Tian & Yu, 2013)[26]. In e-commerce live streaming, the emotional expression by hosts can influence consumers' trust in the host or brand. Emotional responses, such as celebrity endorsements, can significantly impact users' emotions (Bhattacherjee & Sanford, 2006)[3].According to the Parasocial Interaction theory, media exposure creates an unreal user experience, generating a sense of illusion (Hartmann & Goldhoorn, 2011)[12]. In live streaming, the intense emotional labor of hosts can resonate with the audience, subsequently influencing their behavior.

The Source Credibility model indicates that the audience's evaluation of the communicator is closely related to source credibility, which affects the audience's acceptance of information. Trustworthiness and expertise are important factors influencing source credibility (Hovland, 1959)[13]. High source credibility makes information more attractive to users, leading to positive emotions and influencing perceived usefulness, information acquisition, and purchase intentions (Pan, 2023; Zha et al., 2017)[22][32].

Based on the information persuasion perspective, the professionalism and honesty of the information communicator can strengthen the persuasive effect of the information. Therefore, the following hypotheses are proposed:

H2: Source credibility influences consumer preference for self-improvement products. High source credibility leads to a higher preference for self-improvement products among consumers compared to low source credibility.

H3: Source credibility mediates the relationship between the emotional expression by hosts and consumer preference for self-improvement products. Under conditions of negative emotional expression by hosts, higher source credibility among consumers promotes a higher preference for self-improvement products compared to positive emotional expression.

3   Methodology and research design

3.1   Pretest: Stimulus Material Manipulation

To manipulate participants' cognitive differences towards self-improvement and non-self-improvement products, we used books and functional beverages as stimulus materials. For the books, we presented two different books to the participants: "Excellent Speaker," which helps individuals improve their public speaking skills, described as "Public speaking skills are crucial, and a successful person must be an excellent speaker. 'Excellent Speaker' can help you master the skills of public speaking and shine on the stage." "Humorous Jokes," an entertaining book, was described as "The first thing in life is to be happy. 'Jokes Galore' brings you unlimited joy, filling your

life with happiness." For the functional beverages (refer to Yang, Li, & Zhou (2019) for stimulus material)[31], we presented two beverages of equal price, both priced at 10 yuan per bottle. Apart from different brand names and descriptions, all other factors were identical. One functional beverage, F, with self-improvement effects, was described as "F Beverage: Replenishes mental energy. F Beverage can help you stay more alert and think more clearly." The other beverage, E, without self-improvement effects, was described as "E Beverage: Replenishes body fluids. E Beverage can help you replenish essential body fluids."

We recruited 47 participants using Wenjuanxing, all of whom had experience watching e-commerce live streaming videos. The majority of the respondents were female (n=31; 66%), aged between 18 and 25 years (n=41; 87%), and had a bachelor's degree (n=37, 79%). Participants were first informed of the definition of self-improvement products. They were then asked to evaluate the self-improvement level of the two types of products ("How do you rate the self-improvement level of this product": 1=very low, 5=very high) (See Appendix A). The results of paired sample t-tests showed that the mean ratings of the two materials in the book group ($M_{Excellent\ Speaker}$=4.06 vs. $M_{Humorous\ Jokes}$=3.19, p<0.001) and the functional beverage group ($M_{F\ Beverage}$=4.02 vs. $M_{E\ Beverage}$=3.30, p<0.001) were significantly different. Therefore, the manipulation of the two sets of stimulus materials was effective.

3.2   Study One

3.2.1 Participants and Design

Study 1 utilized a one-factor between-subjects design (host emotional expression: positive vs. negative), with 163 participants recruited through Wenjuanxing. After excluding invalid questionnaires, 138 valid samples were obtained, with 72 in the positive group and 66 in the negative group. The majority of respondents were female (n=85; 62%), aged between 18 and 25 years (n=136; 99%), with a bachelor's degree (n=122, 88%), and a monthly disposable income of over 2000 yuan (n=69, 50%).

3.2.2 Materials and Procedure

Books were used as experimental materials, with participants randomly assigned to one of two emotional expression conditions of the host. To avoid the influence of participants' emotions on the questionnaire measurements, we first measured the participants' initial emotions (refer to Du & Fan (2009), see Appendix A for scales)[8], and samples with significantly deviating scores were excluded from the data analysis, ensuring that the samples were at a similar level. Subsequently, participants viewed an image of a host with either a positive or negative emotional expression (See Figure 1.), and those in the positive emotional expression group also saw the following information: "You are watching a live broadcast about books. At this moment, the host is smiling and cheerfully introducing the information about the books, describing the benefits the books can bring." Participants in the negative emotional expression group saw the following information: "You are watching a live broadcast about books. At this moment, a negative review of the book appears in the live broadcast, making the

host very angry. The host's expression is serious, with a look of uncontrollable anger in their eyes, and an angry tone as they respond to the review and introduce the information about the books and the benefits they can bring." They then viewed an image of a host with either a positive or negative emotional expression and were asked to rate their perception of the host's emotional expression, their current emotional state, and their willingness to read the two books (See Appendix A for measurements).

Positive emotional expression   Negative emotional expression

Fig. 1. Emotional expression types of hosts in the context of live streaming book sales

3.2.3 Results Analysis

Independent sample t-tests for the perception of the host's emotional expression showed that the positive group perceived stronger positive emotions than negative emotions (M $_{positive\ group}$=3.80>M $_{negative\ group}$=2.59, p<0.001), while the negative group perceived stronger negative emotions than positive emotions (M $_{negative\ group}$=3.35>M $_{positive\ group}$=2.73, p<0.001). Additionally, the positive group had a higher level of positivity than the negative group (M $_{positive\ group}$=3.95>M $_{negative\ group}$=2.41, p<0.001), and a lower level of negativity than the negative group (M $_{positive\ group}$=2.47<M $_{negative\ group}$=3.73, p<0.001). Therefore, the manipulation test of the host's emotional expression type was effective.

A one-way ANOVA with reading willingness for self-improvement books as the dependent variable showed that the negative group's willingness to read self-improvement books (M $_{negative\ group}$=4.09, SD=0.80) was significantly higher than that of the positive group (M $_{positive\ group}$=3.25, SD=0.765, F(1, 137)=39.30, p=0.000). Furthermore, a paired sample t-test with reading willingness as the dependent variable revealed that the negative group's willingness to read self-improvement books was significantly higher than that of non-self-improvement books (M $_{self-improvement}$=4.76>M $_{non-self-improvement}$=3.32, p<0.001). This indicates that the negative emotional expression of the host has a significant positive impact on consumer preference for self-improvement products. Similarly, using reading willingness for non-self-improvement books as the dependent variable, the negative group's willingness (M $_{negative\ group}$=3.32, SD=0.81) was significantly lower than that of the positive group (M $_{positive\ group}$=4.17, SD=0.79), F(1, 137)=39.59, p=0.000. This indicates that when the host expresses negative emotions, participants are more inclined to choose self-improvement products. H1 is supported.
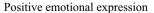
3.3   Study Two

3.3.1 Participants and Design

Study 2 used a one-factor between-subjects design (host emotional expression: positive vs. negative) with 146 participants. After excluding invalid questionnaires, 129 valid samples were obtained, with 67 in the positive group and 62 in the negative group. The majority of respondents were female (n=71; 55%), aged between 18 and 25 years (n=124; 96%), with a bachelor's degree (n=122, 88%), and a monthly disposable income of over 2000 yuan (n=58, 45%).

3.3.2 Materials and Procedure

In this study, functional beverages were selected as experimental materials, and participants were randomly assigned to one of the two emotional expression conditions of the host. To avoid the influence of participants' emotions on the questionnaire measurements, we first measured the participants' initial emotions. Subsequently, participants viewed an image of a host with either a positive or negative emotional expression (See Figure 2.), and those in the positive emotional expression group also saw the following information: "You are watching a live broadcast about beverages. At this moment, the host is smiling and cheerfully introducing the information about the beverages, describing the benefits the beverages can bring." Participants in the negative emotional expression group saw the following information: "You are watching a live broadcast about beverages. At this moment, a negative review of the beverage appears in the live broadcast, making the host very angry. The host's expression is serious, with a look of uncontrollable anger in their eyes, and an angry tone as they respond to the review and introduce the information about the beverages and the benefits they can bring." We then measured participants' perception of the host's emotional expression, their current emotional state, and measured source credibility, product choice preference, and willingness to purchase self-improvement product (See Appendix A for measurements).

Positive emotional expression   Negative emotional expression

Fig. 2. Emotional expression types of hosts in the context of live streaming sales of functional beverages

3.3.3 Results Analysis

Independent sample t-tests for the perception of the host's emotional expression showed that the positive group perceived stronger positive emotions than negative emotions (M $_{positive\ group}$=3.83>M $_{negative\ group}$=2.44, p<0.001), while the negative group perceived stronger negative emotions than positive emotions (M $_{negative\ group}$=3.47>M $_{positive\ group}$=2.65, p<0.001). Additionally, the positive group had a higher level of positivity than the negative group (M $_{positive\ group}$=3.90>M $_{negative\ group}$=2.45, p<0.001), and a lower level of negativity than the negative group (M $_{positive\ group}$=2.50<M $_{negative\ group}$=3.77, p<0.001). Therefore, the manipulation test of the host's emotional expression type was effective.

Using source credibility as the independent variable and the willingness to purchase self-improvement beverages as the dependent variable, an ANOVA analysis showed that source credibility significantly positively influenced the preference for self-improvement products (β=0.69, F(1, 128)=14.68, p=0.000). H2 is supported. Additionally, the impact of different host emotional expression types on source credibility was significantly different, with the negative group's source credibility significantly higher than that of the positive group (M negative group=4.02<M positive group=3.69). H2 is supported.

A linear hierarchical regression test for the mediating effect of source credibility between host emotional expression and preference for self-improvement products showed that source credibility partially mediated the influence of positive host emotional expression on preference for self-improvement products (β=0.44, SE=0.17, p=0.01); and partially mediated the influence of negative host emotional expression on preference for self-improvement products (β=0.63, SE=0.19, p<0.001). Additionally, the impact of negative host emotional expression on source credibility was higher compared to positive emotional expression, thus leading to a higher preference for self-improvement products. H3 is supported.

4   Discussion

4.1   Theoretical Implications

Our study makes theoretical contributions in several ways. Firstly, we extend the research on emotional expressions of hosts in live streaming e-commerce. Previous studies focused on consumers' purchasing decisions based on hosts' professionalism and popularity (Chen, Chen, & Chen, 2023; Xia, 2022)[4][29]. This study explores the differential impact of hosts' emotional expression types (positive and negative) on preferences for self-improvement products. Both experiments confirm that hosts' emotional expressions have varying effects on preferences for self-improvement products. Specifically, consumers show a higher preference for self-improvement products when hosts express negative emotions compared to positive emotions. Secondly, our study provides a new perspective on the mechanisms influencing consumers' willingness to purchase self-improvement products while watching live streaming e-commerce. Hosts' emotional expressions play a crucial role during live streaming (Wongkitrungrueng & Assarut, 2018)[28]. This study verifies that the impact of hosts'

emotional expressions on consumers' preferences for self-improvement products is driven by consumers' perceptions of the hosts' source credibility. Therefore, this study provides a theoretical basis for hosts' emotional management strategies from the consumers' perspective.

4.2   Practical Implications

Enhancing consumers' perceptions of hosts' source credibility and preferences for self-improvement products is a significant challenge in live streaming e-commerce. Our study confirms that hosts' expression of negative emotions positively promotes consumers' preferences for self-improvement products. This insight helps e-commerce live streaming hosts understand the importance of emotional expression management. Companies need to flexibly use emotional expression strategies based on the different needs and preferences of their target audience during live streaming e-commerce to achieve more effective promotional outcomes. Particularly for self-improvement products, the use of negative emotions is a double-edged sword. While negative emotions such as consumer anxiety and guilt significantly enhance consumer preferences for self-improvement products (Allard & White, 2015; Grewal, Wu, & Cutright, 2022)[1][10], anger and dissatisfaction have been shown to reduce consumer purchase intentions in previous research (Tong et al., 2021;Watson, Clark, & Tellegen, 1988)[25][27]. Therefore, appropriately using emotional strategies to express negative emotions to enhance consumer preferences for self-improvement products will have a positive impact on marketing.

4.3   Limitations and Future Research

Our study has some limitations but also provides directions for future research. Firstly, our study only categorizes hosts' emotional expressions as positive and negative, while hosts may display other types of emotional expressions during live streaming e-commerce. Future research can further categorize hosts' expression of negative emotions and verify the specific impact of emotional expressions on consumer purchase decisions. Secondly, our study controlled for participants' emotional states before answering the questionnaire, but more implicit individual states, such as consumer psychological stress, cannot be reflected by the scales (Sommerfeldt et al., 2019)[24]. In the future, more diverse data types can be utilized to validate hypotheses and expand research on individual psychological stress to behavioral decision-making. Additionally, most participants in our study were college students, primarily aged 18-25. Live streaming e-commerce has vast market potential, and different product types correspond to different target audience groups. Future research should consider expanding the sample to include different age groups, occupations, and education levels for targeted investigations.

5   Conclusions

This study reveals that e-commerce live streamers' emotional expression significantly influences consumers' preference for self-improvement products. Negative emotional expression by live streamers increases consumers' preference for these products compared to positive emotional expression. The study also highlights the role of source credibility in mediating the relationship between live streamers' emotional expression and consumers' preference for self-improvement products. Higher source credibility strengthens consumers' preference for these products based on live streamers' emotional expression. These findings provide valuable guidance for e-commerce practitioners, helping them understand which emotional expression methods can effectively attract consumers and enhance their preference for self-improvement products. Additionally, the research lays the groundwork for emotional expression strategies by live streamers in e-commerce live broadcasting and emphasizes the importance of managing emotional expression, particularly the flexible application of emotional expression strategies based on the diverse needs and preferences of target audiences. It is clear that appropriately using emotional expression strategies to convey negative emotions can positively impact marketing, especially for self-improvement products.

Appendix A. Scales and measures

Construct	Adapted scale
Perception of self-enhancement (in pretest)	How do you perceive the level of self-improvement of this product? (1= Very Low, 5= Very High)
Initial Emotions (in study 1, 2)	You are feeling very good right now. You feel happy when answering these questions. You are feeling very pleased right now. You are feeling unhappy right now . Source: Du & Fan (2009) (1= Very Low, 5= Very High)
Perception of Emotional Expression (in Study 1, 2)	You perceive the current emotion of the host as pleasant. You perceive the current emotion of the host as excited. You perceive the current emotion of the host as passionate. You perceive the current emotion of the host as anxious. You perceive the current emotion of the host as angry. You perceive the current emotion of the host as dissatisfied. Source: Watson, Clark, & Tellegen (1988) (1= Very Inconsistent, 5= Very Consistent)

Current Emotions (in Study 1, 2)	Your current emotion is pleasant. Your current emotion is happy. Your current emotion is optimistic. Your current emotion is energetic. Your current emotion is confident. Your current emotion is uneasy. Your current emotion is suppressed. Your current emotion is depressed. Your current emotion is despondent. Your current emotion is anxious. Source: Watson, Clark, & Tellegen (1988) (1= Very Inconsistent, 5= Very Consistent)
Willingness to Read (in Study 1)	Do you have the intention to read this book? (1= Strongly Inconsistent, 5= Strongly Consistent)
Source Credibility (in Study 2)	You believe that the host has a significant influence. You believe that the host is reliable. You believe that the host' s live broadcast is trustworthy. Source: Zha et al., (2017) (1= Strongly Inconsistent, 5= Strongly Consistent)
Product Preference (in Study 2)	To thank you for participating in our experiment, we will give you a bottle of functional beverage as a reward. Both bottles of the beverage are priced at 10 yuan, with identical ingredients and packaging. Please carefully read the introduction of the two bottles of beverage and select one.
Purchase Intention (in Study 2)	Do you want to purchase Beverage F? (1= Strongly Inconsistent, 5= Strongly Consistent)

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