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Understanding How Best to Host Livestream Shopping Shows: The Perspectives of Persuasion and Parasocial Phenomena

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Abstract

The emergence of live streaming enables sellers and customers to interact more easily in real time and establish a close relationship. This study explores how the characteristics and addressing styles of livestream sellers affect viewers' behavioral intention. The effects of parasocial interaction and the relationship between sellers and viewers are also examined. A conceptual model is designed from the perspectives of persuasion and parasocial phenomena. An Internet survey is conducted to test the proposed model. The results show that the expertise of a seller can positively influence viewers' watch and purchase intentions. However, an attractive appearance cannot persuade viewers to purchase. The verbal and message addressing is more effective than bodily addressing to enhance parasocial interactions and further determines parasocial relationship and viewers' behavioral intentions. The findings can help sellers know how best to host livestream shopping shows.

Keywords: livestream shopping; persuasion; parasocial interaction; parasocial relationship; watch intention; purchase intention

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Introduction

Previous studies on livestreaming have focused mainly on viewers' gift giving behavior (Liu et al., 2022; Ma et al., 2022; Wu et al., 2022) and viewers' motivation for using livestreaming (C.-C. Chen & Lin, 2018; Y. Gu et al., 2023; Qian & Seifried, 2023; Zhao et al., 2018). Few studies have investigated how a livestream seller affects customers' behavioral intention. Live commerce emerged in 2016 with the launch of Alibaba's Taobao Live. It has become mainstream in China and is showing signs of strong growth in other markets, including the United States and Europe (Bezdach et al., 2023). According to McKinsey & Company, Douyin and Taobao Live are the most popular live-commerce platforms in China, while most live-commerce users shop on Facebook, Instagram, and YouTube in Europe, Latin America, and the United States (Bezdach et al., 2023). McKinsey & Company predicted that live commerce will account for up to 10 to 20 percent of all e-commerce sales by 2026 (Arora et al., 2021). In Taiwan, more than 70 percent of Internet users have engaged in livestream shopping. Facebook and YouTube are the most popular platforms (Tzu-ti, 2021). In a livestream shopping show, a livestream seller mentions the keyword of the product in the show. The viewer who wants to buy the product can simply type the keyword with the quantity such as "keyword +1" in the chatroom to place an order. After that, the viewer will receive a confirmation message to proceed to checkout.

Social media influencers are individuals who gain fame and have a relatively large follower base on social media. Prior studies on influencer endorsements have shown that influencers have great power to persuade consumers' buying decisions because they are approachable, making consumers feel similar to them, and they promote

products in authentic settings, which makes consumers perceive them as trustworthy (Janssen et al., 2022; Schouten et al., 2020). In traditional social commerce, influencers share self-generated content that contains mainly images and text. Compared with traditional social commerce, an influencer can guide consumers by providing details about the commodity in a livestream show and answers to consumers' questions in a real-time and interactive way. As a new phenomenon, it is crucial to understand how a livestream seller effectively hosts a show to persuade consumers' buying decisions. Particularly, this study advances our understanding of influencer-endorsement effectiveness by exploring the role of parasocial interactions and parasocial relationships.

To advance our understanding regarding the best way to host livestream shows, this study examines how a livestream seller's characteristics and addressing styles influence the viewer's intentions to watch and purchase. Seller characteristics can serve as cues to influence viewers, while the seller's addressing style may determine viewers' parasocial interactions and relationship with the seller. This study investigates how sellers' addressing styles and characteristics function together to affect the viewer's behavioral intentions. Attractiveness and expertise are key characteristics of an influencer to influence others through identification and internalization processes (Kelman, 1961). The characteristics are the sources of power utilized by celebrities and social media influencers to influence others (Hudders et al., 2021); therefore, this study focuses on these two characteristics of livestream sellers.

Similar to performers on TV, a livestream seller can provide viewers with parasocial interactions by employing a proper addressing style. A parasocial interaction is a viewer's experience of being part of a social interaction with a performer (Hartmann & Goldhoorn, 2011). Some studies have found that parasocial interactions/relationships on social media can increase purchase intention and behavioral addiction (de Bérail et al., 2019; Sokolova & Kefi, 2020). However, how social media influencers induce viewers to establish parasocial interactions/relationships with them remains unclear. Moreover, while these studies did not differentiate parasocial relationships from parasocial interactions, the two concepts do differ from each other (Dibble et al., 2016). The present study explores how the addressing styles (bodily, verbal and message-related) of a livestream seller affect parasocial interactions, and further affect parasocial relationships and viewers' behavioral intentions, in order to advance our understanding of parasocial phenomena on social media.

Literature Review

Livestream Shopping

Livestream shopping is an evolution of social commerce and has some similar features with TV home shopping, however, livestream shopping does have its own distinct features (Ki et al., 2024). Livestream shopping provides a more immersive environment than the static imagery and text used in earlier forms of social commerce. In livestream shopping, consumers can contact with the seller in real time and in the same interface that consumers use to watch a livestream show. In addition, livestream shopping provides more information in a richer format for better product evaluation, more personalized service from the seller, and a higher ability to communicate with the seller and other consumers than traditional social commerce. In comparison with TV home shopping, livestream shopping serves as a synchronous and bidirectional communication channel whereby consumers can interact directly with both the seller and co-viewers. TV home shopping hosts are professional show hosts or celebrities. In contrast, livestream sellers can come from a diversity of backgrounds, even any livestream users can serve as a host.

The immediate and interactive nature of livestream shopping enables consumers to gain the information they needed to make informed purchases and allow sellers not only selling products but also forming relationships with consumers (Ki et al., 2024). Li et al. (2021) reported that synchronous interactions between a livestream seller and users can develop the user's emotional attachment to the seller. The similarity between a seller and users makes the user identify with the seller and develop emotional attachment to the seller. M. Zhang et al. (2020) showed that livestream shopping provides vivid sensory imagery and real-time social interactions, which can reduce psychological distance between users and sellers. Wongkitrungrueng and Assarut (2020) argued that the two-way synchronized communication between users and sellers in livestream shopping improves authenticity, responsiveness, enjoyment, and social values, and therefore increases users' trust in both the product and the seller. The present study contributes to livestream shopping literature by exploring how a seller best to host a livestream show to persuade viewers and to form viewers' parasocial relationships with the seller.

Persuasion of Livestream Seller

The Elaboration Likelihood Model (ELM) provides a comprehensive framework for the effectiveness of the persuasion process (Hedhli & Zourrig, 2023; Petty & Cacioppo, 1986). According to the ELM, persuasion can be achieved in two ways. The first type of persuasion is most likely caused by one's support for the issue-relevant arguments. The real value of the information provided by the arguments is deeply considered. This is referred to as the central route. The other type of persuasion is referred to as the peripheral route, and is more likely to be caused by some simple cue in the persuasion environment (for example, an attractive source) that does not require much thought about the relevant information of the argument. The motivations and abilities of the message recipient determine which route is more effectively persuasive. Livestream sellers can utilize their attractiveness and expertise to persuade viewers. Viewers who have a low level of involvement with the purchase have little motivation to carefully evaluate the merits of what the seller is saying, hence the seller's attractiveness may become more effective. Since a seller's expertise depends on what he or she says (Kelman, 1961; Ki & Kim, 2019), this characteristic should be more powerful when the viewer's involvement with the purchase is high.

Holzwarth et al. (2006) examined the influence of virtual image persuasion on retailing, based on the ELM. They argued that the use of an avatar (a kind of virtual image sales agent) is effective in persuading customers. Attractive avatars are more persuasive to customers with moderate levels of product involvement, and expert avatars are more persuasive to customers with high levels of product involvement. People's perception of the avatar's likeability mediates the influence of the avatar's attractiveness on persuasion. Similarly, the viewer's perception of credibility mediates the influence of the avatar's expertise on persuasion. Selling a product is a process of persuasion, conveying information and attempting to change the attitude of the recipient. Generally speaking, if the information source is considered to be both attractive and an expert, the source can influence the audience's attitude and behavior (Holzwarth et al., 2006; Ohanian, 1990).

Little research has been done to understand how a livestream seller persuades viewers (C.-D. Chen et al., 2022; Gao et al., 2021). Our study adapts the model of Holzwarth et al. (2006) to explain how a livestream seller persuades viewers, because this model focuses on the attractiveness and expertise of the seller. The attractiveness of social media influencers (e.g., the degree to which the influencer is considered good looking) and their expertise have been considered key factors to attract followers (Eyal et al., 2020; Goanta & Ranchordás, 2020; Hudders et al., 2021). This study aims to answer whether the attractiveness and expertise of a livestream seller have the same impact on viewers' watch and purchase intentions. In addition, we consider the effect of parasocial phenomena since livestream shows share some features with TV shows.

Parasocial Phenomenon

The concepts of parasocial interaction and parasocial relationships are often used to explain the influence of media characters on audiences. Many researchers have studied parasocial phenomena, and their descriptions of parasocial interactions and parasocial relationships seem to be similar (Copeland et al., 2023; de Bérail et al., 2019; Hartmann & Goldhoorn, 2011; Lim & Kim, 2011). Both seek a form of social engagement or satisfaction via the media. Although they are related, they are conceptually different phenomena (Dibble et al., 2016). The present study clearly distinguishes between the concepts of parasocial interaction and parasocial relationships and explains their connection.

Parasocial Interaction

Horton and Wohl (1956) defined parasocial interaction as a "simulacrum of conversational give and take," which happens between audiences and public media performers, although it is only the imagination of the audience. According to Hartmann and Goldhoorn (2011), parasocial interaction is "characterized by a felt reciprocity with a TV performer that comprises a sense of mutual awareness, attention, and adjustment." Generally speaking, parasocial interaction has been defined as a sense of a mutual interaction with the media figure during the media exposure (Tukachinsky et al., 2020).

Grant et al. (1991) argued that parasocial interaction is one of the main features of television shopping. They believed that shopping programs give audiences a sense of "real existence" through live broadcasting. The shopping host's addressing style and live engagement by phone make audiences feel just like they are interacting with friends in their living room. Similar to real interactions, the addressing style of performers seems to be an

important part of the establishment and maintenance of parasocial interactions (Cohen, 2001; Hartmann & Goldhoorn, 2011). If performers address the audience using body language and verbal expressions (aka “bodily and verbal addressing”), the audience will have a strong sense that this is a socially interactive experience.

Parasocial Relationships

The concept of parasocial relationships is considered to be similar to the concept of social relationships in real life. The term “parasocial relationship” refers to the psychological connection unilaterally established between audiences and media characters, usually a long-term, positive and unilateral intimate relationship (Dibble et al., 2016). These relationships give audiences a sense of intimacy with media characters, and their feelings reflect real social relationships. Parasocial interaction is a false mutual interaction that occurs only during the viewing process. In contrast, a parasocial relationship is a feeling of intimacy and a sense of relationship that media users can continue experiencing outside the context of a particular viewing process (Tukachinsky et al., 2020). Cummins and Cui (2014) also mentioned that parasocial interaction is a sense of mutual awareness, attention, and adjustment caused by certain cues (bodily or verbal addressing) given by media performers during watching the media. Parasocial relationships, on the other hand, develop over time and exist after watching the media.

In the context of television, the audience may feel a close relationship with the TV shopping host, thus affecting their impulse buying behavior (Park & Lennon, 2006). In the context of livestreaming, the interactive situation of traditional shopping can be simulated in the online shopping environment. When livestream sellers speak directly to the audience, the illusion of interpersonal interaction is enhanced. Through these interactions, consumers form a sense of intimacy with media figures, and their feelings reflect the real social relationship (Dibble et al., 2016). The live chatroom is one of the functions of social media, and the online interaction in the chatroom helps consumers obtain product information (Xiang et al., 2016). Livestream shopping combines the characteristics of TV shopping and social media and supports synchronous and bidirectional communications, which should be conducive to the development of parasocial interaction. Through the function of instant response, the interaction process is likely to make customers feel close, and may establish a stronger parasocial relationship, thus affecting customer behavior.

Hypothesis Development

Influence of Type of Livestream Seller

The attractiveness of a source affects the first impression (e.g., likeability) made upon meeting. Physical attractiveness can be used as a basis for judging whether or not one person likes another, as long as there is no other, more direct evidence of likeability. The physical attractiveness of salespeople is an important basis for inferring their likeability (Fiske & Neuberg, 1990; Reinhard et al., 2008). People tend to perceive physically attractive people in a positive light and thus the likability increases with the attractiveness (Salminen et al., 2023). Therefore, we posit that an attractive livestream seller is pleasant, which can enhance viewers’ perceptions of the likeability of the seller.

H1: The attractiveness of a livestream seller is positively related to the likeability of the seller.

Many users on the Internet show their expertise through online tools. They are considered to have relevant expertise because of their firsthand knowledge or experience of a particular situation. Therefore, other users could perceive them as credible (Filiari et al., 2023; Flanagin & Metzger, 2008). Madden and Fox (2006) suggested that, in the Internet environment, the surging wisdom of crowds may replace the authority of traditional institutions. How knowledgeable an expert is and how correct the information provided can determine people’s perceptions of the expert’s credibility (Metzger & Flanagin, 2013). In the context of livestreaming, expert sellers can express their knowledgeable opinions in a certain product domain and make viewers consider the opinions to be truthful and valid and trust in the seller (C.-D. Chen et al., 2022), hence the perceived expertise of a seller should have a positive impact on the perceived credibility of the seller. Therefore, we propose the following hypothesis.

H2: The perceived expertise of a livestream seller is positively related to the perceived credibility of the seller.

Communicator attractiveness has been shown to have a greater impact on persuasion at a lower level of involvement, while communicator expertise has a greater impact on persuasion at a higher level of involvement

(Petty et al., 1981). The persuasion process of shopping in a virtual environment has a similar effect (Hanus & Fox, 2015; Holzwarth et al., 2006). Livestream sellers are communicators who can persuade and interact with customers. The moderating effect of involvement should remain effective in the livestreaming context. Therefore, the following hypotheses are proposed.

H3a: The degree of product involvement negatively moderates the impact of livestream seller attractiveness on likability.

H3b: The degree of product involvement positively moderates the impact of livestream seller expertise on credibility.

The pleasure of interacting with an attractive person promotes changes in the communicator's behavior and attitude (McGuire, 1985). Likeability mediates the persuasiveness of attractiveness and has a positive effect on purchase intention (Holzwarth et al., 2006). Persuasion has a positive impact on the customer when the salesperson is perceived to be likeable (Reinhard & Messner, 2009). In the context of livestreaming, we can infer that the likeability of livestream sellers will affect the audiences' purchase intentions.

Leigh and Summers (2002) mentioned that nonverbal cues have an impact on customers' social impressions (e.g., likeability) of the salesperson that promote positive customer responses. Pauser et al. (2018) showed that the charisma of a salesperson can affect the customer's perception and response. Charisma is conceptualized as the ability to guide others in the process of interaction via likability, and this likeability could also create expectations for future interactions. Therefore, we regard the likeability of the seller as an important factor that drives audiences to continuously watch the seller's livestream shows. The following hypotheses are proposed.

H4: The likeability of the livestream seller has a positive impact on the viewer's (a) purchase intention and (b) watch intention.

People are more likely to be persuaded by a source when the source is believed to be credible. The credibility of retail salespeople is important to persuade and induce purchase intentions (Ko, 2024; Krapfel, 1985). Consumers who believe the salesperson (the influencer) is credible are more likely to accept the salesperson's suggestions, to be persuaded, and to buy (Bawack & Bonhoure, 2023; Grewal et al., 1994). In the context of livestreaming, credible sellers can provide real-time responses to eliminate consumers' doubts about products and affect viewers' purchase intentions.

Higher source credibility leads the recipient to have a more positive attitude and positive thoughts than does lower source credibility (Tormala et al., 2006). On social media, a fan page with source credibility can cause users to trust the social media and become more likely to visit and respond (Y.-J. Lee & Ahn, 2013). Customers also tend to use credible sources' suggestions to make decisions (Ko, 2024; Ngamvichaikit & Beise-Zee, 2014). In livestreaming environment, we predict that if viewers perceive a seller to be credible, they will interact with the seller continuously in order to get advice from the seller. Therefore, the following hypotheses are proposed.

H5: The perceived credibility of the livestream seller has a positive impact on the viewer's (a) purchase intention and (b) watch intention.

Antecedents of Parasocial Interaction

Performers' body language can trigger and reinforce viewers' parasocial experiences (Malandro et al., 1989). Performers can bodily address viewers by adjusting their heads and aiming their eyes toward the camera, so that viewers consider the performer as speaking directly to them, which can foster an intense parasocial experience (Hartmann & Goldhoorn, 2011). Livestreaming is video broadcasted in real time. A seller and viewers can communicate synchronously during the show, which can more easily induce parasocial interactions than a TV show can. When a seller adjusts his or her head and eyes toward the camera, viewers could perceive the seller as speaking directly to them face-to-face and feel that the seller is aware of them.

Performers can also verbally address viewers by directly referring to viewers, or adjusting their wording and tone of voice to the viewer (DeVito, 2001). Viewers that are directly addressed by a performer on a verbal level feel a more intense parasocial experience than viewers that are not addressed (Hartmann & Goldhoorn, 2011). A live chatroom will show the viewer's user name, and the livestream seller can directly call viewers by their names or nicknames. If a livestream seller directly refers to a viewer and talks to the viewer using the wording and tone of

voice with which the viewer is familiar, the viewer could feel a sense of mutual awareness, attention and adjustment.

Livestream shopping allows customers to ask questions through a live chatroom or the danmaku, and the seller can answer questions in real time (Wongkitrungrueng & Assarut, 2020). Live chatrooms allow for instant interaction via messages, and more accurate replies. This is also the biggest advantage over previous retail channels: the livestreamer can interact positively with the audience in real time (Hu et al., 2017). We posit that if a livestream seller directly refers to a viewer in a chatroom and sends a message to answer the viewer's question in a way that the viewer can understand, the viewer is likely to have a strong sense that this is a socially interactive experience. Therefore, the following hypotheses are proposed.

H6: A livestream seller's (a) bodily addressing, (b) verbal addressing, and (c) message addressing has a positive impact on the viewer's parasocial interaction.

Antecedents and Consequences of Parasocial Relationships

Conceptually, parasocial relationships are considered to be parallel to interpersonal relationships. Studies of parasocial relationships generally support theories and models regarding interpersonal relationships (Eyal & Dailey, 2012). The likeability of a person can be seen as the extent to which the person is perceived as friendly, polite, and able to get along with others in a pleasant manner (Ellegaard, 2012). Likeability has been shown to correlate with general interpersonal relationships (Jayanti & Whipple, 2008; Nicholson et al., 2001), and some studies have also found a positive correlation between likeability and business interactions (Abosag & Naudé, 2014). Obviously, likeability is an important prerequisite for building interpersonal relationships. The more a livestream seller is considered as likable, the more likely the viewer is to treat the seller as a friend and feel a sense of intimacy with the seller. Therefore, we propose this hypothesis.

H7: The likeability of a livestream seller is positively related to the strength of the viewer's parasocial relationship with the seller.

Users tend to discuss and interact with other users on media that is perceived as having high credibility (Westerman et al., 2014). The credibility of a social media influencer will have a positive impact on the follower's attitude and emotional attachment toward that influencer (Colton, 2018; Shoukat et al., 2023). Gatignon and Robertson (1986) argued that as the credibility of the information source increases, the degree of interpersonal communication also increases. The higher the credibility of the other person, the closer the relationship between the two people will become. As such, there is reason to suspect that seeing a livestream seller as credible is related to increased levels of intimacy, even though that intimacy may be one-sided. Therefore, we propose this hypothesis.

H8: The perceived credibility of a livestream seller is positively related to the strength of the viewer's parasocial relationship with the seller.

Parasocial interaction emphasizes an illusory user experience that takes place in the process of watching, and a parasocial relationship is a long-term socioemotional bond that a user develops with the media performer (Dibble et al., 2016). Hu (2016) described the relationship between the two concepts in these terms: parasocial interaction reflects and facilitates the parasocial relationship, while the parasocial relationship relies on and strengthens parasocial interaction. Parasocial relationships can be established and developed based on interactions (de Bérail et al., 2019). Since the development of an interpersonal relationship is based on interactions, we can infer that the strength of parasocial interactions in live streaming can form strong parasocial relationships between a viewer and a livestream seller. Therefore, we propose this hypothesis.

H9: The strength of parasocial interaction is positively related to the strength of parasocial relationship.

For traditional media such as television programs, the audience can establish parasocial relationships with shopping program hosts. They may see the host as a friend offering advice. Interactions with the program host build a relationship that enhances the purchasing experience and social satisfaction, thus increasing purchase intention (Grant et al., 1991; Lim & Kim, 2011). For social media, parasocial relationships between fans (followers) and digital celebrities have been proven to enhance fans' brand perceptions and influence their decision making (Hwang & Zhang, 2018; Ko, 2024; Sokolova & Kefi, 2020). Therefore, we posit that the parasocial relationships established between livestream sellers and viewers have a positive effect on purchase intention.

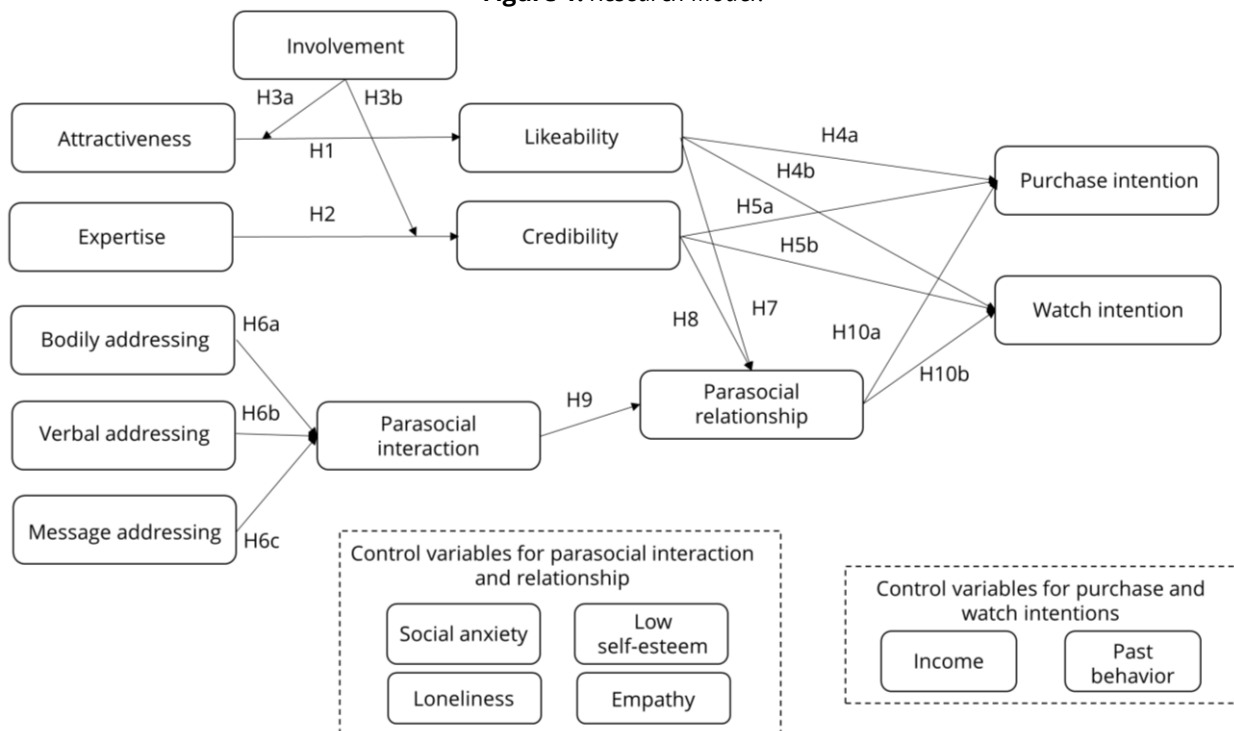
From television programs to social media environments, social motivations have been shown to influence the intention to use these media (Lim & Kim, 2011). Prior studies mentioned that the viewers' relationships with the livestreamer and other viewers are positively correlated with the willingness to continue watching (Hu et al., 2017; Ko, 2024). People will spend more time watching livestreaming to satisfy their social demand. There is a significant correlation between social motivation and usage time (Gros et al., 2017). Therefore, we hypothesize that the establishment of a parasocial relationship with the livestreamer will drive people to watch the streamer's shows continuously. Therefore, we propose the hypotheses.

H10: Viewers' parasocial relationships with a livestream seller are positively associated with the viewer's (a) purchase intention and (b) watch intention.

Research Model

Based on the literature review, we developed a research model (shown in Figure 1) to explore how a livestream seller's characteristics (attractiveness and expertise) and behavior (addressing styles) affect viewers' intention to watch and purchase in the near future. The research model considers a seller's attractiveness, expertise, likeability and credibility, as well as a consumer's product involvement and purchase intention based on the model proposed by Holzwarth et al. (2006). We also consider watch intention because it is an important factor in the context of livestreaming (Y. Guo et al., 2022; Qian & Seifried, 2023). We further expand the model by integrating a seller's addressing styles based on parasocial interaction theory (Dibble et al., 2016; Hartmann & Goldhoorn, 2011) and posit that a livestream seller's addressing styles have an impact on the viewer's parasocial interaction and parasocial relationship with the seller and further determine the viewer's behavioral intentions.

Figure 1. Research Model.



Some personal traits may enhance parasocial interactions or parasocial relationships with media characters. Parasocial interactions can satisfy individuals' needs for belonging by compensating for their lack of interactions in real life. The emergence of social media simply makes up for the lack of social reality. Individuals with poor social skills may develop stronger parasocial interactions (Hartmann, 2017). Hwang and Zhang (2018) proposed that people with low self-esteem and high levels of loneliness are more likely to build and maintain parasocial interactions on social media to satisfy their desire for social contact and sense of belonging. They also mentioned social anxiety as one of the social compensation variables. Social anxiety drives users establish parasocial interactions on social media (de Bérail et al., 2019). Moreover, empathy can help a person understand another person's emotions and resonate with their feelings, which in turn helps them to strengthen parasocial interactions or relationships (Derrick et al., 2008; Hwang & Zhang, 2018; Scherer et al., 2022; Shin, 2018). From the above literature we can know that personal traits are important factors influencing parasocial interactions or relationships. Therefore, we regard low self-esteem, loneliness, social anxiety, and empathy as control variables

in the research model. In addition, we control the variables of income and past behavior (purchasing frequency and usage frequency in livestream shows). These variables have a significant impact on behavioral intentions in the context of livestreaming (Sun et al., 2019).

Methods

Measurement Development

This study used seven-point Likert scales to measure the constructs, where 1 indicates *strongly disagree*, 4 indicates *neutral*, and 7 indicates *strongly agree*. To operationalize our constructs, all the measures used in this study were adapted to fit the context of livestream shopping from the literature. Items for measuring purchasing intention and watching intention were adapted from D. J. Kim et al. (2008). Items for measuring parasocial interaction and parasocial relationship were adapted from Dibble et al. (2016). The source items of parasocial relationship, *I look forward to watching Amy in another video clip* and *If Amy would appear in another video clip, I would watch that clip*, were not used in our study because the two items are highly related to watch intention. In addition, the item *I find Amy to be attractive* was not used in our study because it is highly related to attractiveness. For attractiveness, expertise, product involvement, likeability and credibility, we adapted the measurement items from Holzwarth et al. (2006). Items for measuring bodily, verbal and message addressing were adapted from Hartmann and Goldhoorn (2011). The measurement items are listed in Appendix A. In regard to control variables, the items of social anxiety were adopted from Peters et al. (2012), the items of loneliness were adopted from de Bérail et al. (2019), and the items of low self-esteem and empathy were adopted from Gentina et al. (2018). The items measuring income and past behavior were adopted from Sun et al. (2019).

Sample and Data Collection

We used an online questionnaire to collect data by using purposive sampling, and posted the announcement of the survey in e-shopping related groups on Facebook, the largest of which is "LIVE1688," with more than 240,000 members. As far as we know, that is the most popular group in Taiwan that focuses on livestream shopping. The questionnaire was written in Chinese because the survey was conducted in Taiwan. The survey lasted for seventeen days.

The announcement stated the purpose of the study and the qualifications for participating in the survey. Participants were required to have had the experience of watching at least one livestream shopping show in the previous month, and must have seen at least one product sold on the show. The participants whose responses were complete and valid were offered a chance to win a gift card as a reward. Participants were informed that their responses would remain anonymous and be used for academic purposes only. All of the data will be summarized, and no individual will be identifiable from the summarized results. The participants clicked the Start button to proceed to the questionnaire if they agreed to participate in the study with full knowledge of everything noted about the study.

We asked respondents to answer the name of the recently-viewed livestream seller or channel, and to indicate the categories of products the seller provided. The seller noted by the respondent was the one referred to in the scale questions. Two questions (*How many times have you watched the livestream shopping show of this seller in the last month?* and *What is the name of the livestream seller or the channel?*) about personal experience and one trap question (*I haven't actually watched a livestream shopping show in the last month.*) were used as screening criteria to check whether the participants answered the questionnaire carefully.

Results

Sample Description

The survey involved 469 participants, and 114 invalid samples (as determined by the screening criteria) were deleted. Therefore, the valid sample size was 355. The sample demographic data is shown in Table 1. Most of the respondents were female (63.7%), and between 21 and 30 years old (58.6%). The gender and age distributions are similar to those of the recent study on live streaming commerce (Gao et al., 2021). This indicates the representativeness of our sample.

Table 1. *Sample Demographics.*

Attribute	Category	Frequency	Percent
Gender	Male	129	36.30%
	Female	226	63.70%
Age	Under 20	54	15.20%
	21 < age < 25	120	33.80%
	26 < age < 30	88	24.80%
	31 < age < 35	55	15.50%
	36 < age < 40	24	6.80%
	41 < age < 45	6	1.70%
	Over 45	8	2.30%
Platform	Facebook	204	57.50%
	Instagram	56	15.80%
	Shopee	83	23.40%
	Others	12	3.40%
Product categories	Clothing and Accessories	192	54.10%
	Boutique	24	6.80%
	Toys	14	3.90%
	Fresh food (seafood, meat, fruit, etc.)	46	13.00%
	Food and Snack	16	4.50%
	3C product	14	3.90%
	Cosmetic and Care products	16	4.50%
	Daily supplies (household, health items, etc.)	24	6.80%
	Others	9	2.50%

Measurement Model

As shown in Table 2, the Cronbach's Alpha and composite reliability (CR) value for each construct is greater than .7, and all values of the average variance extracted (AVE) are higher than .5, so the reliability of the measurement is good. According to Eisinga et al. (2013), Spearman-Brown coefficient is the most appropriate reliability coefficient for a two-item scale. We further used SPSS 24 to calculate split-half reliability for the two-item scales, purchase intention and watch intention. The results show that the Spearman-Brown coefficients of purchase intention and watch intention are .917 and .878, respectively. The coefficients are greater than .7 and indicate good reliability (de Vet et al., 2017). Convergent validity is established when all items converge well on their own construct. Convergent validity can be examined by item-total correlation (ITC), factor loading, and AVE and requires that their values are greater than .3, .7, and .5, respectively (Cheung et al., 2024; Fornell & Larcker, 1981). Table 2 shows that all the criteria are met, so the convergent validity is good. Discriminant validity is established when each construct can be distinguished from other constructs. In other words, each construct explains more variance of its indicators than another construct. To achieve good discriminant validity, the correlation coefficients among constructs should be less than .9, and the square root of AVE should be greater than the interconstruct correlation coefficients (Cheung et al., 2024; Fornell & Larcker, 1981). The diagonal line of the correlation matrix (see Table 3)

represents the square root of AVE, all of which are greater than the correlation coefficient between constructs. The correlation coefficients among constructs are less than .9. The results show that the measurement also achieves the desired discriminant validity.

Table 2. *Factor Analysis Result.*

Construct	Item	Factor Loading	Item-total Correlation
Attractiveness (ATR) Alpha = .889 CR = .931 AVE = .819	ATR1	.85	.66
	ATR2	.93	.86
	ATR3	.93	.86
Expertise (EXP) Alpha = .835 CR = .901 AVE = .752	EXP1	.88	.75
	EXP2	.87	.70
	EXP3	.85	.65
Likeability (LIK) Alpha = .900 CR = .937 AVE = .833	LIK1	.91	.81
	LIK2	.93	.84
	LIK3	.90	.76
Credibility (CRE) Alpha = .893 CR = .934 AVE = .824	CRE1	.91	.79
	CRE2	.91	.79
	CRE3	.90	.78
Involvement (INV) Alpha = .828 CR = .886 AVE = .660	INV1	.79	.63
	INV2	.81	.66
	INV3	.86	.72
	INV4	.78	.61
Bodily addressing (BOD) Alpha = .937 CR = .960 AVE = .888	BOD1	.92	.85
	BOD2	.96	.91
	BOD3	.94	.85
Verbal addressing (VER) Alpha = .873 CR = .923 AVE = .801	VER1	.94	.85
	VER2	.95	.87
	VER3	.79	.60
Message addressing (MES) Alpha = .924 CR = .952 AVE = .869	MES1	.95	.88
	MES2	.97	.91
	MES3	.88	.75
Parasocial interaction (PSI) Alpha = .959 CR = .967 AVE = .830	PSI1	.92	.88
	PSI2	.89	.84
	PSI3	.90	.85
	PSI4	.93	.90
	PSI5	.93	.89
	PSI6	.90	.85
Parasocial relationship (PSR) Alpha = .856 CR = .896 AVE = .633	PSR1	.86	.72
	PSR2	.79	.59
	PSR3	.78	.65
	PSR4	.79	.73
	PSR5	.75	.68
Purchase intention (PUR) Alpha = .917 CR = .960 AVE = .923	PUR1	.96	.85
	PUR2	.96	.85
Watch intention (WAT) Alpha = .878 CR = .943 AVE = .891	WAT1	.95	.78
	WAT2	.94	.78

Table 3. Descriptive Statistics and Correlation Matrix.

	Mean	SD	ATR	EXP	LIK	CRE	INV	BOD	VER	MES	PSI	PSR	PUR	WAT
ATR	5.18	1.52	<i>.91</i>											
EXP	5.26	1.31	.48	<i>.87</i>										
LIK	5.90	0.99	.57	.55	<i>.91</i>									
CRE	5.74	1.04	.52	.61	.74	<i>.91</i>								
INV	5.25	1.35	.54	.48	.50	.58	<i>.81</i>							
BOD	5.50	1.31	.40	.43	.45	.48	.31	<i>.94</i>						
VER	4.26	2.00	.28	.38	.30	.35	.38	.37	<i>.90</i>					
MES	4.11	2.06	.24	.39	.23	.34	.36	.38	.79	<i>.93</i>				
PSI	4.38	1.88	.23	.37	.32	.40	.42	.36	.76	.78	<i>.91</i>			
PSR	4.55	1.79	.51	.52	.54	.62	.58	.44	.60	.60	.65	<i>.80</i>		
PUR	5.46	1.40	.45	.44	.53	.63	.59	.43	.40	.40	.43	.59	<i>.96</i>	
WAT	5.61	1.27	.49	.45	.58	.61	.56	.43	.46	.44	.47	.64	.74	<i>.94</i>

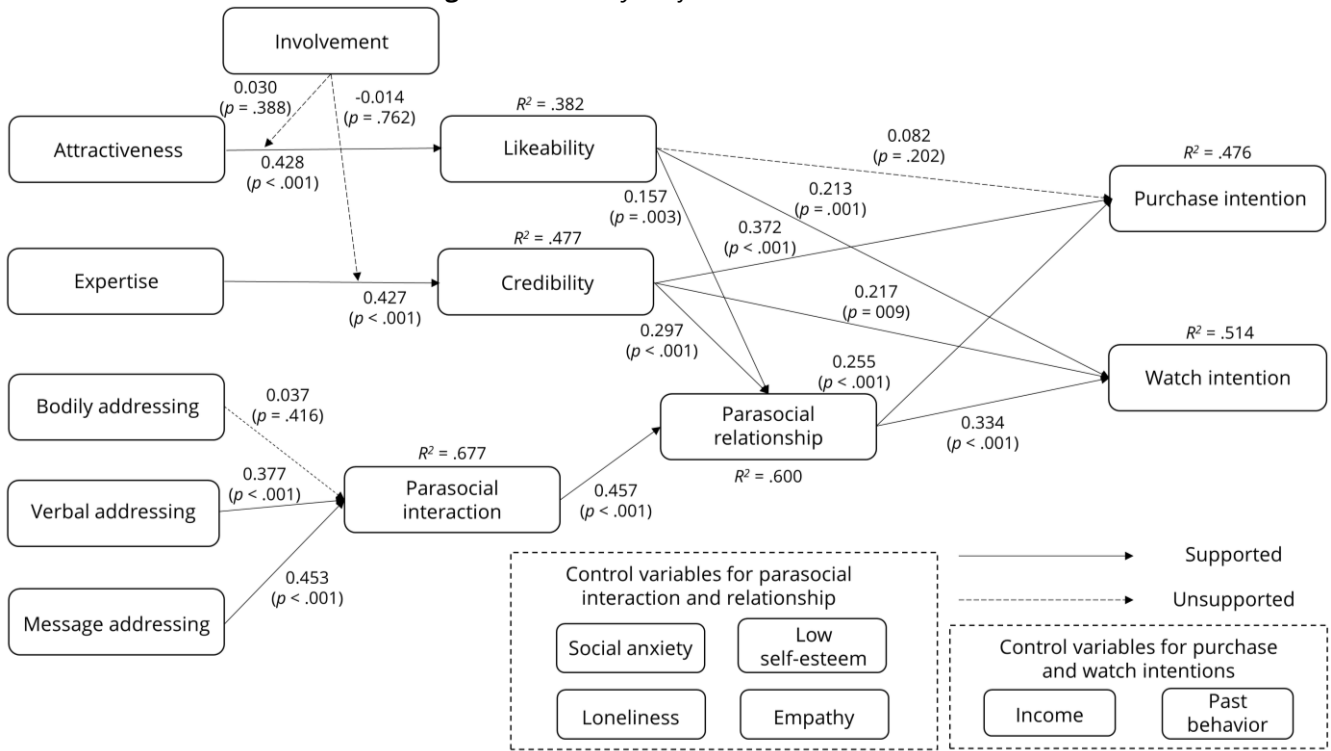
Note. ATR: Attractiveness, EXP: Expertise, LIK: Likeability, GRE: Credibility, INV: Involvement, BOD: Bodily addressing, VER: Verbal addressing, MES: Message addressing, PSI: Parasocial interaction, PSR: Parasocial relationship, PUR: Purchase intention, WAT: Watch intention; The diagonal line of the correlation matrix (in italics) represents the square root of AVE.

Testing of the Research Model and Hypotheses

The critical ratio of multivariate = 62.8 > 5, which means the observed variables cannot achieve multivariate normality (Hair et al., 2012), and indicates the violation of the Covariance-Based Structural Equation Modeling (CB-SEM) assumption of multivariate normality. Partial Least Squares (PLS) SEM is deemed more appropriate than CB-SEM for the data analysis. We used SmartPLS with a bootstrapping algorithm (number of resamples = 5,000) to analyze the structural model.

Figure 2 shows the path coefficients and significance of the structural model. The model explains 48% of the variance of purchase intention, and 51% of the variance of watch intention. All of the relationships between constructs are significant except for the relationship between likeability and purchase intention (H4a), the relationship between bodily addressing and parasocial interaction (H6a), and the moderating effects of product involvement (H3). The attractiveness of livestream sellers makes the audience feel that the seller is likeable ($\beta = .428, p < .001$). Livestream sellers who are seen as likeable are more likely to induce users to continue to watch ($\beta = .213, p < .001$) but not necessarily to make a purchase ($\beta = .082$). The more expert a seller is seen to be, the more credibility the audience perceives ($\beta = .427, p < .001$). When the seller is credible, viewers are more willing to watch the livestream show ($\beta = .217, p = .009$) and to purchase products ($\beta = .372, p < .001$).

Figure 2. PLS Analysis of the Research Model.



In terms of parasocial phenomena, we find that verbal addressing ($\beta = .377$, $p < .001$) and message addressing ($\beta = .453$, $p < .001$) with appropriate wording can promote parasocial interaction between the seller and the audience. Bodily addressing ($\beta = .037$) may not increase social interaction. The seller's likeability ($\beta = .157$, $p = .003$) and credibility ($\beta = .297$, $p < .001$) have positive effects on establishing parasocial relationships. Better parasocial interactions between the seller and the audience can positively enhance the parasocial relationship ($\beta = .457$, $p < .001$). Lastly, the closer the parasocial relationships become, the more likely the audience is to watch ($\beta = .334$, $p < .001$) and purchase ($\beta = .255$, $p < .001$).

For the control variables, social anxiety ($\beta = .121$, $p = .041$) and low self-esteem ($\beta = -.164$, $p = .011$) have impacts on parasocial relationship. Purchase frequency ($\beta = .115$, $p = .004$) has a positive impact on purchase intention. Income ($\beta = .074$, $p = .037$) and watch frequency ($\beta = .087$, $p = .027$) have positive impacts on watch intention. In this study, the moderating effects of product involvement are not significant. The seller's attractiveness and expertise have significant persuasive effects, regardless of the level of product involvement. Table 4 summarizes the hypothesis testing results.

Table 4. Results of the Hypothesis Testing.

Hypothesis	Path coefficient	t-value	p-value	Result
H1: ATR -> LIK	.43	8.70	< .001	Supported
H2: EXP -> CRE	.43	7.72	< .001	Supported
H3a: ATR×INV -> LIK	.03	0.86	.388	Unsupported
H3b: EXP×INV -> CRE	-.01	0.30	.762	Unsupported
H4a: LIK -> PUR	.08	1.28	.202	Unsupported
H4b: LIK -> WAT	.21	3.48	.001	Supported
H5a: CRE -> PUR	.37	4.31	< .001	Supported
H5b: CRE -> WAT	.22	2.62	.009	Supported
H6a: BOD -> PSI	.04	0.81	.416	Unsupported
H6b: VER -> PSI	.38	5.61	< .001	Supported
H6c: MES -> PSI	.45	6.60	< .001	Supported
H7: LIK -> PSR	.16	2.95	.003	Supported
H8: CRE -> PSR	.30	5.20	< .001	Supported
H9: PSI -> PSR	.46	9.70	< .001	Supported
H10a: PSR -> PUR	.26	3.79	< .001	Supported
H10b: PSR -> WAT	.33	4.90	< .001	Supported

Note. ATR: Attractiveness, EXP: Expertise, LIK: Likeability, GRE: Credibility, INV: Involvement, BOD: Bodily addressing, VER: Verbal addressing, MES: Message addressing, PSI: Parasocial interaction, PSR: Parasocial relationship, PUR: Purchase intention, WAT: Watch intention.

Common Method Variance

Data for the variables were collected from the same respondents at the same time, so systematic bias may occur because of the measurement method. We adopted the PLS marker variables approach to diagnosing common method variance (CMV; Rönkkö & Ylitalo, 2011). The items of fantasizing and fashion consciousness were used as marker indicators (Malhotra et al., 2006) to create a method factor. We added the method factor to the model as an exogenous variable to predict the endogenous variables and compared the new model with the original model. We find that the significant paths in the original model remain significant in the new model (see Appendix B). Therefore, the CMV problem does not occur in the data.

Discussion

The results of the study have increased our understanding of the persuasion process in livestream selling, as well as the parasocial phenomena regarding the interaction and relationship between the seller and audience. Most of the hypotheses have been confirmed. The research findings show the significant impacts of a seller's addressing styles and characteristics on the viewer's behavioral intentions.

The likeability of a livestream seller leads the audience to continue watching the show, but it cannot persuade the audience to purchase. In a livestream show, a seller's credibility is more influential than likability in persuading a consumer to make a purchase. One possible reason is that trust is the key determinant of purchase intention in influencer marketing. Consumers expect a seller's endorsement to be beneficial as they believe the seller's recommendations will bring a positive outcome. A livestream seller's credibility plays a significant role in building trust. In contrast, physical attractiveness and likability cannot build trust effectively. This finding is consistent with that of D. Y. Kim and Kim (2021). Attractiveness or likability remains important for driving consumers to continue watching a seller's shows. It can be effective for positive judgment in an initial stage of social influence, e.g., identification. On the other hand, credibility is indispensable for accepting the influence (Kelman, 1961). In the live-shopping context, a seller's credibility leads to more trust than does their likeability and thus more consumer purchase intention.

Previous research has shown that TV hosts can increase the sense of interaction with the audience through bodily addressing (body orientation or eye gaze) (Hartmann & Goldhoorn, 2011). In the context of livestream shopping, we found that bodily addressing is not significant in promoting parasocial interaction. The seller can not only watch

the audience during the livestreaming, but can also know clearly whether the audience is online through the chatroom system. The seller can address the audience verbally or send messages in the chatroom while the audience can also send messages to the seller, which results in a high degree of social interaction and social presence developed from the two-way synchronized communication between the seller and the audience (Wongkitrungrueng & Assarut, 2020). Compared with gazing at the audience, verbal and message addressing can achieve more direct and effective interactions, so the effect of the bodily addressing is relatively weakened.

Product involvement has no significant moderating effect, which shows that regardless of how important the product is to the viewer, the seller's attractiveness and expertise are determinants of the seller's likability and credibility. Another possible reason is the effect of endorser-product congruence. An attractive endorser becomes an issue-relevant argument via the central route when the endorsed product is an attractiveness-related product. The impact of involvement could be moderated by endorser-product congruence (Y. Lee & Koo, 2016).

Theoretical Implications

Our study investigated the combined effects of the livestream sellers' characteristics (attractiveness and expertise) and addressing styles (bodily, verbal, and message addressing) on purchase intention and watch intention, which increases our understanding of livestream shopping on social media. Prior studies explained livestream viewers' behavioral intentions from the perspectives of information technology (IT) affordance (Kawaf & Giroto, 2024; Sun et al., 2019; L. Zhang et al., 2023), perceived value or gratifications (Y. Guo et al., 2022; Wongkitrungrueng & Assarut, 2020), trust (L. Guo et al., 2021; Lu & Chen, 2021; M. Zhang et al., 2022), swift guanxi (H. Chen et al., 2022; L. Guo et al., 2021), technology and experience quality (Yang & Lee, 2024), and the number of followers (X. Gu et al., 2024). In contrast, our study explains viewers' behavioral intentions from the perspective of the livestream seller's characteristics and addressing styles. We developed a model to explain the interaction between the livestream seller and the audience in the process of livestream shopping, as well as the influence on behavioral intentions. We used the ELM to explain the process of persuasion, and discuss the establishment mechanism of parasocial relationship between livestream sellers and users. Our research findings can help livestreamers know how best to perform livestream shows.

Prior studies on influencer endorsements have found that product-endorser fit, number of followers, number of brand endorsements, and social presence can determine the effectiveness of endorsement (Borchers et al., 2022; Janssen et al., 2022; Kilumile & Zuo, 2024; H. Kim, 2022; Schouten et al., 2020). Those studies focused mainly on the context of traditional social commerce. Our study highlights the importance of parasocial interactions in the context of live commerce to improve parasocial relationships and increase consumers' watch and purchase intentions. Social presence is the sense of being with another in a mediated environment (Yan et al., 2024). In contrast, a parasocial interaction is the sense of a mutual interaction with another. A livestream seller should make consumers feel not only that the seller is socially around them but also that the seller is aware of them, speaking directly to them, and knowing they are aware of the seller. This sense of mutual awareness, attention, and adjustment is crucial for enhancing the effectiveness of endorsement in live commerce.

In addition, we demonstrated how to develop parasocial relationships between livestream sellers and viewers. The most of the past parasocial studies, from traditional TV celebrities to Internet celebrities, have been based on the interactions and the relationships between celebrity identity and fans (Aw & Labrecque, 2023; de Bérail et al., 2019; H. Kim et al., 2015; Lim & Kim, 2011). This study focuses on the parasocial interactions and relationships between a livestream seller (anyone can be one) and viewers. Prior studies on the antecedents of parasocial relationships mainly focused on media users' characteristics and argued that loneliness, social anxiety, empathy, and low self-esteem are positively associated with parasocial relationship with media figures (de Bérail et al., 2019; Derrick et al., 2008; Hwang & Zhang, 2018; Scherer et al., 2022; Shin, 2018; Tukachinsky et al., 2020). Our study showed that a media performer's addressing styles and characteristics can also improve a media user's parasocial relationship with the media performer. A media performer's likability and credibility can determine the strength of the parasocial relationship. A media performer can use verbal and message addressing styles to induce parasocial interactions and parasocial relationships. A viewer can sense a mutual interaction with the livestream seller when the seller directly refers to and talks to the viewer in a way that the viewer can understand during the show and in the chatroom. The sense of mutual interaction creates an enduring parasocial relationship that can extend beyond any single livestream show. This study is one of the few studies to explore how parasocial interactions determine parasocial relationships, and our discussion and results will be helpful for future research on related parasocial phenomena.

Practical Implications

Anyone can use social media to become a livestream seller, but the key challenge is how to get viewers to keep watching and purchasing. The results of this study can help livestream sellers identify and employ persuasion and addressing styles that are most appropriate for their target audience. Likeability and credibility determine the audience's watch intention, which means that sellers whom people perceive as friendly and sincere are more likely to entice users to continue to watch. Creating a pleasant image and an attractive appearance is an important factor in retaining the audience. However, an attractive appearance cannot persuade viewers to purchase. The credibility built on a seller's expertise determines the viewer's willingness to purchase. The audience's perception that the seller is trained, experienced and knowledgeable is important to increase sales. We suggest that sellers enrich their knowledge of the product, deliver the product information in a professional manner, and talk to the audience during the livestream show and in the chatroom as if they were friends or family, which can form the image of likeability and credibility and make livestreaming an effective marketing channel.

With appropriate verbal conversation and real-time messaging, livestream sellers can interact with audiences more effectively to create the feeling of mutual interactions. We suggest that the seller should talk to specific audience members by calling out their names in live videos and the chatroom in order to produce good parasocial interactions and further establish a parasocial relationship that is similar to social relationships in real life. The likeability and credibility of the seller can also improve the parasocial relationships with audiences. The audience can view these parasocial relationships as true friendships (de Bérail et al., 2019). Establishing a close parasocial relationship with the audience will be more conducive for livestream sellers to enhance the viewer's behavioral intentions.

Limitations and Future Research

The generalizability of this study might be limited because the product categories were particularly skewed towards clothing, and most participants used Facebook. Although we controlled the impact of income in this study, future research may benefit from identifying various livestream marketing strategies for different product categories, platforms, and audiences with different levels of income. The key characteristics of a livestream seller, attractiveness and expertise, were considered in this study. Other characteristics of a livestream seller are worth of future investigation. For instance, homophily could have an impact on parasocial relationship (Tukachinsky et al., 2020). The similarity of values, beliefs and background characteristics between a viewer and livestream seller could improve their relationship. Moreover, our study has shown how sellers' addressing styles influence the viewer's parasocial interactions, relationships, and behavioral intentions. Prior studies reported that self-disclosure and social support can improve intimate relationship (Billedo et al., 2020; Rothbard et al., 2022). Future research is encouraged to explore how a seller's self-disclosure (to reveal his or her own information, personal thoughts, feelings, and experiences to viewers) and social support (to care for and help viewers) determine the viewer's parasocial interactions, relationships, and behavioral intentions. The research model was developed based on the model proposed by Holzwarth et al. (2006), which conceptualized credibility as the consequence of expertise. Different models have conceptualized credibility from various perspectives. For instance, the source credibility model proposed by Hovland et al. (1953) identified expertise and trustworthiness as the two dimensions of credibility. The source credibility model proposed by Ohanian (1990) identified expertise, trustworthiness, and attractiveness as the three dimensions of credibility. Source credibility conceptualized from different perspectives may lead to varying research findings. Lastly, this is a cross-sectional study that analyzed data at a single point in time. The cause-and-effect and temporal relationships between the constructs are difficult to establish in such a study. A longitudinal study is needed in the future to confirm the relationships.

Conflict of Interest

The authors have no conflicts of interest to declare.

Use of AI Services

The authors declare they have not used any AI services to generate or edit any part of the manuscript or data.

Authors' Contribution

Shiu-Li Huang: conceptualization, resources, supervision, formal analysis, validation, visualization, writing—review & editing. **Yen Chun Chen:** formal analysis, investigation, visualization, methodology, writing—original draft.

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Appendices

Appendix A

Attractiveness

1. In my opinion, the livestream seller is attractive.
2. In my opinion, the livestream seller is beautiful.
3. In my opinion, the livestream seller is good looking.

Expertise

1. In my opinion, the livestream seller is trained.
2. In my opinion, the livestream seller is experienced.
3. In my opinion, the livestream seller is knowledgeable.

Likeability

1. In my opinion, the livestream seller is likeable.
2. In my opinion, the livestream seller is friendly.
3. In my opinion, the livestream seller is agreeable.

Credibility

1. In my opinion, the livestream seller is sincere.
2. In my opinion, the livestream seller is competent.
3. In my opinion, the livestream seller is credible.

Involvement

1. For me, the products in the livestream show are important.
2. For me, the products in the livestream show are fun.
3. For me, the products in the livestream show are exciting.
4. For me, the products in the livestream show are relevant.

Bodily addressing

1. The livestream seller adjusted his/her head toward me.
2. The livestream seller adjusted his/her eyes toward me.
3. The livestream seller gazed at me.

Verbal addressing

1. The livestream seller directly referred to me.
2. The livestream seller made remarks about me during the show.
3. The livestream seller talked to me in a way that I could understand.

Message addressing

1. The livestream seller directly referred to me in the chatroom.
2. The livestream seller made remarks about me in the chatroom.
3. In the chatroom, the livestream seller sent a message to me in a way that I could understand.

Parasocial interaction

While watching the livestream show, I had the feeling that the seller.

1. ... was aware of me.
2. ... knew I was there.
3. ... knew I was aware of him/her.
4. ... knew I paid attention to him/her.
5. ... knew that I reacted to him/her.
6. ...reacted to what I said or did.

Parasocial relationship

1. The livestream seller made me feel comfortable, as if I was with a friend.
2. I see the livestream seller as a natural, down-to-earth person.
3. If there were a story about the livestream seller in a newspaper or magazine, I would read it.
4. I would miss the livestream seller when he/she is on vacation.
5. I would like to meet the livestream seller in person.

Purchase intention

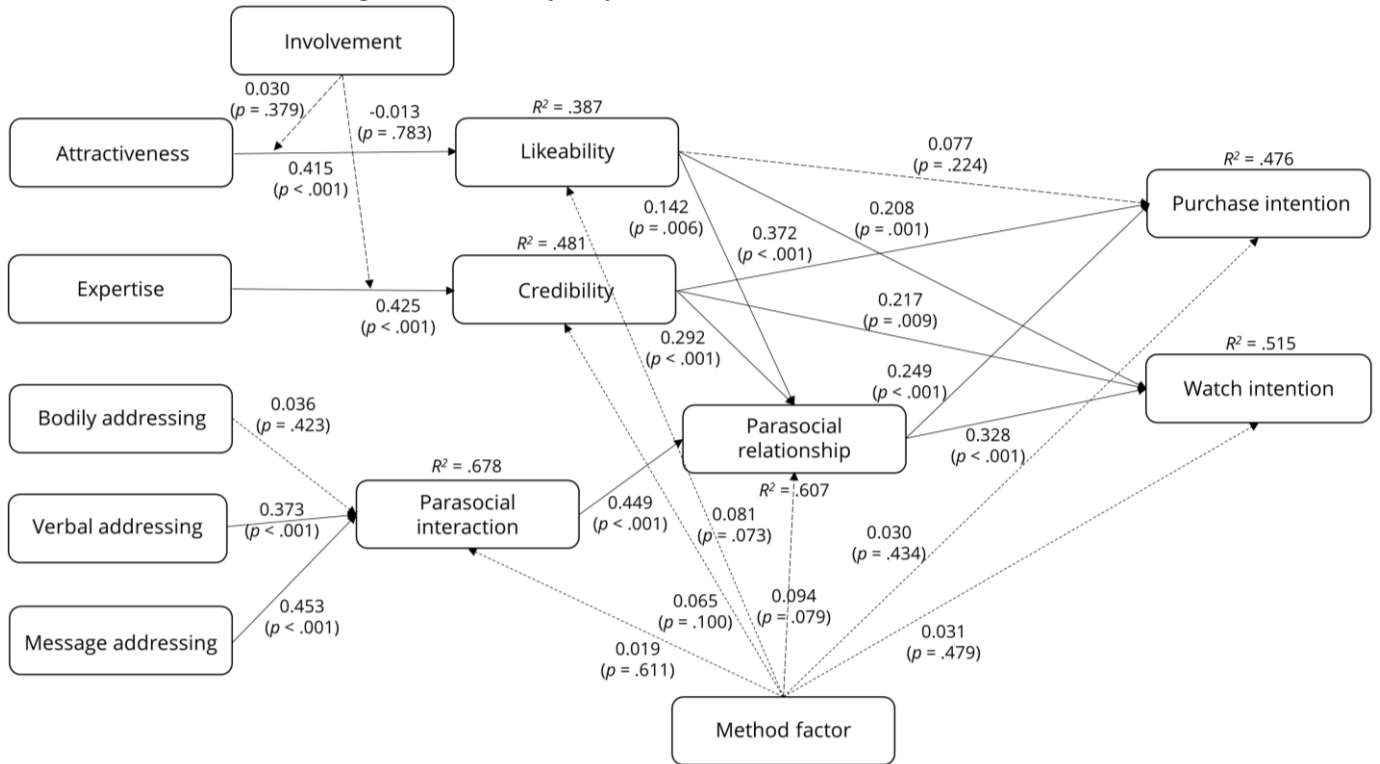
1. I am likely to purchase the products from the seller's livestream show.
2. I am likely to make a purchase from the seller's livestream show if I need the products that I will buy.

Watch intention

1. I am likely to watch the seller's livestream show.
2. I am likely to watch the seller's livestream show again if I need the products that I will buy.

Appendix B

Figure B1. PLS Analysis of the Research Model with Method Factor.



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