Enhancing purchase intentions among young consumers in a live-streaming shopping environment using relational bonds: Are there differences between "buyers" and "non-buyers"?

Abstract

Purpose: Drawing on the stimulus-organism-response (SOR) model, this study examines how live-streaming shopping influences purchase intentions in young consumers. The multigroup analysis is applied to understand the similarities and differences of factors that trigger purchase intentions among buyers and non-buyers in live-streaming shopping.

Methodology: A snowball sampling was used to collect data from 507 Chinese consumers between June and September 2022 using *Wenjuanxing*, i.e., an online survey platform in China. The data was analyzed using the partial least squares method of structural equation modeling.

Findings: The findings revealed that amongst the three relational bonds (S), social and structural bonds were positively associated with trust (O), whereas financial bonds had no significant relationship with trust. This implies that while price discount might not have any significant relationship with trust, the social interactions that college students have with the live-streamers and their products build trust, which in turn translates to purchasing decisions. Comparing buyers and non-buyers, the results support that buyers have a higher level of trust in live-streaming shopping than non-buyers. This is indicative of the authentic and immersive experiences enjoyed by consumers in live streaming that generate structural bonds and foster stronger connections (relational bonds) thereby establishing trust.

Originality: This study is one of the first empirical studies targeting college students as participants in live streaming. These findings are expected to provide actionable insights to streamers especially in converting non-buyers to buyers in live-streaming broadcast.

Keywords: Live-streaming shopping, Relational bonds, Consumers' engagement, Purchase intention, Trust, multigroup analysis

Introduction

Live-streaming shopping has become a new trend where live-streamers promote and sell products to consumers via social media channels (Clement Addo et al. 2021). Technological advances like digitalization have supported this trend, transforming communication and supply chain operations, enhancing customer interactions, and providing real-time transparency (Uren and Edwards 2023, Khan et al. 2022a, Khan et al. 2022c). The recent COVID-19 pandemic lockdown has propelled live-streaming shopping even further as more consumers turn to online shopping. As a result, it has become a promising channel for retailers to reach out to consumers and boost their sales.

Live-streaming shopping involves real-time video content broadcasting by retailers, influencers, or other hosts showcasing and promoting products to a group of audience, who can then purchase the products directly through the platform. Compared to other online channels, live-streaming shopping provides consumers with a highly interactive and immersive experience. Unlike traditional e-commerce platforms, highly curated products are often sold at deep discounts, with live-streamers engaging with the consumers by demonstrating and explaining features of the products in detail, providing critiques of the products, and addressing their queries with sporadic call-in questions or via interactive features such as chat functions and a questions and answer session, and at times even have a chat with celebrity guests. Besides, live-streamers also gamified the consumers' experience by introducing flash sales. They introduced a limited number of highly discounted coupons between their shows and quizzes to liven up the atmosphere (Clement Addo et al. 2021). This platform also provides live-streamers the opportunities to give product recommendations and offer personalized advice, which in turn, promotes authenticity, visualization, and communication between parties. Zhong et al. (2022) added that presence is not only being there but also a mixture of multiple feelings and a significant experience of reality involved in such an immersive shopping experience.

Statistics from McKinsey (2021) forecasted that the proportion of mobile internet advertising will increase to 63% by 2024, with live-streaming shopping becoming the new driving force. With social media usage becoming an integral part of many people's lives worldwide, many businesses are beginning to use live-streaming to maintain their competitiveness in this constantly changing landscape. Despite its growing popularity, live-streaming shopping is still in its infancy (Sun et al. 2019). Firstly, few studies have investigated how live-streaming enhances customer engagement (Sun et al. 2019). As live-streaming shopping is a form of human-computer interaction, it is essential to incorporate both consumers' perceptions and the features of live-streaming shopping. However, current studies, such as Zhao et al. (2018), focused mainly on the utilitarian aspect of live-streaming shopping, paying scant attention to the environmental psychology influencing one's behavioral response in live-streaming shopping. This is where the concept of

relational bonds (consisting of financial, social, and structural bonds), which has been a focal point in the consumer-seller relationship, will further enhance our understanding of live-streaming shopping experience (Alagarsamy et al. 2021, Chang et al. 2019, Hu and Chaudhry 2020)

Secondly, most existing studies on live-streaming shopping often assume the same characteristics across different profiles of research samples. For instance, Hu and Chaudhry (2020) investigation of consumer engagement in live-streaming shopping without making any further segmentation in the population sample. Wongkitrungrueng and Assarut (2020)'s study adopted the same assumptions. Hair et al. (2017a) indicated that such assumptions of different profiles of shared characteristics are often unrealistic. In consumer behavior, consumers of different profiles would display different purchasing behavior and marketing efforts could be more effective when tailored to the consumer groups' unique personality profiles (Pires and Stanton 2000). This claim is supported by von Helversen et al. (2018), who found that average consumer ratings strongly influenced students, while older adults were influenced by single negative reviews rather than positive ones. Given the constant need to adapt commercial strategies to the specific requirements of each group of consumers, the study of segmentation continues to be a topic of interest. Our study addresses this gap by focusing on college students - a growing market segment with purchasing power that increases as they age.

This focus is particularly relevant since college students belong to a specific consumer group with unique characteristics. Young consumers, especially college students, are more likely to accept new ideas and are more willing to try innovative products, have preference for experiential consumption, and are known as digital natives who have a wide range of digital tools at their fingertips (Guan et al. 2022). Hence, they are more likely to be early adopters of live-streaming shopping. As reported in CNNIC (2019), students are the most frequent internet users. Besides, McKinsey (2021) research has indicated that the age composition of live-streamers followers on *Taobao*, *Tik Tok,* and *Weibo* are significantly younger.

Finally, we address a gap in existing works such as Lee and Chen (2021), and Clement Addo et al. (2021), where the premise was that individuals who visit live-streaming shopping would naturally be a buyer. It is unsafe to assume that all people engaged in online activities are buyers. While many people do use the online medium for shopping and purchasing goods and services, there are also those who use it for other purposes, such as research, communication, entertainment, education, or simply browsing (Singh and Basu 2023). On this note, Klepek and Bauerová (2020) indicating that individual experiences and expectations would influence one's choice to be a buyer or non-buyer. That is to say, a purchase decision is a choice decision that encompasses a wide variety of factors, including a combination of rational judgments, previous experiences and individuals' subjective feelings. While such dissimilarities have been studied in online shopping, literature review revealed that no study had examined the dissimilarities between buyers

and non-buyers in a live-streaming shopping environment (Singh and Basu 2023). This is an area where our study advances the understanding of the diversity of online users and their needs to effectively cater to their preferences and expectations.

In sum, our study significantly contributes to the literature on college students' behavior in e-commerce live-streaming. It advances prior research by exploring relational bonds, trust, engagement, and purchase intention, providing a comprehensive understanding of these variables. Consequentially, we shed light on consumer perceptions, attitudes, and behavioral responses, while also examining the role of live-streaming as a direct selling tool to both buyers and non-buyers.

2. Theoretical Framework

The stimuli-organism-response (SOR) framework has been widely used to explain how environmental psychology influences one's behavioral response. According to Mehrabian and Russell (1974), the fundamental tenet of the SOR framework stipulates how different stimuli (S) would influence individuals' internal organisms (O) to derive specific behavioral responses (R). Many studies such as Eroglu et al. (2001) adopt this framework to investigate the factors that influence consumer behavior. Based on the SOR framework, this study (see Figure 1) demonstrates the association between the environmental stimuli (i.e., the relational bonds), organism (i.e., trust), and responses (i.e., consumer engagement and purchase intention) in live-streaming shopping.

Relational Bonds as the Stimuli. As a critical construct in relationship marketing, relational bonds have been found in various studies such as Chang et al. (2019) to manifest its impact on trust, loyalty and purchase intention. Relational bonds can be classified into financial, social, and structural bonds (Berry 1995). Financial bonds refer to the financial incentives to improve consumers' experiences such as discounts (Berry 1995). Social bonds refer to the efforts made by the seller to build up the interpersonal relationship between them and the consumers (Berry 1995). Finally, structural bonds refer to the value-added services live-streamers provide consumers such as additional product information over the live-streaming environment (Berry 1995). As Peng and Kim (2014) noted that stimulus is external to an individual and comprises the environmental aspects, therefore, relational bonds are considered as the stimuli in this study.

Trust as the Organism. Live-streaming shopping provides consumers with possible hedonic, utilitarian, and symbolic shopping experiences which affect a viewer's attitudinal (e.g., trust) and behavioral (e.g., engagement) responses. Gefen et al. (2003) explained that trust is a belief that the other party would perform ethically and socially acceptable without any nefarious thoughts of acting opportunistically. Due to the inherent nature of live-streaming environment, consumers may experience information asymmetry and

increased transaction risks, leading to a lack of trust between live-streamers and consumers, fear of opportunism, and uncertainty in product quality (Gefen et al. 2003). Therefore, trust is even more pertinent in a live-streaming shopping environment where consumers count on seller competency and reliability to serve their long-term interests (Tan et al. 2022). In the SOR framework, an organism is conceptualized as an internal change caused by individuals' evaluation of the stimuli (Eroglu et al. 2001). In this respect, trust towards live-streamers is a function of external stimuli and is considered as an organism in this study.

Consumers' Engagement and Purchase Intention as the Responses. Consumers' engagement refers to the extent of connection and participation in the purchase process (Hu and Chaudhry 2020). Purchase intention, on the other hand, refers to consumers' tendency to purchase a product or service (Armstrong et al. 2000). From a business perspective, it is generally agreed that engaged consumers would provide information that helps businesses design acceptable marketing programs (Hu and Chaudhry 2020). In the same vein, purchase intention is a vital metric in marketing. It reflects information about the consumer's product knowledge, helping marketers better tailor the content displayed in an advertisement (Gefen et al. 2003).

** Insert Figure 1 **

3. Hypotheses Development

3.1. Types of Relational Bonds and Trust

Financial bonds are incentives initiated for consumers (Hu and Chaudhry 2020). During live-streaming shopping, live-streamers introduce discounts, gifts, or special prices that consumers would not obtain outside these sessions. These financial incentives enable consumers to purchase the same product at a relatively lower price and have been shown to increase the perceived value of goods (Hu and Chaudhry 2020). However, studies have also reported that while financial bonds take very little time to create, they may not be as effective as one would have expected (Alagarsamy et al. 2021). This proposition is especially true as trust is as important as price for today's consumers. For instance, it has been revealed that perceived trust exerted a more substantial effect than perceived price on purchase intentions for both potential and repeated online store consumers (Kim et al. 2012). Given the inconsistent findings, it is timely to examine the effect of pricing policies on consumers' trust towards live-streaming shopping, which could significantly augment our existing understanding of consumers' psychological and behavioral responses. Our first hypothesis is:

H1. Financial bonds positively influence trust.

Social bonds emphasize building an interpersonal relationship between the consumer and seller through customized services (Berry 1995). Giving consumers personalized attention, going the extra mile to solve their queries, sending them invites for promotional or other exclusive events, and providing a friendly shopping experience enhance social bonds (Alagarsamy et al. 2021). The added advantage of the live-streaming platform is the ability for live-streamers to interact with the consumers synchronously by leaving comments or responding to their questions. Such facilities allow live-streamers to connect with their consumers, understand their needs, express friendship, build rapport, and provide social support (Lin et al. 2003). Consequently, it is not surprising that different studies demonstrated that developing an intimate relationship with consumers improves their positive commitment (Hu and Chaudhry 2020, Chang et al. 2019). Hence, we proposed that:

H2. Social bonds positively influence trust.

Structural bonds. Live-streamers may also use structural bonds to attract new consumers and maintain current ones. As highlighted, structural bonds are established when the live-streamers enhance consumers' relationships by providing a "convenient shopping environment, sensory information, and professional knowledge" (Hu and Chaudhry 2020). For instance, live-streamers can provide technical information about the products, such as the production processes and the methods of taking care of them. The ability to provide professional knowledge signals live-streamers' competence in the product and has been found to increase consumers' trust (Wang et al., 2016; Chang et al. (2019). Hence, we proposed that:

H3. Structural bonds positively influence trust.

3.2. Trust, Consumers Engagement, and Purchase Intention

Trust plays a crucial role in influencing consumers' purchase decisions in live-streaming shopping, reducing uncertainties, perceived risk, and privacy concerns in the exchange process (Yang 2021). Building trust in the live-streaming shopping environment enhance positive feelings toward the live-streamers, increasing engagement, revisit, and purchase intention (Wongkitrungrueng and Assarut 2020). On the contrary, any form of mistrust signals a loss of confidence in the live-streamers, resulting in disengagement in the purchasing process (Chang et al. 2019). Therefore, it is logical to suggest that the trust towards seller within the live-streaming shopping environment could affect consumers' engagement and purchase intention. Hence, we proposed that:

H4. Trust positively influences consumers' engagement.

H5. Trust positively influences purchase intention.

3.3. Consumers' Engagement and Purchase Intention

Purchase intention is an intensively researched area in the extant marketing literature. It is a component of consumer cognitive behavior on how a person intends to buy a specific product or service (Clement Addo et al. 2021). Research conducted by Clement Addo et al. (2021) have demonstrated a direct correlation between the level of consumers' engagement and their likelihood to purchase in the context of digital and network marketing. These studies demonstrate that engaged consumers would increase their intensity of participating in the exchange process and as a result, manifest more desirable outcomes such as better brand attitudes and engage in purchasing behavior. Hence, we proposed that:

H6. Consumers' engagement positively influences purchase intention.

3.4. Multigroup Analysis of Buyers and Non-buyers

As live-streaming shopping has become a popular marketing tool, consumers' purchase decisions have become essential. Yet, it is unlikely that all the consumers of live-streaming shopping will eventually become buyers. It is estimated that, on average, one in five consumers are engaged but leave without a purchase (Nielsen 2015). This trend is especially more prevalent During the COVID-19 pandemic, when people tightened their spending due to uncertainties in jobs, income, and health.

Despite this, many studies on live-streaming shopping have failed to specify any differences between buyers and non-buyers who went online to shop. Wongkitrungrueng and Assarut (2020) have highlighted this conspicuous gap and emphasized the need to compare the attitudes and responses between buyers and non-buyers. To illustrate, Qi et al. (2017) 's study on the purchase of local food found that price is a critical factor between the groups. Likewise, Tell and Cohen (2017) showed that non-buyers of long-term insurance policies have different perspectives on affordability. Taken together, non-buyers are an essential group of individuals and learning about their traits and attributes helps in having a holistic understanding of the entire consumer group. Hence, we proposed that:

H7a. There is a significant difference between financial bonds and trust for buyers and non-buyers.
H7b. There is a significant difference between social bonds and trust for buyers and non-buyers.
H7c. There is a significant difference between structural bonds and trust for buyers and non-buyers.
H7d. There is a significant difference between trust and consumers' engagement for buyers and non-buyers.
H7e. There is a significant difference between trust and purchase intention for buyers and non-buyers.
H7f. There is a significant difference between consumers' engagement and purchase intention for buyers and non-buyers.

4. Methodology

4.1. Sample

Using snowball sampling, the data were collected from Chinese college students between June and September 2022 who have experience visiting live-streaming shopping sessions. This sampling method is essential during the COVID-19 pandemic where face-to-face contact between researchers and respondents is highly discouraged (see Arafa et al. 2021, Garcia-Fernandez et al. 2021). As respondents were encouraged to disseminate the survey link to their social networks, the total number of individuals invited to respond was unknown. Hence, the response rate was unable to be determined. The sample size was determined using the power analytic technique advocated by Cohen (1992). Using the criterion of four predictors, 80% power, and an effect size of 0.15, a sample size of 85 is considered sufficient. With 507 valid responses, it has exceeded the requirement. Additionally, we leveraged the inverse square root method recommended by Kock and Hadaya (2018) where the recommended minimum response for PLS-SEM analysis is 160. Evidently, our number of responses exceeds the minimum sample size required, meaning analysis can proceed.

4.2. Questionnaire and Measures

The questionnaire was developed based on existing literature and measured using a seven-point Likert scale from 1 = not agree at all to 7 = absolutely agree. The items of financial, social, and structural bonds are adapted from Hsieh et al. (2005). Consumers' engagement was adapted from Wongkitrungrueng and Assarut (2020). Items for purchase intention and trust were adapted from Gefen et al. (2003). To distinguish between buyer and non-buyer, the respondents were also asked to indicate if they have purchased via live-streaming in the past twelve months. The questionnaire was first developed in English, translated to Chinese, and later back-translated to English. Subsequently, the questionnaire was designed through *Wenjuanxing,* a widely used online survey platform within China; while the generated survey link was forwarded to potential respondents via a local messaging tool, *WeChat*.

4.3. Common Method Bias

Due to the cross-sectional nature of the study design, we adopted recommendations by Podsakoff et al. (2003) to address common method bias. First, we pre-tested the instruments by removing all potential ambiguities. The respondents were assured of data confidentiality and anonymity throughout the data collection process. Additionally, we created a temporal separation by placing demographic questions between the predictor and the criterion questions. Finally, Harman's single-factor test showed that the variance explained by a single factor stood at 33%, demonstrating that the common method bias is not a severe issue in this study (Babin et al. 2016).

4.4. Control Variables

In this study, we control education level, gender, age, and monthly allowance as recommended by Tan et al. (2020). As shown in Table 4, none of the control variables significantly affected the endogenous variables.

4.5. Analysis

This study conducted PLS-SEM using SmartPLS. PLS-SEM's strength lies in its validation and predictive ability assessment (Hair et al. 2012). Hair et al. (2017b) emphasized that PLS-SEM yields better results in explaining the variance in dependent constructs while underscoring prediction goals in research. PLS-SEM supports a small sample size with no distributional assumption and is frequently adopted for theory testing due to its greater flexibility (Hair et al. 2017a). Cheah et al. (2019) demonstrated that PLS-SEM has an added edge in estimating the measurement model and is well-suited for more nuanced analysis such as multigroup analysis and predictive estimation. Following Hair et al. (2017a), this study adopted a two-phase approach to test the measurement model before examining the structural model.

5. Results

5.1. Respondents' Profile

Table 1 presents the demographic statistics of respondents. Among the 507 respondents, 76.7 percent were female, and 23.2 percent were male. Over 85 percent of respondents were in the age group of 18 to 23 years old. In terms of the current level of study, the majority of them were currently enrolled in bachelor's degree (74.2%), with the rest distributed among master's degree (17.4%), junior college or below (6.7%), and doctorate (1.8%). Relating to monthly allowances, most of the respondents received 2,500 RMB to 3,500 RMB (52.7%).

**** Insert Table 1 ***

5.2. Measurement Model

We assessed the convergent validity and discriminant validity in the measurement model. As shown in Table 2, most of the indicators' external loadings exceeded 0.708 across the three datasets. The indicators below the threshold were retained as the composite reliability, and the AVE of the respective constructs met the required threshold of 0.70 and 0.50, respectively (Hair et al. 2017a). As such, the model has achieved reliability and convergent validity. Using the Heterotrait–Monotrait ratio of correlations (HTMT), Table 2 showed that the three datasets had achieved discriminant validity as the values were lower than the threshold of $HTMT_{0.90}$

*** Insert Table 2 ***

5.3. Structural Model

As shown in Table 3, the variance inflation factor (VIF) scores were lesser than 3.3, signifying that multicollinearity is not a concern in this study. The results also revealed that financial bonds were not significantly associated with trust (H1: $\beta = 0.049$, p=0.108), whereas social bonds (H2: $\beta = 0.251$, $p < 0.001$) and structural bonds (H3: $\beta = 0.331$, p<0.001) were significant in influencing consumers' trust. Trust was found to have a positive effect on consumers' engagement (H4: $\beta = 0.581$, p<0.001) but not with purchase intention (H5: $\beta = 0.037$, p=0.150). Finally, consumers' engagement was significantly related to purchase intention (H6: $\beta = 0.761$, p<0.001). Overall, it can be summarized that H2, H3, H4, and H6 were supported, while H1 and H5 were not.

Overall, 30.3% of the variance in trust was explained by financial, social, and structural bonds. Trust accounted for 14.6% of the variance in consumers' engagement, whereas trust and consumers' engagement explained 55.4% of the variance in purchase intention. Following Cohen (1988) 's classification of effect sizes, consumers' engagement significantly produces R^2 for purchase intention. On the other hand, trust had a medium effect in producing R^2 for consumer engagement and purchase intention. Unlike financial bonds with negligible effects, social and structural bonds demonstrate medium effects. Trust had a negligible effect on purchase intention but a medium effect on producing the R^2 for consumer engagement. Lastly, the Q^2 values exceeded zero indicating that the model had predictive relevance.

Insert Table 3

5.4. Indirect and mediating effects

As Table 4 shows, there is no significant direct relationship between the direct relationship of financial bonds and consumers' engagement. Similarly, an insignificant direct relationship between the three relational bonds and purchase intention is seen. The results of the corresponding indirect relationships between financial bonds to consumers' engagement and between the three relational bonds with purchase intention, via trust, are insignificant. With both direct and indirect relationships insignificant, we conclude that trust, in these constructs, did not display any mediating effects (Zhao et al. 2010). On the other hand, we observe significant indirect relationships between the structural bonds and consumers' engagement (β=0.172, p<0.001), as well as social bonds and consumers. engagement (β=0.130, p<0.001). Likewise, the direct effects of structural and social bonds on consumers' engagement are both significant (STB: β=0.154,

p<0.05; SCB: β=0.190, p<0.001l. According to Zhao et al. (2010), trust displays a complementary mediating effect.

*** Insert Table 4 ***

5.5. Multigroup Analysis

Before conducting the multigroup analysis, measurement invariance was examined across the three datasets via the measurement invariance of the composites (MICOM) method (Sarstedt et al. 2011). Following Henseler et al. (2016), this model achieved configural invariance as both datasets have the same indicators, the same factor structure, and accorded the same data treatment (see Table 2 and Table 3). Following Henseler et al. (2016), compositional invariance has been achieved. Next, we assessed the composites' equality of mean values and variances across the different groups. From Table 5, our results show partial measurement invariance has been achieved, demonstrating its feasibility in performing the multigroup analysis. Table 6 shows a significant difference between the buyer and non-buyer groups among the nine paths for the relationship between trust and consumers' engagement (H7d. $\beta = 0.220$, $p<0.001$). Hence, we conclude that only H7d is supported, with the rest (H7a to H7c, H7e to H7f) are not supported.

*** Insert Table 5 ***

***Insert Table 6 ***

5. Discussion

Grounded upon the SOR framework, the results reveal that the quality of relational bonds, including structural and social aspects, play a crucial role in shaping consumers' trust towards the seller in the live-streaming shopping environment. Specifically, among the three relational bonds, our results demonstrate that social and structural bonds were positively associated with trust. However, financial bonds did not have any significant relationship with trust. While this finding contradicts existing work by Chang et al. (2019), it is not unexpected. This could be caused by the population group of this study – college students. When evaluating a purchase, college students are not easily persuaded by advertisements or financial discounts (Belleau et al. 2007). Instead, they look for authenticity in the brand. Generally, college students prefer engagement strategies that demonstrate a more personable approach. These perspectives can be seen in Bian and Forsythe (2012), where college students' social functional attitudes (i.e., self-expression, self-presentation, and self-monitoring) drive their behavior. Similarly, Shin et al. (2020) argued that one's emotional, functional, and epistemic values are essential reasons college students choose a particular product. This explanation also justifies why the results demonstrate that structural and social bonds are

instrumental in building trust toward live-streamers. Consistent with Hu and Chaudhry (2020) study, consumers rely heavily on their peers' and live-streamers' information and comments to compensate for the inability to feel the product physically.

While we expect trust to positively influence consumers' engagement and purchase intention, our results show otherwise. There is a significant relationship only with consumers' engagement but not purchase intention. There could be several reasons for this. First, consumers may not fully trust the live-streamer. Even if the platform or live-streamer claims to be trustworthy, consumers may not perceive them as such. This could be due to a lack of information or transparency about the seller, the product, or the payment process. Besides, if consumers are exposed to negative reviews or feedback about the live-streamer, the platform, or the product, it may decrease their trust in the seller and their intention to purchase. Likewise, consumers may have concerns about the security of their personal and financial information when making online purchases, which could decrease their trust and intention to purchase. Similar explanations can be said for our results, where trust plays a mediating role in the relationship between structural and social bonds to consumers' engagement, but not purchase intention.

Also, our results show that consumers' engagement influences purchasing intention. This finding aligns with literature-based evidence suggesting that as products become more commoditized, consumers' experience is an increasingly important way of differentiation (Clement Addo et al. 2021). This is unsurprising because the human element is central to live-streaming shopping's appeal. After all, live-streaming shopping's appeal enables brands to tell their stories and authentically showcase their products or services. The live-streamer behind the camera can directly interact with audiences via live comments. This fosters stronger connections between brands and consumers, making consumers feel like luminaries.

This paper further explored group differences between buyers and non-buyers of products in live-streaming shopping. The results reveal a significant difference in the relationship between trust and consumer engagement among the factors that drive trust, consumers' engagement, and purchasing intention. It was found that the influence of trust on consumers' engagement was more salient among buyers than non-buyers, indicating that engaging non-buyers would require above and beyond building trust. In this study, the predictors of trust involve relational bonds that focus primarily on the products and the live-streamer, thereby implying a possibility of other factors in closing the trust gap among the non-buyers. Concomitantly, we observed that there were no significant distinctions between other hypotheses. This could be because buyers and non-buyers have comparable preferences regarding live-streaming shopping.

6. Theoretical Contributions

Theoretically, this study contributes to the present literature in three ways. First, it contributes to the body of knowledge by being one of the first empirical studies to focus on college students who participated in e-commerce live-streaming. Many earlier works, such as Wongkitrungrueng and Assarut (2020), did not specify a particular group of consumers. Focusing on a particular group, such as college students, can provide valuable information about how different social influence mechanisms, including financial, social, and structural bonds, impact engagement, trust, and purchasing behavior in the context of e-commerce live-streaming. Additionally, our study can contribute to a broader understanding of consumer behavior, such as impulse buying, product evaluation, and post-purchase evaluation, by examining this new form of online commerce. Our findings build on previous research by investigating the emotional effects of different stimuli and addressing the need highlighted by Wongkitrungrueng and Assarut (2020) to consider various factors and explore the shopping behavior of specific consumer groups the context of live-streaming.

Second, this study enriches the literature by incorporating relational bonds, trust, consumers' engagement, and purchase intention into the live-streaming shopping environment. This study finds that among the different kinds of bonds, the more critical ones are structural and social bonds. At the same time, consumers' engagement is critical in manifesting the intention to purchase. By understanding the impact of relational bonds as a stimulus on consumer behavior, we advance our understanding of the S-O-R framework and develop more effective strategies for building and maintaining customer relationships. In this sense, the novelty of this study lies in examining the interplay of these variables toward purchase intention in live-streaming shopping, which is a unique contribution to marketing literature.

Finally, we extends prior research such as Clement Addo et al. (2021) by showing a clear difference in the importance of trust between buyers and non-buyers. Previous studies suggest that determinants influencing purchasing intention are common among consumer groups without distinction (Zhong et al. 2022, Lee and Chen 2021, Clement Addo et al. 2021). By examining the habits of non-buyers, we gain insight into why some people do not engage in online shopping. This could help develop a more nuanced understanding of the online consumer landscape and inform the design of effective marketing strategies that target different market segments.

7. Managerial Contributions

From the managerial perspective, this study provides insights into how live-streamers can attract and retain consumers. To enhance customer experience, live-streamers should carefully design atmospheric elements to create structural and social bonds that can influence customer responses. This includes helping consumers

visualize how they will be used in a real-store situation. Verbal and non-verbal explanations can also improve customer understanding of products. Live-streamers should gamify the experience by including incentives or having flash sales. They can also use personal stories to connect, build trust, as well as improve the consumers' perception of the brand by creating a sense of familiarity. These activities can create positive customer emotions, increasing trust in the products and in the live-streamers. To further enhance the customer experience and increase customer loyalty, live-streamers should collect and respond to customer feedback and concerns. This feedback can be used to improve the product range and service and respond to trends and customer needs.

9. Limitations and Future Research

Some limitations should be considered regarding the current findings. Although we focused the analysis on college students, we did not limit it to the type of products purchased. It is possible that the effect of the relational bonds on purchase intention would vary with the different product categories. Additionally, this study focuses mainly on Chinese students. Given the differences in cultural context, especially in Western communities, there could be variations in how the components of live-streaming shopping influence trust, consumers' engagement, and purchase intention. Besides, a cross-sectional study is unable to capture the change in respondents' perceptions over time. As the pandemic progresses into a recovery stage, it would be interesting to see if the attitude toward live-streaming shopping changes. At the same time, this study focuses on the three relational bonds and their direct effect on trust. There could be other factors that future researchers could consider in establishing trust, such as perspectives on green-based consumerism (Khan et al. 2022d, Khan et al. 2022b). Future researchers could be further examined by operationalizing trust as a multidimensional construct. According to Hsu et al. (2014), trust can be classified into trust in the website, the vendor, the group members, and the auction initiator.

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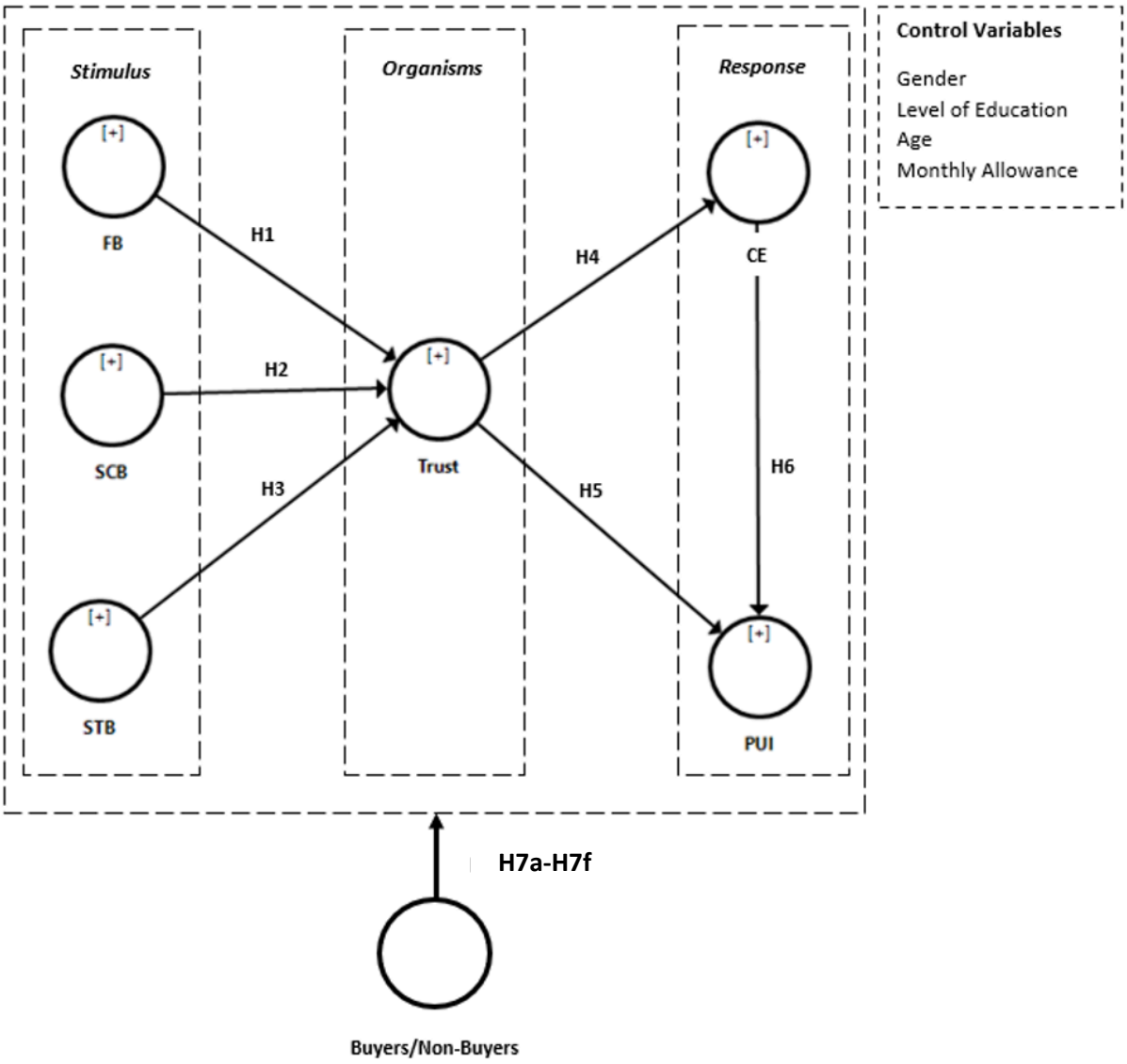
Figure 1. Conceptual Framework



Source: Authors' own creation

Note: (1) CE: consumers engagement, FB: Financial bonds, PUI: Purchase intention, SCB: Social bonds, STB: Structural bonds

Table 1. Respondents' Profile

Demographic Variable	Category	Frequency (n=507)	Percentage	Cumulative Percentage
Gender	Male	118	23.20	23.20
	Female	389	76.70	100.00
Education level				
	Junior college or below	34	6.71	6.71
	Bachelor	376	74.16	80.87
	Master	88	17.36	98.22
	Doctorate	9	1.80	100.00
Age	Below 18	2	0.39	0.39
	18-20	277	54.64	55.03
	21-23	154	30.37	85.40
	24-26	39	7.69	93.10
	Above 27	35	6.90	100.00
Monthly allowance (RMB)	Below 1500	89	17.55	17.55
	1501-2500	267	52.66	70.22
	2501-3500	77	15.19	85.40
	3501-4500	26	5.13	90.53
	4501-5500	20	3.94	94.48
	Above 5500	28	5.52	100.00
Status of respondent	Buyer	276	54.40	54.40
	Non-Buyer	231	45.60	100.00

Source: Authors' own creation

Table 2. Measurement model

	Convergent Validity			Discriminant Validity					
Complete (n=507)	FL	CR	AVE	CE	FB	PUI	SCB	STB	Trust
CE	0.661-0.852	0.900	0.564						
FB	0.744-0.854	0.900	0.644	0.227					
PUI	0.862-0.933	0.929	0.814	0.879	0.19				
SCB	0.670-0.806	0.826	0.545	0.532	0.502	0.442			
STB	0.747-0.823	0.882	0.651	0.502	0.454	0.365	0.732		
Trust	0.691-0.947	0.939	0.688	0.575	0.302	0.475	0.561	0.567	
Buyer (n=276)									
CE	0.639-0.664	0.884	0.523						
FB	0.738-0.871	0.901	0.647	0.315					
PUI	0.866-0.908	0.927	0.809	0.892	0.29				
SCB	0.675-0.798	0.831	0.554	0.645	0.473	0.553			
STB	0.715-0.862	0.875	0.638	0.604	0.452	0.456	0.776		
Trust	0.672-0.954	0.945	0.713	0.672	0.305	0.568	0.546	0.566	
Non-buyer (n=231)									
CE	0.648-0.895	0.912	0.598						
FB	0.720-0.817	0.888	0.614	0.176					
PUI	0.830-0.940	0.923	0.800	0.833	0.095				
SCB	0.628-0.827	0.817	0.531	0.407	0.56	0.292			
STB	0.776-0.822	0.887	0.662	0.343	0.425	0.193	0.678		
Trust	0.657-0.934	0.928	0.651	0.423	0.268	0.300	0.588	0.556	

Source: Authors' own creation

Note: (1) CE: consumers' engagement, FB: Financial bonds, PUI: Purchase intention, SCB: Social bonds, STB: Structural bonds, TR: Trust; FL: Factor loadings; CR: Composite reliability; AVE: Average variance extracted (2) HTMT achieve at $HTMT_{0.90}$

Table 3. Structural Model

	Hypotheses	Std Beta	Std Error	*t*-value	5.00%	95.00%	VIF	f^2	R^2	Q^2
H1	FB -> TR	0.049	0.040	1.235$^{(NS)}$	-0.018	0.115	1.30	0.000	0.303	0.198
H2	SCB -> TR	0.251	0.050	4.996***	0.167	0.332	1.55	0.085		
H3	STB -> TR	0.331	0.047	7.095***	0.252	0.407	1.46	0.103		
H4	TR -> CE	0.518	0.039	13.303***	0.451	0.578	1.00	0.171	0.146	0.149
H5	TR -> PUI	0.037	0.036	1.038$^{(NS)}$	-0.02	0.097	1.17	0.000	0.554	0.490
H6	CE -> PUI	0.761	0.027	28.485***	0.713	0.801	1.17	1.076		
	Control Variables									
	Age -> PUI	-0.01	0.034	0.293$^{(NS)}$						
	Allowance -> PUI	-0.01	0.029	0.347$^{(NS)}$						
	Education -> PUI	-0.037	0.031	1.213$^{(NS)}$						
	Gender -> PUI	0.031	0.032	0.966$^{(NS)}$						

Source: Authors' own creation

Note: (1) CE: consumers engagement, FB: Financial bonds, PUI: Purchase intention, SCB: Social bonds, STB: Structural bonds, TR: Trust; (2) *p < 0.1, **p < 0.05, ***p < 0.001, NS: Not significant

Table 4. Mediation Analysis

Direct effect							*Indirect effect*					
Hypotheses	Std Beta	Std Error	t-value	P-values	5.00%	95.00%	Hypotheses	Std Beta	Std Error	t-value	5.00%	95.00%
SCB -> CE	0.190	0.051	3.708***	0.000	0.100	0.269	SCB -> Trust -> CE	0.130	0.029	4.490***	0.085	0.179
STB -> CE	0.154	0.053	2.906**	0.002	0.069	0.245	STB -> Trust -> CE	0.172	0.030	5.765***	0.123	0.222
FB -> CE	-0.052	0.040	1.313$^{(NS)}$	0.095	-0.118	0.011	FB -> Trust -> CE	0.025	0.021	1.213$^{(NS)}$	-0.010	0.058
SCB -> PUI	0.041	0.037	1.114$^{(NS)}$	0.133	-0.021	0.099	SCB -> Trust -> PUI	0.009	0.010	0.953$^{(NS)}$	-0.004	0.028
STB -> PUI	-0.069	0.036	1.914$^{(NS)}$	0.028	-0.130	-0.011	STB -> Trust -> PUI	0.012	0.012	1.021$^{(NS)}$	-0.006	0.033
FB -> PUI	0.029	0.037	0.799$^{(NS)}$	0.212	-0.031	0.089	FB -> Trust -> PUI	0.002	0.003	0.664$^{(NS)}$	-0.001	0.009

Source: Authors' own creation

Note: (1) CE: consumers engagement, FB: Financial bonds, PUI: Purchase intention, SCB: Social bonds, STB: Structural bonds, TR: Trust; (2) *p < 0.1, **p < 0.05, ***p < 0.001, NS: Not significant

Table 5. MICOM Analysis

Composite	C value (=1)	5% quartile of the empirical distribution of C	*p*-value	Composite Invariance
CE	0.999	0.998	0.201	Yes
FB	0.992	0.987	0.181	Yes
PUI	1.000	1.000	0.157	Yes
SCB	0.999	0.985	0.929	Yes
STB	1.000	0.995	0.980	Yes
Trust	1.000	0.999	0.485	Yes
	Difference of the composite mean value (=0)	95% confidence interval	*p*-value	Equal means values
CE	0.552	[-0.174; 0.161]	0.000	No
FB	0.401	[-0.189; 0.178]	0.000	No
PUI	0.510	[-0.180; 0.166]	0.000	No
SCB	0.045	[-0.180; 0.184]	0.636	Yes
STB	0.251	[-0.181; 0.172]	0.004	No
Trust	0.232	[-0.177; 0.160]	0.012	No
	Logarithm of the composite's variance ratio (=0)	95% confidence interval	*p*-value	Equal means values
CE	0.080	[-0.242; 0.258]	0.554	Yes
FB	-0.105	[-0.304; 0.287]	0.539	Yes
PUI	0.202	[-0.266; 0.259]	0.165	Yes
SCB	0.272	[-0.284; 0.285]	0.063	Yes
STB	0.047	[-0.257; 0.248]	0.741	Yes
Trust	0.249	[-0.306; 0.289]	0.114	Yes

Source: Authors' own creation

Note: (1) CE: consumers engagement, FB: Financial bonds, PUI: Purchase intention, SCB: Social bonds, STB: Structural bonds, TR: Trust

Table 6. Multigroup Analysis

		Std Beta (Buyer)	Std Beta (Non-Buyer)	t-Value (Buyer)	t-Value (Non-Buyer)	Confidence Interval (Buyer)	Confidence Interval (Non-Buyer)	Std Beta Difference	P-value Henseler MGA	Supported
H7a	FB -> TR	0.067	0.004	1.283$^{(NS)}$	0.065$^{(NS)}$	[-0.024; 0.146]	[-0.100;0.094]	0.063	0.214	Not supported
H7b	SCB -> TR	0.228	0.303	3.493***	3.858***	[0.116; 0.330]	[0.169;0.427]	-0.075	0.232	Not supported
H7c	STB -> TR	0.325	0.323	4.831***	4.836***	[0.216; 0.437]	[0.215;0.434]	0.002	0.493	Not supported
H7d	TR -> CE	0.602	0.382	12.94***	5.434***	[0.515; 0.671]	[0.257;0.489]	0.220	0.004	Supported
H7e	TR -> PUI	0.072	-0.013	1.384$^{(NS)}$	0.262 $^{(NS)}$	[-0.012; 0.161]	[-0.099;0.071]	0.085	0.121	Not supported
H7f	CE -> PUI	0.738	0.749	17.464***	19.836***	[0.661; 0.799]	[0.678; 0.804]	-0.011	0.422	Not supported

Source: Authors' own creation

Note: (1) CE: consumers engagement, FB: Financial bonds, PUI: Purchase intention, SCB: Social bonds, STB: Structural bonds, TR: Trust (2) *p < 0.1, **p < 0.05, ***p < 0.001, NS: Not significant