

# The Influences of Live Streaming Affordance in Cross-Border E-Commerce Platforms: An Information Transparency Perspective

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## ABSTRACT

Despite the promise of cross-border e-commerce, attracting consumers is still a worldwide challenge. Many cross-border e-commerce platforms have responded to the challenges by embracing innovative tools like live streaming. However, there has been limited understanding of the unique nature of live streaming and its empirical influence. Taking an affordance view of live streaming, this study defines affordance of live streaming as the capacities provided by live streaming and examines how affordance of live streaming affect consumers' purchase intention in the cross-border e-commerce context based on the information transparency perspective. Results show that although live streaming does not directly affect consumers' cross-border purchase intention, it can increase consumers' purchase intention through increasing perceived information transparency. In addition, affordance of live streaming can further moderate the relationship between different types of information transparency and consumers' cross-border purchase intention. The findings provide a much-needed contribution to academia and business.

## KEYWORDS

Affordance, Cross-Border E-Commerce, Information Transparency, Live Streaming, Purchase Intention

## INTRODUCTION

Despite the disruption of the global trade environment, cross-border e-commerce has become an important driver of global trade. Through cross-border e-commerce platforms such as Amazon and Alibaba's Tmall Global, consumers can easily access an increasing variety of worldwide goods at lower costs and in less time (Giuffrida et al., 2017). According to recent PPRO research, the value of worldwide cross-border e-commerce reached \$412 billion at the end of 2018, which still leaves substantial room for further expansion (PPRO 2019). The growth of cross-border e-commerce has provided promising prospects for cross-border e-commerce platforms to build business strategies.

Although cross-border e-commerce platforms provide significant convenience and low costs for consumers all over the world, how to motivate and attract consumers is still a worldwide challenge. According to IPC (2019), online platforms in the USA attracted 26% of Chinese consumers to make

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the last cross-border purchase in 2017; the rate in 2018 was down to 14%, but it fortunately grew again in 2019. In China, a number of cross-border e-commerce platforms have failed due the inability to secure a loyal customer base (Mou et al., 2019a). In some European countries, the repurchase rate of cross-border e-commerce platforms is only 10.8% (Kim et al. 2017). There are still barriers that deter consumers from taking full advantage of cross-border e-commerce. For instance, a lack of familiarity and trust in the seller, crossing language barriers to access product information, and cross-border transactional risk (e.g., confiscation or delivery risk) raise uncertainty for consumers (e.g., Bin et al., 2003; Valarezo et al., 2018). These barriers are forcing platforms to seek more creative and flexible means to attract and satisfy consumers compared with traditional domestic e-commerce.

Many cross-border e-commerce platforms have responded to the challenges by embracing innovative tools such as live streaming. *Live streaming* in cross-border e-commerce platforms enables real-time online broadcasts for seller-consumer communication. Live streaming allows streamers (sellers) to present detailed and rich goods information (e.g., the produce or procurement process, direction for use) and communicate with potential consumers in real time (Hu et al., 2017). Correspondingly, consumers can obtain abundant information, prompt response (through the bullet screen), and even personalized services. Considering these benefits, live streaming is believed to have tremendous impacts on consumers' online purchase behaviors, especially in the cross-border e-commerce context (Chen et al., 2017). Alibaba's Tmall Global claimed that, at the end of the third quarter in 2019, their gross merchandise value generated through live streaming reached RMB 470 million, up from RMB 62 million a year ago (Wang, 2019).

However, there has been a limited understanding of the unique nature of live streaming and its empirical influence in the cross-border e-commerce context. On the one hand, the existing literature on live streaming purchases primarily focuses on users' participation in live streaming and mainly investigates why users engage in live streaming (e.g., Ho & Yang, 2015; Lu et al., 2018; Cai & Wohn, 2019). On the other hand, some early evidence shows that consumers' live streaming engagement is highly related to their purchase behaviors in domestic e-commerce (Sun et al., 2019; Wongkitrungrueng & Assarut, 2018), but few of them study the underlying mechanism between live streaming and consumers' purchase behavior. It is still unclear whether and how live streaming impacts consumers' purchase intention in cross-border e-commerce platforms. Therefore, it is quite meaningful to investigate how consumers' cross-border online purchase intention can be affected by live streaming.

To answer the above research question, this study attempts to investigate the specific influence mechanism of live streaming on consumers' cross-border online purchase intention through an information transparency perspective. The theoretical lens of information transparency delineates consumers' information needs in the purchasing process in terms of product, seller, and transactional processes and provides a guide for us to understand how the live streaming affordance affects the information inconsistency between platforms and consumers (Zhou et al., 2018). Considering the interaction nature of live streaming (Sun et al., 2019), we take an affordance view of live streaming. We define *affordance of live streaming* as the capacities provided by live streaming in terms of visibility, shopping guidance and trading. A theoretical model clarifying the influence of live streaming on cross-border purchase intention regarding information transparency was proposed, and a survey was conducted to verify the model. The results show that live streaming alone would not directly affect consumers' cross-border online purchase intention, but it can affect consumers' purchase intention by increasing perceived information transparency. In addition, affordance of live streaming can further moderate the relationship between different types of information transparency and consumers' cross-border purchase intention.

The findings of this research provide several contributions to the existing literature. Our research offers three important insights into the existing literature. First, we deepen our understanding of consumers' cross-border online purchase behavior by taking the influence of live streaming into account. In particular, the results show that live streaming plays multiple roles in affecting consumers'

cross-border online purchase decisions. Affordance of live streaming can not only positively affect consumers' cross-border online purchase intention by increasing the three types of information transparency but also affect consumers' cross-border online purchase intention by influencing its relationship with the three types of information transparency. Therefore, live streaming is indeed helpful to overcome the cross-border barriers that deter consumers from taking full advantage of cross-border e-commerce. Second, through the information transparency perspective, our study unveils the underlying mechanism of consumers' cross-border online purchase behavior regarding the influence of live streaming affordance, which is lacking even in the domestic e-commerce context. Our results show that in the cross-border e-commerce context, live streaming alone is not able to significantly affect consumer behavior. However, it can affect consumers' cross-border online purchase decisions through information transparency or interactions with information transparency. Third, by taking an affordance view of live streaming, our study enables researchers to simultaneously study social commerce features of live streaming and consumers' perception of live streaming, which provides a theoretical basis for future studies to understand the multiple roles of live streaming. Finally, we contribute to the application of the typology of information transparency to the study of cross-border e-commerce by highlighting the different moderating effects of live streaming affordance on three types of information transparency. Considering that this new perspective has not been used, the present study contributes to the existing literature on the alternative understanding of live streaming and information transparency. This research also provides practical suggestions for cross-border e-commerce platforms and sellers to better leverage live streaming to attract consumers and improve performance.

## LITERATURE REVIEW

### Cross-Border E-Commerce

Due to the rapid proliferation and perfection of global logistics networks and Internet infrastructure, cross-border e-commerce is promptly gaining huge momentum (Giuffrida et al., 2017). Cross-border e-commerce is the transactional process by which a consumer buys products from a foreign country through online platforms. A consumer can use cross-border e-commerce platforms to choose and buy products sold in a foreign country (Mou et al., 2019b), i.e., the international commodity that is produced and sold in a foreign market but can be purchased through cross-border e-commerce platforms. The border and geographic boundaries between consumers and products can be eroded by cross-border e-commerce.

In general, cross-border e-commerce is similar to traditional domestic e-commerce. Both of them are the process in which a consumer and a seller conduct a transaction involving electronic payment and logistics via an e-commerce platform. Different from domestic e-commerce, cross-border e-commerce can bring potential benefits for consumers to purchase high-quality products at lower cost from foreign markets. In addition, involving multiple parties from different borders, the interactions among consumers, sellers, and platforms are more complex in the cross-border e-commerce context (Guo et al., 2018). Given that buyers and sellers/products are often from different countries and that transactions cross national borders and consumer areas, there may be greater uncertainties in terms of products, sellers, and transactions for consumers compared to the domestic context (Giuffrida et al., 2017; Mou et al., 2020). Therefore, there may be a lack of transparency between consumers and products, sellers, and/or transactional processes (Zhou et al., 2018). This could narrow the markets and could detract consumers from cross-border e-commerce.

Given the coexistence of promise and challenge of cross-border e-commerce, it has drawn much attention from researchers. Existing research concerns logistics delivery services (e.g., Hsiao et al., 2017), trade costs and distance effects (e.g., Kim et al., 2017), consumers' cognition and perception (e.g., Mou et al., 2019a; Mou et al., 2019b; Zhu et al., 2019), and sellers' participation (Guo et al., 2018; Cui et al., 2019). Some recent findings indicate that live streaming could help consumers

develop cognition of the products, the sellers, and the whole transactional processes (Cai et al., 2019). However, empirical understanding of the influence of live streaming on consumer cross-border online purchase behavior is lacking. Thus, this study aims to examine how consumers' purchase intention is influenced by live streaming in cross-border e-commerce platforms.

## Live Streaming

Live streaming is a communication technology that allows users to instantaneously send images and sounds to other locations and perceive presence (Chen & Lin, 2018). Live streaming has become increasingly popular as it creates an intimate interaction environment for users. Research on live streaming is spurring in the areas of online games, esports, and online education (e.g., Hu et al. 2017; Payne et al., 2017). Researchers, on the one hand, focus on users' motivations for live streaming engagement, such as interface design and social interactions with live streaming (e.g., Hamilton et al., 2014; Yu et al., 2018). On the other hand, they also pay attention to the effects of live streaming on customer behaviors, for instance, learning performance (Payne et al., 2017). Given the delightful performance, live streaming has been adopted by many e-commerce platforms to boost sales (Sun et al., 2019).

### *Live Streaming and E-Commerce*

Currently, live streaming shopping has changed traditional e-commerce in several ways (Sun et al., 2019). First, live streaming allows sellers to vividly demonstrate their products in real-time videos, while in traditional e-commerce, products are usually displayed by pictures and text (Wongkitrungrueng & Assarut, 2018). Second, live streaming allows consumers to ask questions related to the products, the sellers, and the transactional processes through bullet screens, which will achieve prompt responses from the seller during the live stream (Sun et al., 2019). Live streaming is more effective and efficient than the traditional way of contacting the seller for information. Furthermore, the seller can provide personalized services and guidance to consumers in their lives (Chen et al., 2017).

Researchers have made some primary investigations with live streaming e-commerce. There are two research streams. One focuses on users' participation in live streaming e-commerce and mainly investigates why users engage in live streaming. For instance, Zhao et al. (2018) studied the factors determining streamers' broadcasting intention from the perspective of intrinsic and extrinsic motivation. Other researchers examined the impact of design features (e.g., gift-related features) and customers' perceptions of live streaming on users' participation in live streaming e-commerce (Ho & Yang, 2015).

Another research stream concerns the influences of consumers' live streaming engagement and shows some early evidence that live streaming is highly related to consumers' purchase behaviors in domestic e-commerce (Sun et al., 2019; Wongkitrungrueng & Assarut, 2018). For instance, by surveying 504 consumers, Sun et al. (2019) found that live streaming engagement mediates the relationship between IT affordance and consumers' purchase intention. However, these studies were conducted in the domestic e-commerce context. In addition, the specific mechanism between live streaming and consumers' purchase behavior has not been explored.

### *Live Streaming and Cross-Border E-Commerce*

The interactions among consumers, sellers, and platforms in cross-border e-commerce are slightly different from those in the traditional domestic e-commerce context. Spatial and temporal separation between consumers and sellers could raise the issue of a lack of transparency in cross-border online purchases, thus affecting consumers' decisions (Zhou et al., 2018).

Live streaming could help consumers develop cognition of the sellers, the products, and the whole transactional processes in the process of cross-border shopping (Cai et al., 2019). First, desirable live streaming can bridge the gaps and shorten the distance between consumers and product/sellers from overseas markets (Wongkitrungrueng & Assarut, 2018). Through live streaming, the

sellers could promptly answer consumers' questions with vivid presentation, which confirmed the authenticity of the international products and sellers as well. Second, product presentation in videos helps consumers better understand international products and functions as well as how to use them (Zhang et al., 2019). Therefore, appropriate live streaming could offset the negative effects due to a lack of transparency, thus generating positive outcomes. However, understanding of the empirical influence of live streaming in the cross-border e-commerce context is limited. Given that the existing literature on traditional domestic e-commerce does not necessarily apply to the cross-border context, it is meaningful to further investigate how live streaming affects consumers' cross-border purchase behaviors, especially through the information transparency perspective.

### *Affordance View of Live Streaming*

Previous studies usually assess live streaming using the intention or frequency of watching live streaming (e.g., Cai et al., 2019; Lu et al., 2018). The above conceptualization largely ignores the interactive nature of live streaming. In this research, considering that live streaming entails and affords rich interactions among consumers, sellers, and platforms, we take an affordance view of live streaming (Sun et al. 2019).

The concept of "affordance" originates from ecological psychology and is widely applied in the information systems (IS) literature. According to the original definition proposed by Gibson (1978), an affordance is what is offered, provided, or furnished to someone or something by an object. In IS research, it is further developed as "the possibilities for goal-oriented action afforded to specified user groups by technical objects" (Strong et al., 2014). In other words, affordance could arise from the relation between an IT artifact (e.g., live streaming in this study) and a goal-oriented actor or actors (Bygstad et al., 2016).

In the cross-border e-commerce context, affordance derives from the relationship between customers and IT features (Dong & Wang, 2018). When consumers engage in live streaming of cross-border e-commerce platforms, they can perceive and use the features of live streaming, which could affect their behaviors (Sun et al., 2019). Thus, this study regards affordance of live streaming as the capacities provided by live streaming and then explains how live streaming influences consumers' cross-border online purchase behaviors based on the affordance perspective.

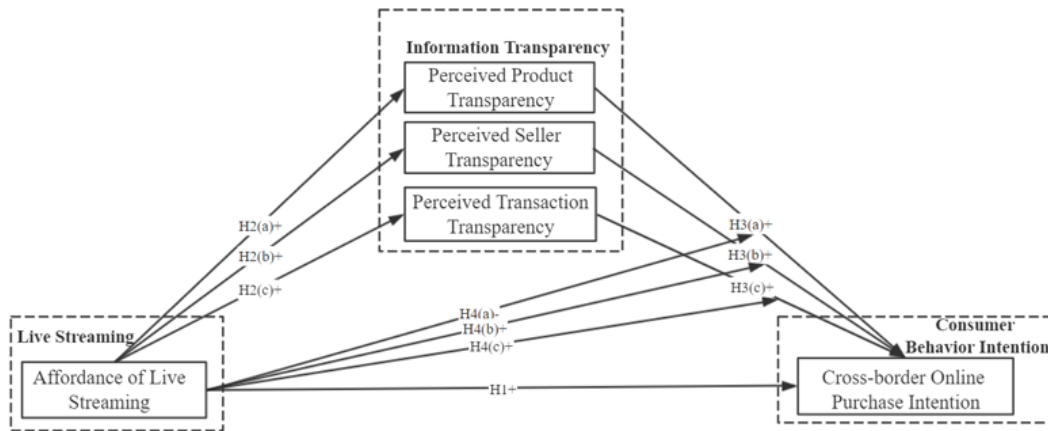
### **Information Transparency**

In the context of e-commerce, information transparency occurs when consumers obtain adequate information and the information can be easily understood (Zhou et al., 2018). The importance of information transparency has been widely studied by prior IS literature. Information transparency in terms of sellers, products, and transactions could satisfy consumers' information needs and bridge the distance between consumers and sellers in the purchase decision (Awad & Krishnan, 2006; Granados et al., 2010). A lack of information transparency could even result in the abandonment of online purchases. Considering that live streaming could offset the negative influence of a lack of information transparency, it is also important to investigate the moderating effect of live streaming on the relationship between information transparency and consumers' cross-border online purchase intention.

To understand the relationship between live streaming and information transparency in affecting consumers' cross-border online purchase intention, we draw on the typology of information transparency proposed by Zhou et al. (2018). Although the typology was developed in the context of the domestic e-commerce context, it reflects the spatial and temporal separations between consumers, products, and sellers and is thus suitable for this study.

According to the typology, consumers' perceived transparency can be captured by three dimensions, i.e., perceived product transparency, perceived seller transparency, and perceived transaction transparency. *Perceived product transparency* refers to the extent to which a consumer can easily access and understand the information needed to estimate the product and its performance.

Figure 1. The research model



*Perceived seller transparency* is the extent to which a consumer could easily access and understand the information needed to estimate the seller and his performance. *Perceived transaction transparency* is the extent to which a consumer could easily access and understand the information needed to estimate the reliability of the transactional process.

## HYPOTHESES DEVELOPMENT

Our research model is depicted in Figure 1. The model uncovers the underlying mechanisms of how affordance of live streaming affects consumers' cross-border purchase intention. It shows that affordance of live streaming can affect consumers' purchase intention through different types of information transparency. In addition, live streaming allows consumers to perceive information transparency in a more visualized, concrete, and plentiful way, thereby possibly intertwisting with the three different types of information transparency in influencing consumers' cross-border purchase intention. In other words, the effect of information transparency on consumers' purchase intention can be moderated by affordance of live streaming. We control for demographic information, frequency of purchase, frequency of watching live streaming, perceived uncertainty, and platform satisfaction.

### Affordance of Live Streaming and Cross-Border Online Purchase Intention

The affordance of live streaming represents the capacities provided by live streaming, such as visibility, shopping guidance, and trading (Dong & Wang, 2018; Sun et al., 2019). It can serve as a useful medium to attract consumers' interest and provide consumers needed information, especially in the cross-border context, in which consumers have great uncertainties about the products, the sellers, and the transactional processes. First, the vivid product presentation in live streaming transmits detailed information to consumers, addressing both the spatial and psychological distance between consumers and sellers from different borders and areas (Zhang et al. 2019). Second, live streaming affords consumers amicable guidance towards the products and how to use the products (Sun et al., 2019). Third, the affordance of live streaming through direct and real-time communication further warms consumers and offsets consumers' uncertainty towards the cross-border trading process (Wongkitrungrueng & Assarut, 2018). Together, affordance of live streaming can address consumers' concerns towards cross-border products and their sellers and transactional processes when shopping in cross-border e-commerce platforms. Therefore, affordance of live streaming could increase consumers' purchase intention in cross-border e-commerce platforms.

**H1:** Affordance of live streaming increases consumers' purchase intention in cross-border e-commerce platforms.

### **Affordance of Live Streaming and Perceived Information Transparency**

The affordance of live streaming can display product information to help consumers fully understand the products and whether the products can satisfy their needs (Mou et al., 2019b). In cross-border e-commerce, consumers usually do not have enough knowledge about international products before purchasing and thus cannot determine whether it is worth buying. In addition, consumers may worry about the source of supply. Product information pertaining to product quality and function afforded by live streaming facilitates consumers' understanding of the products and dispels their concerns about the authenticity of the products. For instance, sellers can exhibit the products with its quality certification and even demonstrate how to operate the products in the video, which mitigates consumers' concerns and makes the products more transparent to consumers. Thus, affordance of live streaming contributes to consumers' perceived product transparency in cross-border e-commerce platforms.

**H2(a):** Affordance of live streaming increases consumers' perceived product transparency in cross-border e-commerce platforms.

The affordance of live streaming can enrich consumers' knowledge in terms of the seller. In cross-border e-commerce, consumers not only fear that sellers are fraudsters but also worry the financial and privacy risks caused by inadequate after-sale support from sellers, all of which can reduce their purchase intention (Mou et al., 2019a). Thus, the information pertaining to the sellers is needed for the consumers' purchase decision. Through live streaming, consumers can assess the reliability and performance of sellers through vivid and authentic videos, leading to perceived seller transparency. In addition, live streaming affords the opportunity for consumers to directly communicate with the sellers and ask questions to further understand the sellers. For example, the sellers' demonstrations in terms of their locations, their own online store, or their relationships with the source of supply in the live could help the consumers get to know them better and even build confidence in them. Correspondingly, the link between consumers and sellers would be strengthened. Thus, affordance of live streaming significantly contributes to consumers' perceived seller transparency in cross-border e-commerce platforms.

**H2(b):** Affordance of live streaming increases consumers' perceived seller transparency in cross-border e-commerce platforms.

Similarly, consumers may perceive a high level of transaction transparency when they can easily access and clearly understand detailed transactional information provided by live streaming. In cross-border e-commerce, the consumers' perceived transparency of the transactional processes, ranging from placing an order and paying for the product to ordering delivery services, is also important to their purchase decision (Fang et al., 2016). Through live streaming, sellers assist consumers in understanding the purchase process and answer questions related to transactions in real time, including placing order, confirming order placement, accepting payment, providing secure payment, informing the delivery schedule, and tracking the delivery status of the order. Thus, transactional processes can become more transparent to consumers in their lives (Lightner, 2004). For instance, trading information provided by sellers in live streaming can mitigate information asymmetry and contribute to consumers' perceived transactional transparency. In addition, information on privacy and security policies afforded by live streaming can also increase consumers' perceived transaction transparency. As a result, affordance of live streaming increases consumers' perceived transaction transparency.

**H2(c):** Affordance of live streaming increases consumers' perceived transaction transparency in cross-border e-commerce platforms.

### **Perceived Information Transparency and Cross-Border Online Purchase Intention**

It is believed that consumers are more likely to purchase a product if they perceive a high level of information transparency (Zhou et al., 2018). Prior studies suggest that information transparency in terms of the product, the seller, and the transactional process enables “more effective and efficient matching of buyer and sellers” (Zhu, 2002). For instance, if consumers have enough and clear product, seller, and transactional information and know the product well, they can spend less effort and time selecting the best to fit their needs and enjoy the greatest benefits from the product. As a result, the perceived transparency with regard to the product, the seller, and the transactional process could finally facilitate consumers' purchase decisions. In other words, perceived product transparency, perceived seller transparency, and perceived transaction transparency can increase consumers' purchase intention in cross-border e-commerce platforms.

**H3(a):** Perceived product transparency increases consumers' purchase intention in cross-border e-commerce platforms.

**H3(b):** Perceived seller transparency increases consumers' purchase intention in cross-border e-commerce platforms.

**H3(c):** Perceived transaction transparency increases consumers' purchase intention in cross-border e-commerce platforms.

### **Moderating Effects of Affordance of Live Streaming**

In addition to the direct and indirect influences on consumers' purchase intention, the effects of information transparency might be affected by the cues provided by live streaming (de Bérail, et al., 2019). The affordance of live streaming may influence how consumers perceive these types of information transparency, thus affecting how consumers leverage information transparency to make purchase decisions (Sun et al., 2019; Zhang et al., 2019). In other words, affordance of live streaming can act as a moderator to influence the relationship between information transparency and consumers' purchase intention.

Although perceived product transparency, perceived seller transparency, and perceived transaction transparency could benefit consumers and facilitate their purchase decision, they might have different characteristics in the research context. Given that product information is a major tool used by sellers to promote consumers' purchase intention (Khare & Rakesh, 2011), especially in the cross-border context in which consumers may not be familiar with the products due to the “border/distance” factors, the platforms usually provide various features, including appealing product description, price, images, or videos, to present the product information and increase consumers' understanding of the products (Zhu et al., 2019; Mou et al., 2019a). As a result, the perceived product transparency by consumers is more likely to be higher than the other two types of transparency (e.g., Zhou et al., 2018). This could give rise to different moderating effects by affordance of live streaming on the three different types of information transparency.

Prior studies suggested that in the cross-border e-commerce context, affordance of live streaming can positively influence the relationship between perceived seller and transaction transparency and consumers' purchase intention (Sun et al., 2019; Zhou et al., 2018). In the cross-border e-commerce context, live streaming allows consumers to perceive information transparency in a more visualized, concrete, and plentiful way. This could mitigate the information asymmetry caused by the “border/distance” factors and increase the transparency of the seller and the transactional process (Sun et al., 2019). As a consequence, the seller and transactional process could become clearer and more understandable for consumers to make purchase decisions. Thus, the influences of perceived seller



transparency and perceived transaction transparency on consumers' purchase intention could be amplified by the affordance of live streaming.

Although the affordance of live streaming can also increase product transparency to some extent, it negatively influences the relationship between perceived product transparency and consumers' purchase intention in the research context. This is because a high extent of affordance of live streaming is likely to result in product information overload for consumers' purchase decision making (Schneider 1987). Consumers could feel confused when making sense of the product information for purchase decisions, which is likely to undermine the positive influence of product transparency on consumers' purchase intention. As a result, the relationship between perceived product transparency and consumers' purchase intention could be negatively affected by the affordance of live streaming.

- H4(a):** Affordance of live streaming negatively influences the relationship between perceived product transparency and consumers' purchase intention in cross-border e-commerce platforms under the full model.
- H4(b):** Affordance of live streaming positively influences the relationship between perceived seller transparency and consumers' purchase intention in cross-border e-commerce platforms under the full model.
- H4(c):** Affordance of live streaming positively influences the relationship between perceived transaction transparency and consumers' purchase intention in cross-border e-commerce platforms under the full model.

## METHODOLOGY

To test the proposed research model, this research employs the survey method. The research concentrates on cross-border e-commerce platforms with live streaming functions. It specifically considers Taobao's Global Shopping, which is one of the largest cross-border e-commerce platforms that has adopted live streaming in China. The platform was founded in 2007 by Taobao and is the first cross-border shopping portal in China. The sellers of the platform are overseas Chinese, and they provide consumers with a variety of commodities that are produced and sold in foreign markets. According to a recent IPC survey involving 35,737 consumers across 41 countries, over 39% of global cross-border online purchases are from China. Thus, it is important and meaningful to study consumer behavior in China. Although the selection of a single case site introduces limitations for generalizability, the selected site was considered appropriate because it was the most popular and largest cross-border platform in China. Given its scale and cross-border reach, it provides a meaningful context for this study. Choosing a single platform helps control the effects of platform-level variables.

To ensure reliability and validity, measures for each variable were either adapted from previously validated questions of self-development based on contextual and literature studies. The independent variable, i.e., affordance of live streaming, was self-developed as a formative construct that incorporates major information afforded by live streaming for consumers. Formative measures tend to be more specific and actionable. Through operationalizing affordance of live streaming as a formative measurement, we can model the constructs grounded on the investigated context by bringing together different specific facets of the phenomena we are interested in, i.e., live streaming (Cenfetelli & Bassellier 2009). We identified five items based on the existing literature (Dong & Wang et al., 2018; Sun et al., 2019) and user experience of the focal cross-border platforms. The five functions manifest visibility, shopping guidance, and trading process. All other variables were measured as reflective constructs and were designed following previous studies. Items of the three types of information transparency were adapted from Zhou et al. (2018). Items of the dependent variable, i.e., consumers' cross-border online purchase intention, were adapted from Mou et al. (2019b). In addition, age, gender, education, annual income, frequency of watching live streaming, frequency of cross-border online platform visits, frequency of cross-border online purchases, perceived uncertainty

(Mou et al., 2019a), and platform satisfaction (Zhou et al., 2018) were included in the model to control for individual differences. In addition, we take “risk preference” as a marker variable because it is unrelated to other variables in our model.

To ensure the appropriation of the measures, we first consulted with several experienced researchers on identifying and rectifying potential problems in the framing and phrasing of items. Minor modifications were made to certain items based on their suggestions. Second, we used a forward-backward translation method to design the questionnaire for the Chinese context. All items were originally designed in English, and all respondents were from China. Several postgraduate students with rich experience in live streaming purchases were hired to perform the translation. Finally, two researchers who were familiar with both Chinese and English were invited to compare the items in Chinese and their counterparts in English and ensure that there were no significant differences. In addition, we conducted a pilot test involving 17 respondents to determine whether the questionnaire had any ambiguous expressions and awkward wordings and further revised the questionnaire.

We distributed the questionnaire on the Wenjuanxing website, a famous and professional data collection website in China. The respondents were randomly invited in the survey, and they were required to have shopping experience on the focal cross-border e-commerce platform. Therefore, we used a question to weed out those who did not use the focal platform but filled in the questionnaire by mistake. All the requirements and explanations of the survey were listed and highlighted in the cover letter of the questionnaire to instruct the respondents. In addition, we included several questions in the questionnaire to identify qualified respondents. As an incentive and a token of appreciation, RMB 15 (equivalent to \$2.14) was provided to the respondents who completed the questionnaire and passed the audits. The respondents who attended our pilot test were excluded from the study. In total, 280 respondents participated in our survey, and 8 of them were excluded since they did not use the focal platform at all. Finally, 272 responses were deemed usable.

Of all of our respondents, 69.85% are women and the remaining 30.15% are men. Over 75% of them are aged between 20-29, and most of them have a bachelor's degree. In the past three months, 33.36% of the respondents bought products several times a month with live streaming, and approximately 30% of them spend more than 1 h on online purchases every day.

## **DATA ANALYSIS**

### **Measurement Validation**

Considering that both formative and reflective constructs are included in the research model, the partial least squares (PLS) method was employed in this study to analyze the measurement model (Gefen et al., 2011; Hair et al. 2019; Shiau et al. 2019; Khan et al., 2019; Shiau and Chau, 2016). For the formative construct, i.e., affordance of live streaming, this study mainly used the guidelines proposed by Cenfetelli and Bassellier (2009) and Petter et al. (2007) to estimate its reliability and validity. The weights, loadings, and variance inflation factors (VIFs) are reported in Table 1, which all meet the requirements. Weights reflect the relative contribution of the items, and loadings provide the absolute importance of the items to the focal construct (Tong et al., 2015). All the weights of affordance of live streaming are over 0.2, and the loadings range from 0.627 to 0.907, indicating a desirable reliability and convergent validity of our data. In addition, all the VIFs values are below 3.33 (Cenfetelli & Bassellier, 2009); hence, there is no evidence of multicollinearity.

The reflective constructs were assessed using convergent and discriminant validities. Table 2 presents the Cronbach's alpha (CA), composite reliability (CR), average variance extracted (AVE), and correlations of the focal constructs. As shown in Table 2, the CA values range from 0.838 to 0.931, and the CR values range from 0.923 to 0.956, both of which exceed the standard, i.e., 0.707 (Fornell & Larcker, 1981). Thus, the data satisfy the reliability requirement. AVE and item loadings were used to estimate the convergent validity. It is required that AVE should exceed 0.5, and item

loadings should exceed 0.7 (Chin, 1998). According to the results reported in Tables 1 and 2, the values of AVE and item loadings are acceptable. In other words, the data also have strong convergent validity. In addition, we adopted the Fornell-Larcker criterion, cross-loadings method, and Heterotrait-Monotrait (HTMT) ratio to assess discriminant validity. Table 1 shows that all the item loadings exceed the cross-loadings, and the AVE square roots in Table 2 exceed the correlation coefficients of each latent variable, which confirms the discriminant validity (Fornell & Larcker, 1981). As shown in Table 3, all the HTMT values were below 0.85 (ranging from 0.051 to 0.759), which confirmed the discriminant validity of our data (Voorhees et al., 2016). As a result, it is believed that the data of this study have strong reliability and validity.

Considering that the data were collected by the survey method, we also used Haman's single-factor method, and marker variable test to assess common method bias (CMB) (Chin et al., 2012; Podsakoff et al., 1986; Shiau et al., 2020). The factor analysis showed that neither a single factor nor one general factor accounted for the majority of the variance. Then, we performed a marker variable (risk preference) test, which was unrelated to other variables and had no effect in our model. Therefore, on the basis of the presented evidence, CMB should not be a concern in this study. Furthermore, we compared the answers of the early and late respondents to verify whether there exists nonresponse bias (Armstrong & Overton, 1977; Genfen et al., 2011; Shiau et al., 2020). The results did not show significant differences between the two groups in any of the constructs. Thus, the credibility of the structural model in the next session would not be undermined by nonresponse bias.

## Structural Model

Table 4 shows the main effects test results, and Table 5 shows the moderating effects test results. It is found that 8 of 10 hypotheses were supported. We first applied the standard bootstrap resampling procedure to assess the significance of the paths of the main effects. The adjusted  $R^2$  was 0.545. As shown in Table 4, the relationship between affordance of live streaming and cross-border purchase intention was not significant ( $\beta = -0.045$ ); thus, H1 was not supported. The results show that affordance of live streaming was positively associated with perceived product transparency ( $\beta = 0.242$ ,  $p < 0.01$ ), perceived seller transparency ( $\beta = 0.213$ ,  $p < 0.001$ ), and perceived transaction transparency ( $\beta = 0.208$ ,  $p < 0.01$ ). Therefore, H2(a), H2(b), and H2(c) were all supported. Additionally, perceived product transparency ( $\beta = 0.143$ ,  $p < 0.05$ ), perceived seller transparency ( $\beta = 0.160$ ,  $p < 0.05$ ), and perceived transaction transparency ( $\beta = 0.110$ ,  $p < 0.05$ ) were positively associated with consumers' cross-border purchase intention, which supported H3(a), H3(b), and H3(c). Then, we further examined the indirect effect of information transparency using the bootstrapping procedures of smartPLS and confirmed that affordance of live streaming influenced purchase intention through product ( $\beta = 0.060$ ,  $p < 0.05$ ), seller ( $\beta = 0.058$ ,  $p < 0.05$ ), and transaction transparency ( $\beta = 0.060$ ,  $p < 0.05$ ) in the cross-border e-commerce context (Table 8 in Appendix shows the results).

Given the existence of formative construct in the model, this study used a two-stage approach in PLS to test the moderating effects (Henseler & Fassott, 2010). The moderating effect of affordance of live streaming on the relationship between perceived product transparency and purchase intention was negatively significant ( $\beta = -0.121$ ,  $p < 0.05$ ), i.e., H4(a) was supported. The moderating effect of affordance of live streaming on the relationship between perceived seller transparency and purchase intention was positively significant ( $\beta = 0.158$ ,  $p < 0.05$ ), i.e., H4(b) was supported. However, contrary to our hypothesis, the moderating effect of affordance of live streaming on the relationship between perceived transaction transparency and purchase intention was not significant ( $\beta = -0.052$ ), i.e., H4(c) was not supported. This finding may be due to the fact that the information related to transactions provided in the video is limited, which is worth further investigation.

Table 1. Variance inflation factors (VIFs), weights, loadings, and cross-loadings

Constructs	Items	VIFs	Weights	Loadings and Cross-loadings						
				ALS	PPT	PST	PTT	PU	PS	CPI
Affordance of Live Streaming (ALS)	ALS1	2.910	0.200	<b>0.808</b>	0.205	0.215	0.253	0.014	0.239	0.215
	ALS2	2.778	0.608	<b>0.907</b>	0.267	0.258	0.242	-0.037	0.240	0.233
	ALS3	2.870	0.236	<b>0.627</b>	0.201	0.181	0.116	-0.077	0.257	0.210
	ALS4	2.256	0.278	<b>0.664</b>	0.161	0.188	0.189	-0.216	0.260	0.241
	ALS5	2.650	0.436	<b>0.728</b>	0.239	0.203	0.137	-0.156	0.259	0.238
Perceived Product Transparency (PPT)	PPT1	-	-	0.239	<b>0.831</b>	0.505	0.328	-0.021	0.555	0.416
	PPT2			0.273	<b>0.846</b>	0.580	0.302	-0.011	0.550	0.441
	PPT3			0.253	<b>0.862</b>	0.542	0.284	-0.130	0.544	0.470
	PPT4			0.237	<b>0.861</b>	0.592	0.393	0.016	0.550	0.468
	PPT5			0.196	<b>0.796</b>	0.567	0.297	-0.025	0.513	0.451
Perceived Seller Transparency (PST)	PST1			0.284	0.627	<b>0.882</b>	0.415	-0.067	0.533	0.522
	PST2			0.268	0.576	<b>0.893</b>	0.489	-0.081	0.517	0.475
	PST3			0.240	0.589	<b>0.912</b>	0.527	-0.043	0.472	0.507
	PST4			0.191	0.574	<b>0.881</b>	0.458	-0.034	0.427	0.435
Perceived Transaction Transparency (PTT)	PTT1			0.266	0.343	0.458	<b>0.916</b>	-0.067	0.381	0.461
	PTT2			0.231	0.339	0.484	<b>0.907</b>	-0.081	0.381	0.388
	PTT3			0.232	0.355	0.486	<b>0.925</b>	-0.043	0.362	0.406
	PTT4			0.232	0.362	0.508	<b>0.908</b>	-0.034	0.382	0.423
Perceived Uncertainty (PU)	PU1			-0.081	0.019	0.009	-0.014	<b>0.921</b>	-0.123	-0.180
	PU2			-0.106	-0.052	-0.040	-0.081	<b>0.962</b>	-0.175	-0.223
	PU3			-0.114	-0.071	-0.059	-0.070	<b>0.931</b>	-0.176	-0.221
Platform Satisfaction (PS)	PS1			0.267	0.561	0.478	0.394	-0.179	<b>0.866</b>	0.638
	PS2			0.257	0.553	0.483	0.357	-0.214	<b>0.900</b>	0.574
	PS3			0.246	0.609	0.503	0.363	-0.117	<b>0.884</b>	0.564
	PS4			0.255	0.547	0.468	0.329	-0.082	<b>0.864</b>	0.544
Cross-border Purchase Intention (CPI)	PI1			0.233	0.441	0.454	0.389	-0.198	0.552	<b>0.833</b>
	PI2			0.200	0.378	0.428	0.414	-0.125	0.517	<b>0.780</b>
	PI3			0.227	0.404	0.383	0.298	-0.294	0.530	<b>0.846</b>

## DISCUSSION AND CONCLUSION

Drawing on the affordance theory and information transparency literature, we developed and tested a theoretical model that links live streaming of cross-border e-commerce with consumer behavior. We found strong support for the proposed model. First, although live streaming alone would not significantly affect consumer behavior in cross-border e-commerce platforms, it could increase consumers' purchase intention by strengthening product, seller, and transaction transparency in the platform. Furthermore, affordance of live streaming could intertwist with information transparency to affect consumers' purchase intention. Specifically, the positive influence of seller transparency could

Table 2. Cronbach's alpha (CA), composite reliability (CR), average variance extracted (AVE), and correlations

Constructs	Mean (SD.)	CA	CR	AVE	Correlations							
					ALS	PPT	PST	PTT	PU	PS	CPI	
ALS	5.160 (1.190)	-	-	-								
PPT	5.250 (1.000)	0.895	0.923	0.705	0.289	<i>0.840</i>						
PST	4.840 (1.160)	0.915	0.940	0.796	0.279	0.665	<i>0.892</i>					
PTT	5.040 (1.148)	0.934	0.953	0.835	0.264	0.383	0.529	<i>0.914</i>				
PU	3.940 (1.433)	0.931	0.956	0.879	-0.108	-0.041	-0.035	-0.061	<i>0.938</i>			
PS	5.508 (0.813)	0.902	0.931	0.772	0.292	0.646	0.550	0.412	-0.171	<i>0.879</i>		
CPI	5.757 (0.853)	0.838	0.929	0.673	0.292	0.536	0.547	0.461	-0.223	0.663	<i>0.821</i>	

Note: SD = standard deviation. Square roots of AVE *in italics*.

be amplified by affordance of live streaming, while the positive influence of product transparency could be undermined by affordance of live streaming. The findings have important implications for both academia and practice.

The findings of prior studies in the domestic e-commerce context (e.g., Sun et al., 2019; Zhang et al., 2019) show that live streaming can directly increase consumers' purchase intention. However, contrary to H1, the present study finds that either affordance of live streaming or frequency of watching live streaming ( $\beta = 0.-0.044$ ) has a significant direct effect on consumers' purchase intention in the cross-border e-commerce context. A possible explanation is that consumers are more cautious and rational when purchasing cross-border goods. In general, consumers engage in cross-border e-commerce platforms to buy goods that have adequate quality and/or not easy access to in the domestic market, such as beauty cosmetics from luxury brands, digital products, or special snacks. Usually, these products are relatively expensive. Under such conditions, consumers are less likely to make a purchase decision only because of watching the product's live show.

However, we indeed observe indirect effects of affordance of live streaming on cross-border purchase intention through three direct types of information transparency. Consistent with H2(a), H2(b), and H2(c), the affordance of live streaming can significantly increase product, seller, and

Table 3. HTMT Ratio

	PPT	PST	PTT	PU	PS	CPI
PPT						
PST	0.732					
PTT	0.418	0.573				
PU	0.074	0.051	0.063			
PS	0.719	0.601	0.447	0.181		
CPI	0.616	0.619	0.519	0.252	0.759	

Table 4. Main effects testing results

Hypothesis	Path	Path Coefficients	Standard Deviation	T-values	P-values	
H1	ALS@CPI	0.045	0.053	0.845	0.398	H1 was not supported.
H2 (a)	ALS@PPT	0.242**	0.077	3.153	0.002	H2 (a) was supported.
H2 (b)	ALS@PST	0.213***	0.066	3.281	0.001	H2 (b) was supported.
H2 (c)	ALS@PTT	0.208**	0.073	2.842	0.005	H2 (c) was supported.
H3 (a)	PPT@CPI	0.143*	0.060	2.399	0.016	H3 (a) was supported.
H3 (b)	PST@CPI	0.130*	0.074	2.159	0.031	H3 (b) was supported.
H3 (c)	PTT@CPI	0.113*	0.055	1.987	0.047	H3 (c) was supported.

Note: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

transaction transparency. Affordance of live streaming ensures the visualization of products and sellers, allowing consumers to see the sellers and perceive the sellers and products. In addition, through the visualization afforded by live streaming, detailed and visible information in relation to the products and transactional processes can be provided to consumers. As a result, the products, sellers, and transactional processes become more transparent to consumers. Furthermore, consistent with H3(a), H3(b) and H3(c), the increasing extent of product, sellers, and transaction transparency contributes to cross-border e-commerce purchase intention. Information transparency in terms of product, seller, and transactional process enables consumers to make more effective and efficient decisions and leads to high intention to purchase. Therefore, affordance of live streaming can increase consumers' purchase intention in the cross-border e-commerce context, but through an indirect way.

Furthermore, affordance of live streaming has the ability to affect the influences of information transparency on consumers' purchase intention in the cross-border e-commerce context. Specifically, consistent with H4(a), the positive influence of product transparency on consumers' purchase intention could be undermined by the affordance of live streaming. In the context of cross-borders, to overcome distance issues, sellers use various features, including appealing product descriptions, prices, images, or videos, to present the product information and increase consumers' understanding of the product (Zhu et al., 2019; Mou et al., 2019a). Under such conditions, a high extent of affordance of live streaming with product transparency may be associated with product information overload (Schneider 1987), which could lead to a mismatch between consumers and their purchase. Thus, affordance of live streaming negatively moderates the relationship between product transparency and consumers' cross-border purchase intention. Additionally, as we hypothesized in H4(b), the positive influence of seller transparency on consumers' purchase intention could be enhanced by affordance of live streaming. Live streaming affords visibility for consumers, allowing the sellers to be seen and perceived as a real person. This could further facilitate consumers' purchase intention. Contrary to H4(c), the moderating effect of affordance of live streaming on the relationship between transaction transparency and consumers' purchase intention is insignificant. A possible explanation is that relatively less and simple information in terms of transactional process is provided in live streaming. In the process of living, information related to the transactional process is rarely displayed in vivid form. Usually, consumers ask transaction-related questions by bullet screen, and then,

Table 5. Moderating effects testing results

Path	Cross-border Purchase Intention		
	Model 1	Model 2 (full model)	
<i>Control variables</i>			
Age	0.116*	0.111*	
Sex	0.018	0.013	
Education	0.050	0.048	
Income	0.003	0.004	
Frequency of purchase	0.122**	0.123**	
Frequency of visit	-0.015	-0.030	
Frequency of watching live streaming	-0.044	-0.052	
PU	-0.093*	-0.085	
PS	0.360***	0.352***	
<i>Independent variables</i>			
PPT	0.143*	0.126*	
PST	0.130*	0.143*	
PTT	0.113*	0.110*	
ALS	0.014	0.045	
<i>Interaction terms</i>			
ALS*PPT	–	-0.121*	<b>H4 (a)</b> was supported.
ALS*PST	–	0.158*	<b>H4 (b)</b> was supported.
ALS*PTT	–	-0.052	<b>H4 (c)</b> was not supported.

Note: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

streamers answer the questions with direct and simple words. In this way, live streaming can hardly make transaction transparency perceived by consumers in a more effective and efficient way. Thus, the moderating effect is insignificant.

This study shows how live streaming influences consumers' purchase intention in a cross-border e-commerce context from an information transparency perspective. Specifically, affordance of live streaming increases product, seller, and transaction transparency, which subsequently increases consumers' purchase intention in cross-border e-commerce platforms. Furthermore, affordance of live streaming moderates the influence of product and seller transparency on consumers' cross-border purchase intention. Remarkably, affordance of live streaming undermines the influence of product transparency but enhances the influence of seller transparency. The influence of transaction transparency is not affected by live streaming.

### Theoretical Contributions

This study offers three important contributions to the existing literature. First, this study contributes to the literature on cross-border e-commerce by being one of the earliest studies examining the influence of live streaming on consumers' cross-border online purchase intention. It is suggested that

live streaming offers capabilities to overcome cross-border barriers (e.g., Streicher & Estes, 2016; Zhang et al., 2019); however, empirical evidence is lacking. To overcome this challenge, our study goes beyond the existing literature by highlighting the multiple roles of live streaming in affecting consumer behavior in cross-border e-commerce, which differs from most previous studies that only focus on the direct effect of live streaming. On the one hand, considering that live streaming entails and affords rich interactions among consumers, sellers, and platforms, it may offset the negative influence of lacking information transparency posed by cross-border e-commerce. On the other hand, the cues provided by live streaming could also affect the relationship between information transparency and consumers' cross-border online purchase intention. The multiple roles of live streaming are largely supported by the findings. Thus, this study enriches our understanding of consumers' cross-border online purchase behavior regarding the influence of live streaming.

Second, this study contributes to the literature on the influence of live streaming by unveiling the mechanism between affordance of live streaming and consumers' cross-border online purchase behavior through the information transparency perspective. Although prior studies have validated the significant influence of live streaming in the domestic e-commerce context (e.g., Wongkitrungrueng & Assarut, 2018; Sun et al., 2019), few of them explain the underlying mechanism. Our results show that in the cross-border e-commerce context, live streaming alone is not able to significantly affect consumer behavior; however, it can affect consumers' purchase decisions through information transparency or interaction with information transparency. Furthermore, from an affordance perspective, our study jointly examines the social commerce features of live streaming and how consumers perceive it. Thus, this study offers an important and meaningful perspective (e.g., information transparency) for understanding the relationship between live streaming and consumer behavior.

Third, this study contributes to the literature on information transparency by applying the typology of information transparency to the study of cross-border e-commerce and examining the different moderating effects of live streaming affordance on three types of information transparency. In particular, our study implies that affordance of live streaming can increase consumers' cross-border online purchase intention by improving three types of information transparency. Our study also demonstrates a positive moderating effect of affordance of live streaming on the influence of seller transparency but a negative moderating effect of affordance of live streaming on the influence of product transparency, suggesting that the typology of information transparency is necessary to explore the relationship between information transparency and consumers' cross-border online purchase intention. Thus, this study deepens our understanding of information transparency and its interaction with live streaming.

## **Practical Implications**

This study also has important practical implications. First, this research would facilitate practitioners' understanding regarding the important role of live streaming in cross-border e-commerce. Involving multiple parties from different borders, the interactions among consumers, sellers, and platforms are more complex in the cross-border e-commerce context (Wang, 2014; Zhao et al., 2020). Many platforms have adopted live streaming to surmount the cross-border challenge. Although anecdotal evidence and prior studies have indicated the positive influence of live streaming on consumers' purchase behavior, there is a lack of empirical evidence. While live streaming does not show significant direct effects, the results of this study provide sound evidence confirming that live streaming can affect consumers' purchase behavior by improving information transparency or interacting with information transparency. Thus, it is an opportunity for practitioners to adopt live streaming as a tool to attract consumers and gain competitive advantage in the cross-border marketplace.

Second, given the complex role of live streaming in affecting consumers' purchase intention in the cross-border e-commerce context, practitioners should be careful when designing or using the tool of live streaming. This study also provides some guidelines. Our results show that live streaming not only increases consumers' purchase intention through information transparency but also moderates



the influences of different types of information transparency in different ways. Specifically, the influence of seller transparency is positively moderated, while the influence of product transparency is negatively moderated. This implies that too much product information is likely to hinder consumers' decisions. Thus, sellers should balance the quantity of product information provided in the video and the quality of live streaming. Correspondingly, platforms should design functions to help sellers better communicate with consumers.

### **Limitations and Further Research**

There are several limitations in this study. First, this study only considers consumers' cross-border online purchase intention as the key indicator of consumer behavior, which makes us unable to generalize our findings to other consumer behaviors, such as word-of-mouth. We encourage further studies to test the influence of live streaming on other consumer behaviors. Second, the survey method employed in this study is not able to ensure that we measure purchase intention based on a specific purchase process. Therefore, further studies employing experimental methods are encouraged. Last but not least, it must be noted that the main effect and the moderating effect of live streaming on perceived transaction transparency in H3(c) were not supported, and further research is needed to explain the reason and test the validity of our explanations.

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## APPENDIX 1

Table 6. Construct definitions

Constructs	Definitions
Affordance of Live Streaming	The capacities provided by the live streaming in terms of visibility, shopping guidance and trading (Dong & Wang, 2018; Sun et al., 2019).
Perceived Product Transparency	The extent to which a consumer can easily access and understand the information needed to estimate the product and its performance (Zhou et al., 2018).
Perceived Seller Transparency	The extent to which a consumer could easily access and understand the information needed to estimate the seller and his performance (Zhou et al., 2018).
Perceived Transaction Transparency	The extent to which a consumer could easily access and understand the information needed to estimate the reliability the transactional process (Zhou et al., 2018).
Cross-border Online Purchase Intention	The customer's intention to purchase cross-border products or service from sellers via live streaming shopping (Ajzen, 1991; Lu et al., 2016; Sun et al., 2019).

Table 7. Demographics of respondents (N=272)

Variables	Category	Frequency	Percentage (%)
<b>Gender</b>	Male	82	30.15
	Female	190	69.85
<b>Age</b>	Under 20	17	6.25
	20-24	140	51.47
	25-29	68	25.00
	30-39	25	9.19
	40-49	17	6.25
	50 or older	5	1.84
<b>Education Level</b>	Secondary school of below	9	3.31
	Junior college	16	5.88
	Bachelor	172	63.24
	Master	71	26.10
	PhD	4	1.47
<b>Annual Income</b>	Less than 50k	28	10.29
	50k-100k	68	25.00
	100k-150k	58	21.32
	150k-200k	56	20.59
	200k-350k	43	15.81
	350k-500k	11	4.05
	More than 500k	8	2.94

*continued on next page*

Table 7. Continued

Variables	Category	Frequency	Percentage (%)
<b>Frequency of Live Streaming Purchase in Last Three Months</b>	Never	3	1.10
	Less than once each month	65	23.90
	Once every month	41	15.07
	Several times a month	91	33.46
	Several times a week	57	20.96
	Once a day	7	2.57
	Several times a day	8	2.94
<b>Time Spending on Online Purchase Every Day in Last Three Months</b>	Less than 0.5h	103	37.87
	0.5h-1h	96	35.29
	1h-2h	43	15.81
	2h-3h	18	6.62
	3h-5h	9	3.31
	More than 5h	3	1.10

Table 8. Indirect effects testing results

Independent Variables	Indirect Effects	Dependent Variables	Path Coefficients	P-values
ALS	PPT	CPI	0.060*	<0.05
	PST		0.058*	<0.05
	PTT		0.060*	<0.05

Note: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Table 9. Measurement items

Constructs	Questions	References
Affordance of Live Streaming	1. The live streaming in the cross-border e-commerce platform makes me understand the transactional process of the product.	Self-developed
	2. The live streaming in the cross-border e-commerce platform provides me with detailed product manufacturing or procurement information (e.g., manufacturer and country of origin).	
	3. The live streaming in the cross-border e-commerce platform presents the product features, functions, and performance.	
	4. The live streaming in the cross-border e-commerce platform helps me realize the appearance of the product	
	5. The live streaming in the cross-border e-commerce platform provides me with detailed use guidance	
Perceived Product Transparency	1. I could fully understand the product.	Zhou et al. (2018)
	2. I had a clear idea about the product.	
	3. I had a clear understanding of the product.	
	4. I was able to know the product very well.	
	5. Overall, the product was transparent to me.	
Perceived Seller Transparency	1. I could easily understand seller.	Zhou et al. (2018)
	2. I was familiarized with the seller.	
	3. I was clear about the profile of the seller.	
	4. I had a clear idea about the seller.	
Perceived Transaction Transparency	1. I clearly knew how the cross-border transaction was carried out in the platform.	Zhou et al. (2018)
	2. I was clear about the way to complete the cross-border transaction in the platform.	
	3. I had a clear idea of the cross-border transactional process in the platform.	
	4. I was familiarized with the cross-border transactional process in the platform.	
Cross-border Online Purchase Intention	1. I would consider purchasing the product from the seller in the platform.	Mou et al. (2019a)
	2. I would purchase the product from the seller in the platform.	
	3. I would expect to buy the product from the seller in the platform.	

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