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Article

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MARKETING | RESEARCH ARTICLE

The effects of live streaming attributes on consumer trust and shopping intentions for fashion clothing

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Abstract: Small individual sellers and retailers use live streaming as a direct selling channel to demonstrate and sell their products. This study proposes a framework that examines the influence of live streaming attributes on customer trust and intentions to watch and purchase fashion clothing. Drawing on prior literature, we examine an extensive list of 20 live streaming attributes including product attributes, seller attributes, and other related attributes. The study is performed on 476 Thai consumers with diverse demographics. Results show that product quality and price transparency significantly influence customer trust and intentions to watch and purchase, while seller's image of being trustworthy and the quality of seller's Facebook page only show weak relationships. Another finding is that seller pre-announcing their broadcast timing will encourage higher intention to watch. And as expected, the trust in seller positively influences trust in product. These findings suggest opportunities for sellers to focus their attention on important live streaming attributes to develop trust with their customers and increase their customer intentions to watch and purchase. The study concludes with discussion on managerial implications and future work on live streaming commerce for fashion clothing products.

Subjects: Marketing; Consumer Behaviour; Fashion & Beauty Industries

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Earth Chandruangphen is a Ph.D. candidate in the School of Technopreneurship and Innovation Management Program, Graduate School, Chulalongkorn University. His research interests are e-commerce, social networks, and consumer behaviors. This research is a part of his dissertation to develop innovative solution to help Thai consumers and merchants achieve better experience and performance in live streaming commerce.

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PUBLIC INTEREST STATEMENT

Many small individual sellers and retailers use live streaming as a direct selling channel to demonstrate and sell fashion clothes. This paper examines as many as 20 attributes, such as the seller's presentation skills, the product quality, and pricing, to see how they affect the consumer trust and intentions to watch and purchase. The study is performed on 476 Thai consumers with diverse demographics. Findings suggest that product quality, price transparency, and the pre-announcement of the broadcast timing have significant influence while seller's image of being trustworthy and the quality of seller's Facebook page show weak relationships. These findings also suggest opportunities for sellers to focus their attention on important attributes to develop trust with their customers and increase their customer intentions to watch and purchase. The paper concludes with discussion on managerial implications and future work on live streaming commerce for fashion clothing products.

Keywords: Consumer behaviors; customer trust; fashion clothing; live streaming; shopping motivation; social commerce

1. Introduction

Today, the usage of live streaming as a direct selling channel is growing in popularity. Live streaming is a broadcasting of real-time online videos where a person broadcasting the content is called a streamer. In live streaming selling of goods such as fashion clothing, streamers broadcast content related to the goods being sold and audience usually interact with the streamers and other audience via text chat. Streamers may try on the clothes and describe their properties and audience may interact with the streamers by asking questions, expressing opinions, or making purchase. Many small individual sellers use live streaming feature on Facebook to demonstrate products and conduct sales (Wongkitrungrueng & Assarut, 2020; Wongkitrungrueng et al., 2020). To become successful, fashion goods sellers should understand what factors they need to focus on to increase their live stream views and sales.

A number of prior studies have examined consumer behavior in live streaming shopping environments. Wongkitrungrueng and Assarut (2020) has studied perceived shopping values in live streaming and how they enhance trust and in turn lead to customer engagement. Cai et al. (2018) has examined certain live streaming attributes such as seller physical attractiveness and product information, while Hou et al. (2019) has examined factors such as seller interactivity, seller humor, and seller sex appeal. Sun et al. (2019) has examined attributes such as seller's presentation skills, interactivity skills, and shopping guidance. However, the prior research is lacking in its studies of the possible shopping attributes, especially in the context of live streaming shopping for fashion clothes. Only Chandruangphen et al. (2021) has explored some live streaming attributes in fashion clothes shopping through customer interviews.

Therefore, the study's main objective is to investigate the live streaming attributes that motivate shoppers to watch and shop fashion clothes on live streams. In the following sections, we first review the background of live streaming attributes for fashion clothing shopping, before constructing a conceptual model based on the theories that describe the influences of live streaming attributes on consumer trust and consumer shopping behaviors in live streaming.

2. Literature review and hypothesis development

2.1. Live streaming attributes for fashion clothing shopping

There have been a lot more studies in how traditional attributes and online shopping website attributes affect consumer shopping intentions than those of live streaming shopping. Though the attributes are not the same, the formers share a lot of common attributes with the latter.

With regard to traditional shopping malls, several factors that affect consumer shopping behaviors have been studied including functionality, convenience, safety, leisure, atmospherics, self-identification (El Hedhli et al., 2013); product, service, location, facility, design, atmosphere, price, leisure (Johnson et al., 2015); merchandise assortments, services quality, and prices (El Hedhli et al., 2017).

With regard to online stores, Liang and Lai (2002) describes six motivation factors that affect how consumers choose stores (e.g., online order, search function, easy to sign up, home delivery, credit card payment, shopping cart feature), two hygiene factors (security and consistent style), and two media richness factors (e.g., product organization and navigational links). Chen et al. (2010) studies three related areas of website attributes: technology (e.g., security, privacy, and usability), shopping (e.g., convenience, trust, and delivery), and product (e.g., product value and merchandising). Other factors also include product assortment, product quality, price transparency, website convenience and product assortment (Davari et al., 2016; Kautish & Sharma, 2019).

Table 1. Summary of shopping attributes that affect consumer behavior

	Liang and Lai (2002)	Chen et al. (2010)	Aghekyan-Simonian et al. (2012)	El Hedhli et al. (2017)	Johnson et al. (2015)	Davari et al. (2016)	Wongkitrungrung and Assarut (2020)	Cui et al. (2018)	Hou et al. (2019)	Kaushik and Sharma (2019)	Sun et al. (2019)	Chandruangphen et al. (2021)
Seller Image			X				X	X				X
Seller Interactivity				X	X	X	X	X	X	X	X	X
Seller Presentation							X	X		X	X	X
Seller Shopping Guidance							X				X	X
Seller Politeness												X
Seller Verbal Attractiveness												X
Seller Humor							X		X			X
Seller Sex Appeal								X	X			X
Seller Pacing												X
Product Assortment				X	X	X				X		X
Product Quality			X	X	X	X				X		X
Product Trendiness				X			X					X
Product Brand Name				X								X
Product Pricing		X			X							X
Product Personal Appeal												X
Price Transparency												X
Privacy and Security	X	X	X	X		X						
Convenience and Accessibility	X	X	X	X		X		X				
Website Layout or Store Layout	X	X	X	X						X		
Delivery	X	X								X		
Product Return										X		
Background Ambiance												X
Broadcast Timing Announcement												X
Number of Viewers												X
Seller Facebook page												X

In live streaming shopping, Wongkitrungrueng and Assarut (2020) studies factors that influence consumer trust and shopping engagement. Some of the important shopping attributes being studied in prior literature include seller physical attractiveness, seller interactivity (Cai et al., 2018); streamer interactivity, humor, sex appeal (Hou et al., 2019); seller's product presentation, ability to answer questions, shopping guidance skills (Sun et al., 2019); product information, product interactivity, communication quality, enjoyment, trend setting, and social presence (Wongkitrungrueng et al., 2020). Chandruangphen et al. (2021) finds additional factors including seller pacing or the speed at which seller moves from one item to the next, product personal appeal, price transparency, background ambiance, broadcast timing announcement, number of viewers, and seller Facebook page. Based on prior works, we summarize the list of shopping attributes in live streaming that could motivate shoppers to shop as shown in Table 1.

2.2. Trust in seller & trust in product

In e-commerce, trust is defined as the beliefs in something or someone based on their characteristics, such as goodness, fairness, honesty, competence, and many others (McKnight & Chervany, 2001). Trust in seller is defined as the customer beliefs in the seller based on seller competency and reliability to serve customer long-term interests (Crosby et al., 1990). Swan et al. (1999) finds that trust in salesperson creates successful sales relationship through positive customer attitudes, intentions, and behaviors. Trust in product is defined as the customer beliefs that the product will meet their expectations (Wongkitrungrueng & Assarut, 2020).

2.3. Customer engagement

Many studies have examined the topics of customer behaviors in shopping. In both online and offline context, customer intention to purchase has been studied extensively (Aghekyan-Simonian et al., 2012; Davari et al., 2016; Johnson et al., 2015). In live streaming shopping, Cai et al. (2018) and Sun et al. (2019) have studied factors that influence customer intention to purchase. Wongkitrungrueng and Assarut (2020) and Hou et al. (2019) have explored factors that influence customer trust and intentions.

2.4. Relationship among live streaming attributes, trust, and customer engagement

Based on prior studies, there are several live streaming attributes that might have positive influence on trust in product, trust in seller, and intention to watch the live streaming. These are as follow:

Seller image refers to the customer perception of the seller and the impression of what they expect from the seller. Aghekyan-Simonian et al. (2012) points out that product brand image and online store image reduces risk of online shopping which increases purchase intention. Leeraphong and Sukrat (2018) finds that seller reputation affects customer shopping intentions. Therefore:

H1a/b/c. Seller image has a positive influence on trust in product/trust in seller/intention to watch.

Seller interactivity refers to the ability of seller to communicate with shoppers. By enabling shoppers to interact with seller, customer has more trust in the seller and trust in the product, and in turn affect engagement with the seller (Wongkitrungrueng & Assarut, 2020). Hou et al. (2019) also finds that streamers interacting with viewers affect the viewer intention to continue watching. Therefore:

H2a/b/c. Seller interactivity has a positive influence on trust in product/trust in seller/intention to watch.

Seller presentation refers to the ability of seller to present products to shoppers. Sun et al. (2019) shows that product presentation in live streaming increases consumer engagement and shopping intentions. Therefore:

H3a/b/c. Seller presentation has a positive influence on trust in product/trust in seller/intention to watch.

Seller shopping guidance is the service given by knowledgeable salesperson to help guide shoppers to find desired products (Darian et al., 2001). Lee and Dubinsky (2017) suggests that online customers prefer to be assisted by salesperson and are likely to buy the recommended products. Sun et al. (2019) shows that personalized product recommendations affect consumer shopping intentions. Therefore:

H4a/b/c. Seller shopping guidance has a positive influence on trust in product/trust in seller/intention to watch.

Seller politeness refers to how much the shopper thinks the seller is a polite person. Shoppers are more inclined to trust and shop with sellers who are likable, friendly, and polite (Bateman & Valentine, 2015; Cai et al., 2018; Nicholson et al., 2001). Therefore:

H5a/b/c. Seller politeness has a positive influence on trust in product/trust in seller/intention to watch.

Seller verbal attractiveness refers to how well the seller can talk to keep viewers engaged. Fraser et al. (2019) and Hennig-Thurau (2004) suggest that the ability of streamers to socialize with the audience helps build relationship and influences business success. Therefore:

H6a/b/c. Seller verbal attractiveness has a positive influence on trust in product/trust in seller/intention to watch.

Product assortment refers to availability of products in various qualities, styles, and sizes being sold (Bauer et al., 2012). Product assortment provides value to shoppers in terms of product variety and depth and breadth of selections which has positive effect on trust and shopping intentions (Kautish & Sharma, 2019; Rubio et al., 2017). Therefore:

H7a/b/c. Fashion product assortment has a positive influence on trust in product/trust in seller/intention to watch.

Product quality refers to the superiority or excellence of a product (Zeithaml, 1988). Chinomona et al. (2013) finds that perceived product quality positively influences customer trust and purchase intention. Additionally, stores that offer products of low quality would lose customer trust (Jarvenpaa et al., 2000). Therefore:

H8a/b/c. Fashion product quality has a positive influence on trust in product/trust in seller/intention to watch.

Product trendiness refers to the novelty and uniqueness of the products (Workman & Kidd, 2000). Ladhari et al. (2019) finds that young online female shoppers are attracted to trending products. Melewar et al. (2017) suggests that trendiness and innovation are related to brand trust, credibility, and loyalty. Therefore:

H9a/b/c. Fashion product trendiness has a positive influence on trust in product/trust in seller/intention to watch.

Product brand name can be defined as the beliefs or attachments customers have about the brand (Wood, 2000). Web stores with reputable brands are associated with higher levels of brand trust (Ha, 2004). Ladhari et al. (2019) also finds that shoppers see brand value as implying higher trust towards well-known brands. Therefore:

H10a/b/c. Product brand name has a positive influence on trust in product/trust in seller/intention to watch.

Product personal appeal is a measure of how clothing items carried by the seller appeal to the unique fashion taste of the shoppers. Ladhari et al. (2019) and Bento et al. (2018) suggest that women who shop fashion clothes follow brands that resonate with their fashion style. Customers trust judgment of salespersons who have unique personal style and fashion taste (McColl et al., 2013). Therefore:

H11a/b/c. Product personal appeal has a positive influence on trust in product/trust in seller/intention to watch.

Pricing transparency is a measure of how pricing information is being communicated clearly. Davari et al. (2016) views that price transparency influences how customers perceive the quality of online stores. Therefore:

H12a/b/c. Pricing transparency has a positive influence on trust in product/trust in seller/intention to watch.

The number of live stream viewers refers to how many viewers are watching the live stream. Shoppers feel that high number of viewers signifies a type of social proof that may indicate trustworthiness of seller or product (Chandruangphen et al., 2021). Wang et al. (2020) shows that the number of viewers affect audience engagement. Therefore:

H13a/b/c. The number of viewers has a positive influence on trust in product/trust in seller/intention to watch.

The seller Facebook page refers to how well the page provides information about the seller and the products. Ruiz-Mafe et al. (2014) finds that users who perceive the FB fanpage of a brand being useful and who have high trust towards the brand will develop higher brand loyalty. Therefore:

H14a/b/c. Seller Facebook page has a positive influence on product trust/seller trust/intention to watch.

Seller humor refers to the ability of seller to amuse the audience. Imlawi and Gregg (2014) and Hou et al. (2019) find that humor positively influences social network engagement and increases intention to continue watching. Therefore:

H15. Seller humor has a positive influence on intention to watch.

Seller sex appeal refers to the physical attractiveness of the sellers. Cai et al. (2018) and Hou et al. (2019) show that seller physical attractiveness would motivate customers to watch live stream. Therefore:

H16. Seller sex appeal has a positive influence on intention to watch.

Seller pacing refers to the appropriate speed in which the seller moves from one item to the next. If seller stays on a certain item for too long, the shoppers will feel bored and may leave the live stream (Chandrruangphen et al., 2021). Therefore:

H17. Seller pacing has a positive influence on intention to watch.

Background ambiance refers to how shoppers perceive the environment seen in the background. El Hedhli et al. (2017) and Albayrak et al. (2016) suggest that ambiance in shopping malls affects customer willingness to patronize the mall. Therefore:

H18. Background ambiance has a positive influence on intention to watch.

Broadcast timing announcement refers to how appropriately the seller announce the live stream schedule to the viewer ahead of time. It is important for shoppers to know when the seller would broadcast the live stream because they may need to manage their time (Chandrruangphen et al., 2021). Therefore:

H19. Broadcast timing announcement has a positive influence on intention to watch.

As for the last remaining live streaming attribute, *product pricing* in online shopping has been well-studied and plays an important role in how shoppers behave (Grewal et al., 2003). Shoppers tend to shop expensive products that have well-known product brands and with well-known retailers (Forsythe & Shi, 2003). Leeraphong and Sukrat (2018) finds that pricing advantage may influence viewers to make impulse purchases. Therefore:

H20a/b/c. Product pricing has a positive influence on trust in product/intention to watch/intention to purchase.

As Huang (2015) shows that product evaluation blogs increase trust in product, it can also be considered that products carried by trusted sellers could be more trusted. Escobar-Rodríguez and Bonsón-Fernández (2017) and Shareef et al. (2019) suggest that trust in online shopping may increase customer purchase intentions. Therefore:

H21a/b/c. Trust in seller has a positive influence on trust in product/intention to watch/intention to purchase.

Customers who are satisfied with the product will trust the product and will lead them to purchase the product (Chinomona et al., 2013). Therefore:

H22a/b. Trust in product has a positive influence on intention to watch/intention to purchase.

As customers continue to explore more information about the product and receive more information about the product, they could be induced into making purchases (Babin et al., 1994). Therefore:

H23. The intention to watch has a positive influence on intention to purchase.

2.5. Research model and hypotheses

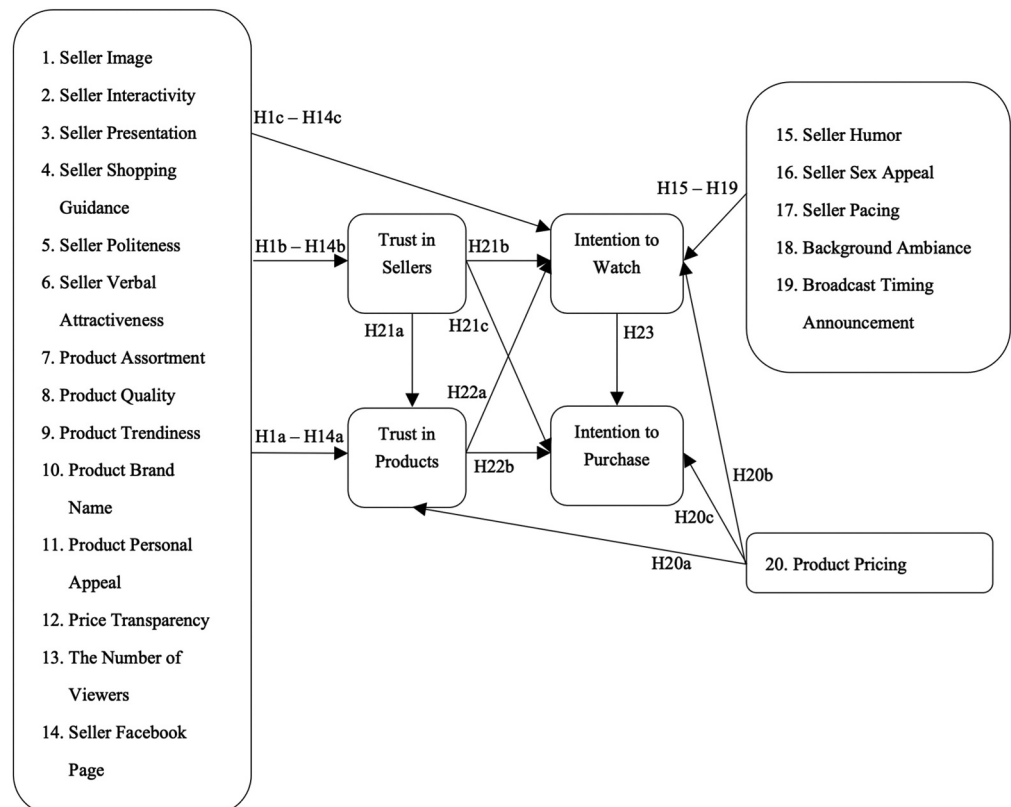
Figure 1 draws on the above literature and adapted from the trust model in Wongkitrungrueng and Assarut (2020) to present a conceptual framework showing live streaming attributes that influence shopping intentions through trust.

3. Material and methods

3.1. Sampling

Data were collected through an online survey in Thailand. To reach live streaming shoppers, the questionnaire was advertised on Facebook for 10 days. Because we encouraged our respondents to complete the questionnaire, we offered to donate 20 Thai Baht for each completed questionnaire to a charity as a virtuous incentive in this study. The population includes all Thai Facebook users that have used live streaming feature to watch and shop for fashion clothes. Though the accurate number of the population cannot be determined, similar studies such as that of Wongkitrungrueng and Assarut (2020) has shown that the effective sample size using PLS-SEM could be between 150 and 246, where the minimum is based on 10 times the largest construct (Barclay et al., 1995) and the recommended average size is based on 246 (Shah & Goldstein, 2006).

Figure 1. Conceptual framework of live streaming shopping attributes that affect consumer intentions through trust is adapted from the trust model in Wongkitrungrueng and Assarut (2020)



We collected the total of 476 Thai respondents. Of this total, 93% ($n = 442$) had made purchase and 58% ($n = 276$) were female. Most respondents aged over 36 ($n = 185; 38.87\%$) followed by 26–35 ($n = 160; 33.61\%$), then by those under 25 ($n = 130; 27.31\%$). Most of the respondents were singles ($n = 329; 69.12\%$), had a bachelor's degree ($n = 268; 56.30\%$), had an average monthly income between 15,001 and 30,000 Thai Baht ($n = 196; 41.18\%$), worked as government employees ($n = 198; 41.60\%$), and lived in Bangkok ($n = 88; 18.49\%$).

3.2. Questionnaire and measures

Respondents were required to answer the screening question to ensure they have experience watching or making fashion clothing purchase through Facebook live streaming. The questionnaire was divided into three parts. The first part collected demographic data of the respondent. The second part included the measure of all live streaming attributes. An 8-item measure of product assortment was adapted from Davari et al. (2016) and Kautish and Sharma (2019). A 7-item measure of product quality was adapted from Davari et al. (2016) and El Hedhli et al. (2017). A 3-item measure of product trendiness and a 3-item measure of product brand name were adapted from El Hedhli et al. (2017). A 4-item measure of product pricing was adapted from Johnson et al. (2015) and El Hedhli et al. (2017). A 3-item measure of product personal appeal was created from Chandruangphen et al. (2021). A 15-item measure of seller image were adapted from Cai et al. (2018) and Aghekyan-Simonian et al. (2012), which in turn adapted from Vázquez et al. (2002). A 7-item measure of seller interactivity was adapted from Hou et al. (2019). A 4-item measure of seller presentation and 4-item measure of seller shopping guidance were adapted from Sun et al. (2019). A 5-item measure of seller politeness was adapted from Bateman and Valentine (2015) and Cai et al. (2018). A 4-item measure of seller verbal attractiveness was created from Chandruangphen et al. (2021). A 7-item measure of seller humor was adapted from Hou et al. (2019) and Wongkitrungrueng and Assarut (2020). A 6-item measure of seller sex appeal was adapted from Hou et al. (2019) and Cai et al. (2018). A 2-item measure of seller pacing was created from Chandruangphen et al. (2021). A 4-item measure of price transparency was adapted from Davari et al. (2016). A 4-item measure of background ambiance was adapted from El Hedhli et al. (2017). A 3-item measure of broadcast timing announcement, a 2-item measure of number of viewers, and a 5-item measure of seller's FB page were created from Chandruangphen et al. (2021). And lastly, the third part included the measure of trust and consumer intentions. A 3-item measure of product trust, and 4-item measure of seller trust were derived from Wongkitrungrueng and Assarut (2020). A 3-item measure of intention to watch was derived from Hou et al. (2019) and a 3-item measure of intention to purchase was derived from Sun et al. (2019). Among this, the second and third parts of the questionnaire adopted a seven-scale Likert scale, with (1) representing total disagreement and (7) representing total agreement. Since all the respondents were Thais, the questions were developed in English and then translated from English to Thai.

4. Results

The PLS-SEM analysis was performed using SmartPLS software. The measurement model was used to test the reliability and the validity of the constructs, and the structural model was used to test the hypotheses.

4.1. Measurement model

The reliability of the constructs was tested using the individual loadings, composite reliability (CR), Cronbach's alpha, and average variance extracted (AVE) (see, Table 2). To assess the reliability of the individual items, indicator loadings to be kept are at least 0.700. As a result, eleven items were dropped from the analysis (see Appendix). Final set of measurement items is shown in Table 2 along with the values of Cronbach's alpha, and CR to be above 0.8 indicating sufficient internal consistency. The convergent reliability was tested using AVEs for all the factors to be above 0.5 and CR to be higher than AVE, indicating adequate validity. The discriminant validity was tested using the heterotrait-monotrait ratio of correlations (HTMT) to be less than 0.9 and satisfied the Fornell-Larcker criterion indicating that each construct is distinct from the other constructs as it correlates with its own construct more than with other constructs (see, Tables 3 and 4).

Table 2. Assessment of measurement model

	Indicator loadings	Composite reliability	Cronbach's alpha	AVE	rho_A		Indicator loadings	Composite reliability	Cronbach's alpha	AVE	rho_A
Seller Image											
SIMA2	0.719	0.918	0.899	0.585	0.9	FPQU1	0.895	0.959	0.946	0.823	0.947
SIMA3	0.702					FPQU2	0.907				
SIMA4	0.792					FPQU3	0.914				
SIMA11	0.77					FPQU4	0.919				
SIMA12	0.754					FPQU6	0.902				
SIMA13	0.784					Fashion Product Trendiness					
SIMA14	0.829					FPTR1	0.915	0.91	0.802	0.835	0.802
SIMA15	0.762					FPTR3	0.912				
Seller Interactivity											
SINT1	0.767	0.95	0.939	0.733	0.941	FPBN1	0.907	0.944	0.91	0.849	0.911
SINT2	0.829					FPBN2	0.952				
SINT3	0.89					FPBN3	0.903				
SINT4	0.872					Pricing					
SINT5	0.886					FPPR1	0.873	0.939	0.913	0.795	0.915
SINT6	0.877					FPPR2	0.851				
SINT7	0.866					FPPR3	0.925				
Seller Presentation											
SPRE1	0.934	0.956	0.932	0.88	0.932	Fashion Product Personal Appeal					
SPRE2	0.95					FPPA1	0.872	0.938	0.901	0.835	0.907
SPRE3	0.929					FPPA2	0.949				
Seller Shopping Guidance											
SSG1	0.891	0.948	0.927	0.821	0.927	Price Transparency					
SSG2	0.922					PTRA1	0.84	0.918	0.881	0.737	0.892
SSG3	0.915					PTRA2	0.867				
SSG4	0.895					PTRA3	0.82				
Seller Politeness											
SPOL1	0.84	0.94	0.92	0.757	0.93	Background Ambiance					
SPOL2	0.838					BAMB1	0.903	0.942	0.918	0.803	0.919
SPOL3	0.879					BAMB2	0.93				
SPOL4	0.917					BAMB3	0.879				
SPOL5	0.876					BAMB4	0.871				
Seller Verbal Attractiveness											
SVA1	0.891	0.959	0.942	0.853	0.944	Broadcast Timing Announcement					
SVA2	0.924					BTAN1	0.708	0.893	0.819	0.739	0.864
						BTAN2	0.94				

(Continued)

Table 2. (Continued)

	Indicator loadings	Composite reliability	Cronbach's alpha	AVE	rho_A	Indicator loadings	Composite reliability	Cronbach's alpha	AVE	rho_A
Seller Image										
SVA3	0.947					BTAN3				
SVA4	0.932					Number of Viewers				
Seller Humor										
SHUM1	0.862	0.947	0.935	0.721	0.938	NVIE1	0.924	0.837	0.86	0.845
SHUM2	0.874					NVIE2	0.936			
Seller Facebook Page										
SHUM3	0.864					SFBP1	0.944	0.929	0.739	0.93
SHUM4	0.86					SFBP2				
SHUM5	0.824					SFBP3	0.867			
SHUM6	0.868					SFBP4	0.889			
SHUM7	0.787					SFBP5	0.887			
Seller Sex Appeal										
SSA1	0.9	0.93	0.911	0.689	0.935	SFBP6	0.857			
Trust In Seller										
SSA2	0.758					TISE1	0.912	0.933	0.834	0.937
SSA3	0.826					TISE2	0.949			
SSA4	0.78					TISE3	0.948			
SSA5	0.869					TISE4	0.84			
SSA6	0.836					Trust In Product				
Seller Pacing										
SPAC1	0.938	0.924	0.836	0.859	0.851	TIPR1	0.938	0.956	0.878	0.931
SPAC2	0.915					TIPR2	0.953			
Intention to Watch										
Fashion Product Assortment										
FPAS1	0.81	0.936	0.919	0.676	0.925	ITWA1	0.882	0.899	0.832	0.899
FPAS2	0.844					ITWA2	0.927			
FPAS3	0.785					ITWA3	0.927			
FPAS4	0.857					Intention to Purchase				
FPAS5	0.871					ITP1	0.864	0.936	0.83	0.905
FPAS6	0.879					ITP2	0.936			
FPAS7	0.693					ITP3	0.93			

4.2. Structural model and hypothesis testing

In the results of structural model as shown in Figure 2, a coefficient of determination (R^2) is 0.639 for trust in products, 0.490 for trust in seller, 0.609 for intention to watch, and 0.653 for intention to purchase. This indicates that an adequate level of variability in the outcome of the data can be explained by the model. The paths and factors with $p > .05$ are omitted for simplicity. Table 5 summarizes all the path coefficients and gives the results of the hypotheses.

In the results, product quality ($\beta = 0.234$; $p < .003$) and price transparency ($\beta = 0.2$; $p < .001$) have significant positive influence on trust in sellers which supports H8b and H12b. However, seller image ($\beta = 0.157$; $p < .015$) and the content on seller's Facebook page ($\beta = 0.175$; $p < .015$) have low p -values but also low coefficients, indicating weak positive influence on trust in sellers but not significant enough thus not supporting H1b, and H14b. No other factor has significant influence on trust in sellers thus not supporting H2b, H3b, H4b, H5b, H6b, H7b, H9b, H10b, H11b, and H13b. None of the factors has significant influence on trust in products thus not supporting H1a, H2a, H3a, H4a, H5a, H6a, H7a, H9a, H10a, H11a, H20a, H12a, H13a, and H14a.

With regard to the role that trust in sellers and trust in products have on each other and on customer engagement, our results appear to show some similarities but also some contradictions as compared with Wongkitrungrueng and Assarut (2020). As for the similarity, our results show that trust in sellers could lead to customer behavior in terms of intention to watch ($\beta = 0.308$; $p < .001$) and intention to purchase ($\beta = 0.283$; $p < .001$), supporting H21b and H21c. As for the contradictory, while Wongkitrungrueng and Assarut (2020) finds that trust in products does not directly lead to any customer engagement, our results show that trust in products could directly lead to customer behavior in terms of intention to watch ($\beta = 0.2$; $p < .01$), supporting H22a but does not lead to intention to purchase thus not supporting H22b. Also, interestingly, while Wongkitrungrueng and Assarut (2020) has shown that trust in products leads to trust in sellers, our results show the other way around that trust in sellers could lead to trust in products ($\beta = 0.621$; $p < .001$) supporting H21a.

Our results also find that the pre-announcement of broadcast timing ($\beta = 0.222$; $p < .001$) has significant positive influence on consumer intention to watch the live stream which supports H19. However, pricing effect on consumer intention to watch has low p -value but also low coefficient ($\beta = 0.101$; $p < .044$), suggesting weak positive influence on consumer intention to purchase but not significant enough thus not supporting H20c. Pricing also does not have significant influence on consumer intention to watch, thus not supporting H20b. It is also interesting to note that seller pacing effect on consumer intention to watch has low p -value but also low coefficient ($\beta = -0.104$; $p < .05$) thus not supporting H17. And lastly, the intention to watch could lead to intention to purchase ($\beta = 0.538$; $p < .001$) supporting H23.

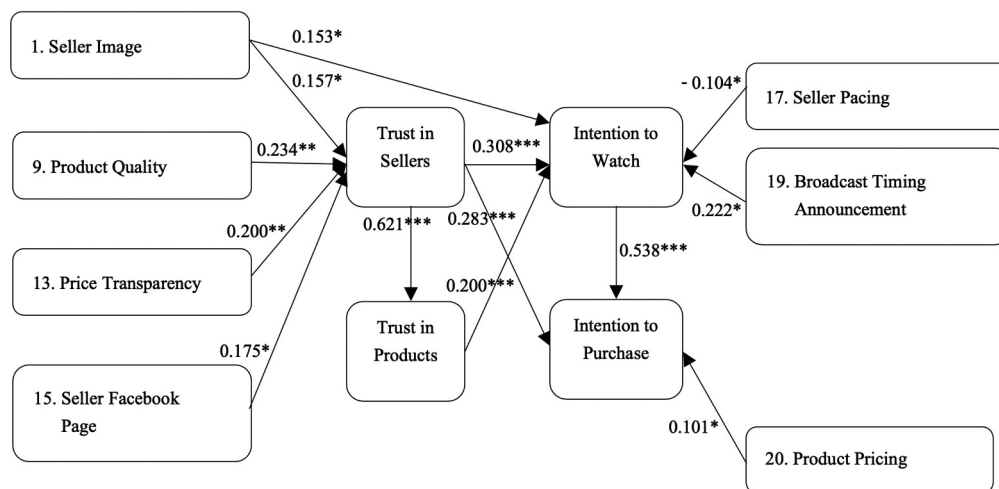
As for the remaining hypotheses, no other factors have significant influence on intention to watch, thus not supporting H1c, H2c, H3c, H4c, H5c, H6c, H15, H16, H7c, H8c, H9c, H10c, H11c, H12c, and H18. Interestingly, contradicting to the common belief, the number of live streaming viewers have no significant influence on trust and the intention to watch the live stream, thus not supporting H13a, H13b, and H13c. The seller's Facebook page does not have significant influence on the customer intention to watch, thus not supporting H14c.

4.3. Indirect and mediating effects

Although some of the factors do not appear to have any direct effects on the customer intention to watch the live stream, but they may have indirect effects (Hayes, 2009). Therefore, we tested indirect effects using bootstrapping procedure with 5,000 samples feature in SmartPLS. Table 6 shows the results. Only the factors that have significant indirect effects on customer intentions are shown.

As Table 6 shows, while product quality, price transparency, and seller's Facebook page do not have direct effect on intention to watch, each of them has indirect effect through trust in seller

Figure 2. Results of structural model where paths and constructs with $p > 0.5$ were omitted.



Note: paths and constructs with $p > 0.5$ were omitted.

* $p < .05$; ** $p < .01$; *** $p < .001$

(product quality, CI = 0.019 to 0.136; price transparency, CI = 0.024 to 0.113; and seller’s Facebook page, CI = 0.009 to 0.113), thus fully mediate the effect.

Also, interestingly, product quality and price transparency do not have direct effect on trust in product, but each has indirect effect through trust in seller (product quality, CI = 0.044 to 0.225; and price transparency, CI = 0.050 to 0.201). Trust in seller fully mediate the effect of each of product quality and price transparency on trust in product.

5. Discussion

This study examined the live streaming attributes that motivate shoppers to watch and shop fashion clothes on Facebook live streaming. We showed the relationships between live streaming attributes and the influence they have on consumer trust and intentions to watch and purchase. Our findings revealed how live steaming attributes including product quality, price transparency, seller image, seller Facebook page, seller pacing, broadcast timing announcement, and pricing are associated with customer trust and intentions.

The finding that product quality and price transparency have significant positive influence on trust in seller is consistent with prior studies. Halim et al. (2014) and Chinomona et al. (2013) showed that product quality has positive influence on customer trust and intention to purchase. Mittal and Agrawal (2016), Bertini and Gourville (2012), and Kim et al. (2020) showed that price transparency builds customer trust and enhances customer engagement and purchase intentions.

Also, the finding that seller image and seller Facebook page have weak positive influence on trust in seller is consistent with prior studies. Orth and Green (2009) showed that only some aspects of store image lead to trust (e.g., high service quality and frontline employee benevolence) but not the others (e.g., better pricing and product selections). Jung and Kim (2016) found that not all contents on Facebook page enhances brand trust. Specifically, comments made by brand does not impact customer trust, but posts made by other customers affect customer trust.

Our findings revealed that seller’s announcement of the broadcast schedule has a direct positive influence on customer intention to watch. This is due to the fact that some people are busy, so

Table 5. Result of path analysis

	Coefficient	Std. dev.	T Statistics	P-Values	f Square	Hypothesis result
Seller Image -> Trust In Product	-0.026	0.043	0.604	0.546	0.001	H1a: not supported
Seller Image -> Trust In Seller	0.157	0.065	2.425*	0.015	0.017	H1b: not supported
Seller Image -> Intention to Watch	0.153	0.067	2.283*	0.022	0.02	H1c: not supported
Seller Interactivity -> Trust In Product	0.035	0.059	0.591	0.555	0.001	H2a: not supported
Seller Interactivity -> Trust In Seller	-0.16	0.092	1.737	0.082	0.013	H2b: not supported
Seller Interactivity -> Intention to Watch	-0.004	0.077	0.059	0.953	0	H2c: not supported
Seller Presentation -> Trust In Product	-0.016	0.059	0.265	0.791	0	H3a: not supported
Seller Presentation -> Trust In Seller	-0.079	0.067	1.188	0.235	0.003	H3b: not supported
Seller Presentation -> Intention to Watch	-0.066	0.075	0.879	0.38	0.003	H3c: not supported
Seller Shopping Guidance -> Trust In Product	0.059	0.062	0.948	0.343	0.003	H4a: not supported
Seller Shopping Guidance -> Trust In Seller	0.027	0.083	0.328	0.743	0	H4b: not supported
Seller Shopping Guidance -> Intention to Watch	0.076	0.071	1.067	0.286	0.004	H4c: not supported
Seller Politeness -> Trust In Product	0.006	0.07	0.081	0.935	0	H5a: not supported
Seller Politeness -> Trust In Seller	0.131	0.084	1.559	0.119	0.007	H5b: not supported
Seller Politeness -> Intention to Watch	-0.096	0.081	1.184	0.236	0.005	H5c: not supported
Seller Verbal Attractiveness -> Trust In Product	0.005	0.062	0.075	0.94	0	H6a: not supported
Seller Verbal Attractiveness -> Trust In Seller	0.11	0.071	1.553	0.12	0.007	H6b: not supported
Seller Verbal Attractiveness -> Intention to Watch	-0.048	0.075	0.641	0.522	0.001	H6c: not supported
Fashion Product Assortment -> Trust In Product	-0.068	0.07	0.969	0.333	0.004	H7a: not supported

(Continued)

Table 5. (Continued)

	Coefficient	Std. dev.	T Statistics	P-Values	f Square	Hypothesis result
Fashion Product Assortment -> Trust In Seller	-0.063	0.072	0.875	0.381	0.002	H7b: not supported
Fashion Product Assortment -> Intention to Watch	0.046	0.07	0.651	0.515	0.002	H7c: not supported
Fashion Product Quality -> Trust In Product	0.104	0.084	1.243	0.214	0.009	H8a: not supported
Fashion Product Quality -> Trust In Seller	0.234	0.079	2.967**	0.003	0.034	H8b: supported
Fashion Product Quality -> Intention to Watch	0.017	0.067	0.251	0.802	0	H8c: not supported
Fashion Product Trendiness -> Trust In Product	-0.054	0.071	0.754	0.451	0.003	H9a: not supported
Fashion Product Trendiness -> Trust In Seller	0.015	0.075	0.199	0.842	0	H9b: not supported
Fashion Product Trendiness -> Intention to Watch	-0.051	0.059	0.871	0.384	0.002	H9c: not supported
Fashion Product Brandname -> Trust In Product	-0.045	0.054	0.834	0.404	0.003	H10a: not supported
Fashion Product Brandname -> Trust In Seller	-0.006	0.074	0.084	0.933	0	H10b: not supported
Fashion Product Brandname -> Intention to Watch	0.026	0.058	0.446	0.656	0.001	H10c: not supported
Fashion Product Personal Appeal -> Trust In Product	0.142	0.098	1.443	0.149	0.021	H11a: not supported
Fashion Product Personal Appeal -> Trust In Seller	0.023	0.071	0.316	0.752	0	H11b: not supported
Fashion Product Personal Appeal -> Intention to Watch	0.052	0.061	0.849	0.396	0.002	H11c: not supported
Price Transparency -> Trust In Product	0.057	0.057	1.008	0.314	0.003	H12a: not supported
Price Transparency -> Trust In Seller	0.2	0.06	3.357**	0.001	0.037	H12b: supported
Price Transparency -> Intention to Watch	0.024	0.058	0.41	0.682	0.001	H12c: not supported

(Continued)

Table 5. (Continued)

	Coefficient	Std. dev.	T Statistics	P-Values	f Square	Hypothesis result
Number of Viewers -> Trust In Product	-0.007	0.045	0.155	0.877	0	H13a: not supported
Number of Viewers -> Trust In Seller	0.085	0.061	1.405	0.16	0.006	H13b: not supported
Number of Viewers -> Intention to Watch	0.079	0.066	1.204	0.229	0.006	H13c: not supported
Seller Facebook Page -> Trust In Product	0.021	0.07	0.302	0.763	0	H14a: not supported
Seller Facebook Page -> Trust In Seller	0.175	0.072	2.436*	0.015	0.016	H14b: not supported
Seller Facebook Page -> Intention to Watch	-0.013	0.072	0.181	0.856	0	H14c: not supported
Seller Humor -> Intention to Watch	0.155	0.09	1.731	0.083	0.016	H15: not supported
Seller Sex Appeal -> Intention to Watch	0.057	0.043	1.324	0.186	0.005	H16: not supported
Seller Pacing -> Intention to Watch	-0.104	0.052	1.994*	0.046	0.012	H17: not supported
Background Ambiance -> Intention to Watch	0.028	0.058	0.486	0.627	0.001	H18: not supported
Broadcast Timing Announcement -> Intention to Watch	0.222	0.059	3.784***	0	0.053	H19: supported
Pricing -> Trust In Product	0.055	0.069	0.809	0.419	0.002	H20a: not supported
Pricing -> Intention to Watch	-0.074	0.066	1.123	0.261	0.004	H20b: not supported
Pricing -> Intention to Purchase	0.101	0.049	2.045*	0.041	0.019	H20c: not supported
Trust In Seller -> Trust In Product	0.621	0.059	10.557***	0	0.545	H21a: supported
Trust In Seller -> Intention to Watch	0.308	0.071	4.336***	0	0.077	H21b: supported
Trust In Seller -> Intention to Purchase	0.283	0.068	4.163***	0	0.076	H21c: supported
Trust In Product -> Intention to Watch	0.2	0.075	2.661**	0.008	0.036	H22a: supported
Trust In Product -> Intention to Purchase	-0.015	0.065	0.236	0.813	0	H22b: not supported
Intention to Watch -> Intention to Purchase	0.538	0.053	10.201***	0	0.417	H23: supported

* p < .05; ** p < .01; *** p < .001

Table 6. Indirect and mediating effects

	Total effect		Direct effect		Indirect effects			
	Coefficient	T statistics	Coefficient	T statistics	path	Coefficient	Percentile	Bias Corrected
FPQ -> ITW	0.139	1.982*	0.017	0.251	FPQ -> TIS -> ITW	0.072	[0.019;0.136]	[0.024;0.144]
PTR -> ITW	0.122	2.049*	0.024	0.41	PTR -> TIS -> ITW	0.062	[0.024;0.113]	[0.025;0.116]
SFP -> ITW	0.175	2.436*	-0.013	0.181	SFP -> TIS -> ITW	0.054	[0.009;0.113]	[0.011;0.119]
FPQ -> TIP	0.249	2.556*	0.104	1.243	FPQ -> TIS -> TIP	0.145	[0.044;0.225]	[0.058;0.238]
PTR -> TIP	0.182	2.516*	0.057	1.008	PTR -> TIS -> TIP	0.124	[0.050;0.201]	[0.052;0.203]

Notes. FPQ = Fashion Product Quality, SFP = Seller FB Page, PTR = Price Transparency

ITW = Intention to Watch, TIS = Trust in Seller, TIP = Trust in Product

* p < .05; ** p < .01; *** p < .001

they need to know about the broadcast ahead of time to arrange time to watch. Consistent with the finding of Swan et al. (1999), who showed that salespersons should take their time with the customers explaining each product thoroughly without having the customers feel rushed, our paper found that seller pacing has weak negative relationships with customer intention to watch the live stream suggesting that live streaming sellers should not rush through the products but spend ample time on them.

Additionally, our paper found product pricing to have a weak direct positive influence on customer intention to purchase. This is due to most live streaming sellers offering products at very competitive prices, so customers feel very little incentive to make purchase decision based on pricing alone. And as indicated earlier, the influence on the purchase intention of fashion clothing in live streaming was shown to be dominated by the product quality rather than prices. Also, our findings revealed that customer trust in seller has a direct positive influence on trust in product which is consistent with Swan and Nolan (1985), who showed that salespersons can build trust with their customers through their experience and knowledge of the products, which in turn could positively influence customer attitudes.

Finally, we found that trust in seller and trust in product have a direct positive influence on customer intention to watch and then to purchase. This finding is consistent with Jarvenpaa et al. (2000), who found that customer trust in a store increases the intentions to shop from that store.

5.1. Theoretical contribution

This study contributes to the online social commerce research by being among the early studies on live streaming shopping. While focusing on the fashion clothing products, this study is among the first live streaming shopping studies to shed new insights in this product category. We extend recent live streaming shopping studies (Cai et al., 2018; Sun et al., 2019; Wongkitrungrueng et al., 2020) that involve live streaming values, customer trust, and customer engagement by examining live streaming shopping attributes in affecting customer intentions to watch and purchase.

5.2. Managerial implication

This study provides insights that may benefit managers in online social commerce. Live streaming sellers can focus on creating more values in the important attributes to better serve their customers thus enabling higher intentions to watch and purchase. Sellers could carry higher-quality products and ensure that their product pricing is transparent, so that the customers would feel trusted and be more willing to make purchase from the sellers. Also, sellers could plan and preannounce their broadcast timing to give enough time for customers to manage their busy schedule.

5.3. Limitations and future research

Since the studies in the area of live streaming shopping is relatively new and still limited in numbers, especially in the areas of fashion clothing products, more research efforts in this area is needed to fully understand its impact on customer behaviors. This study is limited to one platform, Facebook live streaming, one product category, fashion clothing, and one country, Thailand.

In terms of product category, it is possible that the live streaming attributes may have different impacts on customer trust and behaviors in different product categories such as home organizers, fitness accessories, and small kitchen appliances which are more functional than stylish and fun. Moreover, in addition to Facebook live streaming, there are other popular live streaming shopping platforms such as Lazada and Shopee where the nature of users could be different, thus providing different results.

Lastly, the people in Thailand may behave differently in shopping behaviors as compared with shoppers in other countries such as China and the western countries. This means that the different population of the study and other antecedents such as different live streaming attributes could be incorporated into future studies.

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Appendix A. Measurement scales

Measurement scales		
Seller Image		
SIMA1*	1.	Seller is seen as continuously improving features
SIMA2	2.	Seller is seen as trustworthy
SIMA3	3.	Seller is seen as offering good value-for-money
SIMA4	4.	Seller is seen as being of excellent quality
SIMA5*	5.	Seller is seen as being in fashion
SIMA6*	6.	Seller is seen as being used by friends
SIMA7*	7.	Seller is seen as a reputed seller
SIMA8*	8.	Seller is seen as a leading seller
SIMA9*	9.	The shopping with the seller is a prestige symbol
SIMA10*	10.	Seller recommended by famous people
SIMA11	11.	Seller you particularly like/find attractive
SIMA12	12.	Seller in keeping with your lifestyle
SIMA13	13.	Seller is likeable
SIMA14	14.	Seller is approachable
SIMA15	15.	Seller is very warm
Seller Interactivity		
SINT1	16.	Seller is effective in gathering viewers' feedback
SINT2	17.	Seller facilitates two-way communication between herself/himself and viewers
SINT3	18.	Seller makes me feel she/he wanted to listen to her/his viewers
SINT4	19.	Seller gives viewers the opportunity to talk to her/him
SINT5	20.	Seller responds to my questions very quickly
SINT6	21.	I am able to obtain the information I wanted without any delay
SINT7	22.	I feels I was getting instantaneous information
Seller Presentation		
SPRE1	23.	Seller gives me details of the product
SPRE2	24.	Seller makes product attributes visible to me

(Continued)

(Continued)		
Measurement scales		
SPRE3	25.	Seller makes information about how to use products visible to me
Seller Shopping Guidance		
SSG1	26.	Seller provides me with information on alternative products
SSG2	27.	Seller helps me establish my product needs without any restrictions
SSG3	28.	Seller helps me identify product attributes that fit my needs
SSG4	29.	Seller provides me with product customization based on my requirements
Seller Politeness		
SPOL1	30.	Seller is friendly
SPOL2	31.	Seller is approachable
SPOL3	32.	Seller is polite
SPOL4	33.	Seller is likeable
SPOL5	34.	Seller is very warm
Seller Verbal Attractiveness		
SVA1	35.	I enjoy listening to seller talks
SVA2	36.	Listening to seller talks is fun
SVA3	37.	Seller is an attractive speaker
SVA4	38.	Listening to seller talks is interesting
Seller Humor		
SHUM1	39.	Seller is funny
SHUM2	40.	Seller is humorous
SHUM3	41.	Seller is amusing
SHUM4	42.	Shopping with seller is entertaining
SHUM5	43.	Shopping with seller is a way of relieving stress
SHUM6	44.	I enjoy shopping with seller
SHUM7	45.	I forget my problems while shopping with seller
Seller Sex Appeal		
SSA1	46.	I think the seller is sexy
SSA2	47.	I think the seller is good looking
SSA3	48.	I think the seller clothing is revealing
SSA4	49.	I think the seller has sexual suggestive behavior

(Continued)

<i>(Continued)</i>		
Measurement scales		
SSA5	50.	The streamer was quite handsome/pretty
SSA6	51.	The streamer was attractive physically
Seller Pacing		
SPAC1	52.	Seller moves through items at an appropriate speed
SPAC2	53.	Seller does not spend too much time on any item
Fashion Product Assortment		
FPAS1	54.	Seller has a wide variety of fashion products to choose from
FPAS2	55.	Current fashions and new products are easily available at this seller
FPAS3	56.	Seller is a “one-stop-shop” for my shopping
FPAS4	57.	The choice of products of this seller is sufficient
FPAS5	58.	This seller carries a wide selection of products to choose
FPAS6	59.	This seller serves the majority of my online shopping needs
FPAS7	60.	Seller always have products in stock
FPAS8*	61.	During my shopping with seller, I noticed stock-outs of products that were of my interest (reverse coded)
Fashion Product Quality		
FPQU1	62.	Seller offers quality fashion products
FPQU2	63.	Seller offers reliable fashion products
FPQU3	64.	Seller offers fashion products that last
FPQU4	65.	Products sold through seller seem genuine to me
FPQU5*	66.	Products sold through seller appear to be authentic
FPQU6	67.	The products sold through seller are of high quality
FPQU7*	68.	Seller carries low quality products (reverse coded)
Fashion Product Trendiness		
FPTR1	69.	Products sold through seller tend to be up-to-date and on-trend

(Continued)

<i>(Continued)</i>		
Measurement scales		
FPTR2*	70.	Seller carries outdated products (reversed coded)
FPTR3	71.	Seller carries new style products
Fashion Product Brand Name		
FPBN1	72.	Seller stocks “brand name” merchandise
FPBN2	73.	Seller carries good brand names products
FPBN3	74.	The products sold through seller are very well-known brands
Pricing		
FPPR1	75.	Most of the fashion products offered by the seller reflect a good price for the value
FPPR2	76.	Seller offers good discounts
FPPR3	77.	Seller has a great deal of value for the money I would spend
FPPR4	78.	Seller has good prices
Fashion Product Personal Appeal		
FPPA1	79.	The fashion style of this seller appeals to me
FPPA2	80.	Most of the fashion products offered by the seller reflect my fashion style
FPPA3	81.	Seller offers fashion products matching my fashion style
Price Transparency		
PTRA1	82.	Seller does not have any “hidden costs” in the displayed price
PTRA2	83.	I do not have to worry about being charged additional amounts when I purchase a product from this seller
PTRA3	84.	Seller clearly mentions what charges will be added to the final price
PTRA4	85.	The manner in which the seller prices its products is transparent
Background Ambiance		
BAMB1	86.	The atmosphere of this live stream is depressing-cheerful
BAMB2	87.	The atmosphere of this live stream is dull/entertaining
BAMB3	88.	The atmosphere of this live stream is boring/stimulating
BAMB4	89.	The atmosphere of this live stream is drab/colorful

(Continued)

<i>(Continued)</i>		
Measurement scales		
Broadcast Timing Announcement		
BTAN1	90.	Seller sufficiently preannounces the time of their live stream
BTAN2	91.	I have time to preplan to watch the live stream
BTAN3	92.	I have time to clear my schedule to watch the live stream
Number of Viewers		
NVIE1	93.	The number of viewers of this live stream is small-large
NVIE2	94.	I think the number of viewers of this live stream is appropriate
Seller Facebook Page		
SFBP1	95.	I think other customers posted favorable comments on seller's FB page
SFBP2	96.	I think seller responds well in the comments posted on seller's FB page
SFBP3	97.	I think seller often shows evidence of recent orders being shipped on seller's FB page
SFBP4	98.	I think seller often updates new product information on seller's FB page
SFBP5	99.	I think seller's FB page has sufficient number of followers
SFBP6	100.	I think seller's FB page has sufficient movements
Trust In Seller		
TISE1	101.	I believe in the information that the seller provides through live streaming.
TISE2	102.	I can trust sellers that use live streaming.
TISE3	103.	I believe that sellers who use live streaming are trustworthy.
TISE4	104.	I do not think that sellers who use live streaming would take advantage of me.
Trust In Product		
TIPR1	105.	I think the products I order from live stream will be as I imagined.
TIPR2	106.	I believe that I will be able to use products like those demonstrated on live stream.
TIPR3	107.	I trust that the products I receive will be the same as those shown on live stream

(Continued)

<i>(Continued)</i>		
Measurement scales		
Intention to Watch		
ITWA1	108.	I intend to continue watching the seller live stream in the future
ITWA2	109.	I will always try to watch the seller live stream in my daily life
ITWA3	110.	I plan to continue to watch the seller live stream frequently
Intention to Purchase		
ITP1	111.	I will consider the seller as my first shopping choice.
ITP2	112.	I intend to purchase products or services through the seller
ITP3	113.	I expect that I will purchase products or services through the seller



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