



A Study on the Value Destruction Caused by Incomplete Interaction Behaviors on a Live Shopping Platform

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Abstract. This study aims to understand the impact of incomplete interaction behaviors on value destruction in online shopping. Incomplete interaction behaviors include incomplete product interaction, incomplete information interaction and incomplete parasocial interaction. Additionally, negative interpersonal and intrapersonal relationships are used as mediators in this study. Views were collected from 522 users in Taiwan who have used livestream platforms for shopping and had negative experiences. An online questionnaire was designed and sent to livestreaming customers, and quota sampling was employed to enhance the sample representativeness. The empirical results were produced by covariance-based structural equation modeling with AMOS and show that incomplete parasocial interaction has the greatest impact on value destruction via negative interpersonal relationships. The negative intrapersonal relationships were not found to have mediation effects in this study. The practical implications for individuals who plan to join the livestream shopping industry are not only able to showcase products, but also appropriately disclose their personas to build relationships with customers and interact with those who show their emotions or views. Managing customer-to-customer interactions in the livestreaming process is equally important, as negative feelings among customers directly result in value destruction. In other words, streamers should focus on training themselves in the aspects of what product and personal information should be disclosed to the public and focus on observing and managing the feelings and emotions of their live customers as well as the consumer-to-consumer relationships.

Keywords: Destruction of value, Incomplete information interaction, Incomplete parasocial interaction, Incomplete product interaction, Intrapersonal relationships, Interpersonal relationships, Livestream shopping.

1 | BACKGROUND

Livestream shopping refers to selling and promoting products through livestream services on digital platforms and has gained popularity since it was first introduced in 2016 (Chen, 2021). In 2020, the value of the global market for livestream shopping had reached over US\$ 5 billion and was expected to grow (Grand View Research, 2020). In Taiwan, over 70% of online users have engaged in real-time shopping and nearly 70% prefer livestream shopping, showing a decline in traditional e-commerce platforms (Market Intelligence & Consulting Institute, 2023). Therefore, understanding more about this industry is crucial.

One of the advantages of livestreaming commerce is the live engagement with customers, when the streamers interact in real time with customers and answer their questions regarding the products/services, just like shopping in a physical store (Xu, Huang, & Shang, 2021). Previous studies focus more on the antecedents of value creation or co-creation under livestream shopping (e.g., Liu, Chung, Tan, & Peng, 2024; Xie, Yu, Huang, & Zhang, 2022) and very few focus on value destruction or co-destruction (e.g., Wang, Zhang, & Zhang, 2024). As interactions are the key differences between traditional online and livestream shopping, there is limited research examining the relationships between interactions and value creation or destruction. Based on this, the research problem on how interactions in livestream shopping affect customers' perceptions of value, particularly negative aspects, is formed.

The study separates interactions into three different types, which is considered the first innovation of this research. The three incomplete interactions are product, information, and parasocial interactions. Product interactions are for the purpose of obtaining or sharing relevant information based on an understanding of the products (Wu, Chen, Pan, & Xu, 2022). For example, streamers share product (e.g., clothes) details by display and match the clothes sold (Keeling, Keeling, De Ruyter, & Laing, 2021). Information interactions are based on knowledge and are used to obtain more information or exchange relevant information (Morente-Molinera, Kou, Pang, Cabrerizo, & Herrera-Viedma, 2019). For example, streamers provide non-product information such as current popular trends in the fashion industry (Matute, Polo-Redondo, & Utrillas, 2016; Solmi et al., 2021). Parasocial interactions are based on an understanding of the needs of social relationships from audiences (Yuan et al., 2022). For example, streamers share some personal information about their hobbies and lives.

The second innovation of this study is the division of interpersonal and intrapersonal relationships, which act as the mediators. Studies (e.g., Adam, 2021) have found that customers' interpersonal, intrapersonal and other types of interactions with products or services have an impact on value destruction. This study takes a more focused approach to inter- and intrapersonal considerations only.

The purpose of this study is to explore how incomplete interaction behaviors on livestream shopping affect the destruction of value. The results of this study aim to fill current gaps in the research and provide practical suggestions for the livestreaming industry and brand practitioners in order to ensure a competitive advantage (Sun, Shao, Li, Guo, & Nie, 2019).

This paper is structured as follows: A literature review of the variables involved is presented first; hypothesis development is delineated to form the research framework; the methodology section provides information on sampling, data collection and analysis; the research findings are provided; a discussion of the findings and the conclusion are presented; and lastly, the limitations and future research ideas are discussed.

2 | LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Dialogic engagement (DE) theory states that service delivery involves understanding how individual inputs enhance the improvement of shared understanding and cognitive learning during interactions between related parties (Kent & Taylor, 2018). This theory can be used to understand how co-creation behaviors evolve over time based on the interactions between consumers and service providers (Keeling et al., 2021). Complete and/or incomplete expression then becomes a core element of dialogue (Kent & Taylor, 2018; Liu, Li, Dai, & Guo, 2021), which plays an important role in influencing these engagements. Therefore, incomplete content or poor quality of expressions may become a new shared meaning between related parties (Cissna & Anderson, 2012) and potential negative outcomes are recognized if the dialogue is inappropriately employed, mismanaged, or abused, resulting in value co-destruction (Echeverri & Skålén, 2011). Based on DE theory, livestream shopping facilitates dialogue between live broadcasters and customers in terms of in-person explanation and sequential responses (Cissna & Anderson, 2012), and incomplete dialogue may bring value destruction. Therefore, DE theory is used as the foundation of the research, focusing on the influence of incomplete dialogue/interactions on value destruction.

The three types of incomplete interactions in this research are incomplete product interaction, incomplete information interaction, and incomplete parasocial interaction and are explained below.

2.1 | Incomplete Product Interaction

Product interaction refers to the interaction between buyers and sellers to gain or share information regarding the products or services with the main purpose of ensuring that the products or services meet the needs of the buyers (Liu et al., 2021). However, incomplete product interactions occur when customers do not obtain sufficient product information due to the seller's lack of understanding of the products. In the context of livestream shopping, inexperienced or careless live broadcasters may offer incomplete marketing information or provide insufficient information when answering questions (Lu & Chen, 2021). Therefore, incomplete product information can prevent customers from making purchase decisions in livestream shopping.

2.2 | Incomplete Information Interaction

The interaction of information in the electronic world refers to the narrow sense of electronic word-of-mouth (eWoM). Berger (2014) describes eWoM as the social sharing of information between internet users, and the information shared can be feelings and emotions regarding their product experiences and service encounters (Golmohammadi, Mattila, & Gauri, 2020) and not directly about the products themselves. Information shared by others attracts a high level of interest from shoppers and serves as a large number of reviews on the platforms (Sung, Chung, & Lee, 2023) and shows the credibility of these reviews (Fileri, Hofacker, & Algezauzi, 2018). Based on the above, it is believed that the more interactive the platforms/media, the stronger the consumer experience (Klein, 2003).

Incomplete information sharing can bring negative experiences for customers, which influences their information sharing behavior. Nam, Baker, Ahmad, and Goo (2020) found that disconfirmation and dissatisfaction with previous information shared by others have positive effects on negativity in relation to shared content. In the context of livestream shopping, if shoppers consider the platforms to have fewer interactions or have doubts regarding the credibility of the reviews, incomplete information interactions are perceived.

2.3 | Incomplete Parasocial Interaction

The theory of parasocial interaction (PSI) explains the imagined or illusory social relationships and interactions that the audience has with media characters or personae (Rasmussen, 2018). These media personae may appear to have something in common with the audience, as people like to identify people who are similar to them (Kandel, 1978), particularity in their behaviors. This is because people who view the world in a similar way find it easier to interact with each other (Duck & Barnes, 1992) and they may be attracted to similar things too.

Physical attractiveness of media personae, e.g., celebrities, also plays an important role in PSI. People are often drawn to media personae who are physically, personally, and behaviorally attractive (Yuan et al., 2022). Women in particular have a desire to look like the celebrities they admire, as it gives a sense of belonging (Greenwood, Pietromonaco, & Long, 2008). On the opposite side, media personae who build an insufficient rapport with their audience may be perceived to have incomplete PSI with their audience. In the context of livestream shopping, incomplete PSI means that live broadcasters may not fully satisfy the audience in terms of appearance and behavior.

2.4 | Negative Intrapersonal Relationships

Intrapersonal relationships refer to an individual's thoughts regarding an activity (Gumparthy, Ambatipudi, & Narang, 2022) or the inner life and thoughts of an individual (Göktaş & Kaya, 2022). Therefore, negative intrapersonal relationships are close to the psychological dissonance of an individual, and it would distract an individual's attention from what he/she is facing (e.g., services, products) (Adam, Taale, & Adongo, 2020; Loi & Pearce, 2012). Therefore, once an individual has negative intrapersonal issues caused by things other than the services or products, the value of the services or products will be perceived as lower (Adam, 2021). In the livestream shopping context, negative intrapersonal relationships may be associated with the information shared by streamers or other shoppers, or their interactions during livestreaming which may affect the individuals who are purely observers.

2.5 | Negative Interpersonal Relationships

Interpersonal relationships relate to an individual's relationships with other people (Göktaş & Kaya, 2022; Gumparthy et al., 2022). A negative interpersonal conflict or relationship between two individuals is based on incompatible choices and opinions (Dogari, Apuke, & Shadrach, 2018). This relationship may manifest in different ways, such as loss of interest in something, restlessness, worry, uneasiness, illness, indecision, and depression. In the livestream shopping context, interpersonal relationships are built when individuals interact with streamers and other shoppers. Therefore, if individuals having negative interpersonal relationships in the social commerce livestreaming room, it may potentially damage their experience (Adam, 2021).

2.6 | Value Destruction

Value creation refers to the value of services or products created through integrating with resources and normally contains a sense of improved well-being (Grönroos, 2011). Conversely, value destruction is value destroyed or diminished based on a similar manner, resulting in “a decline in the well-being of at least one system” (Plé & Chumpitaz Cáceres, 2010) due to the misuse of resources available (Bruce, Wilson, Macdonald, & Clarke, 2019; Plé & Chumpitaz Cáceres, 2010; Smith, 2013). Misuse of resources in different research contexts vary. Cases, such as functions of online interactions with brands, are limited (Quach & Thaichon, 2017), and a poor quality process between customers and suppliers (Macdonald, Kleinaltenkamp, & Wilson, 2016) results in diminishing the original value proposition of the product or service.

In the livestream shopping context, shoppers' purchase decisions are made based on the value proposition of the products or services provided by the streamers, as well as the reviews contributed by other shoppers. Therefore, the resources in this context are mainly provided by streamers and other shoppers. The strategies employed by streamers in livestreaming may affect how shoppers evaluate the products. For example, various promotions are often offered in livestream shopping, such as time-limited discounts (Ni & Ueichi, 2024). Other shoppers' instant written reviews of the products also encourage shoppers to purchase, with a sense of pressure due to availability (Men & Zheng, 2019). Although offering discounts is one way to make shoppers avoid regret (Ni & Ueichi, 2024), purchase decisions during the livestreaming process may still result in regret or dissatisfaction with the products because of the pressure to make a decision in a very short period of time. Therefore, the interactions during livestreaming may also devalue the products or services.

2.7 | Hypothesis Development

The research framework is provided in Figure 1, and the hypothesis development follows.

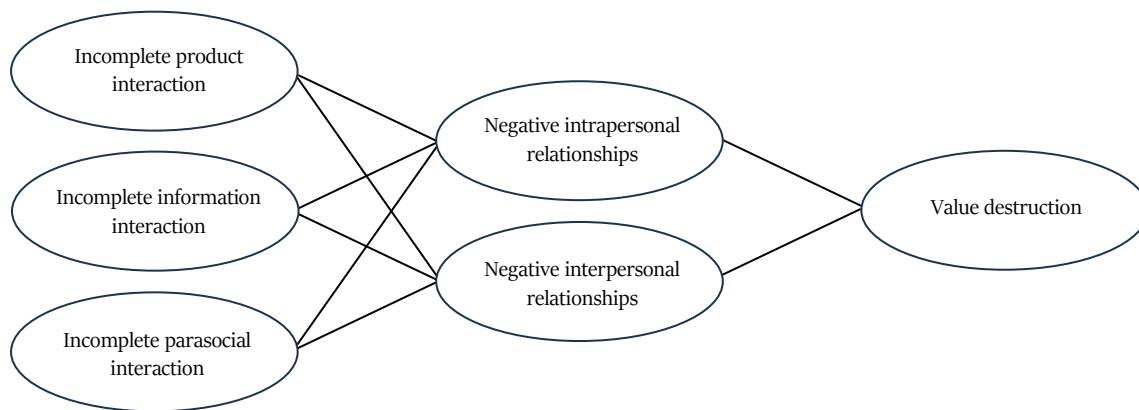


Figure 1: The research framework.

2.7.1 | Incomplete Product Interaction and Negative Intrapersonal Relationships

When shoppers are in the livestreaming room, they see the streamers introduce and showcase the products and answer questions from the audience. Incomplete product information occurs when streamers do not present the product well or do not answer questions properly. According to Chen, Chen, and Tian (2022), streamers must have a good understanding of the products they sell. In addition, the interactions between the shoppers (customer–customer) and streamers and shoppers (streamer–customer) in the rooms may also affect the shoppers who observe (without interacting with others) the live streaming process. Particularly when streamers interact with shoppers who have used the products before, the content of the interactions may not provide useful information to those who have never used the product before (Sun et al., 2019). In other words, streamers might ignore the information needed by potential new buyers. Therefore, some shoppers will perceive the product information as not useful or incomplete and may form negative feelings toward the product-related information interactions. Accordingly, we hypothesize that:

H1: *Incomplete product interactions positively affect negative intrapersonal relationships.*

2.7.2 | Incomplete Product Interaction and Negative Interpersonal Relationships

In an incomplete product interaction, a streamer may not differentiate the interactions with different shoppers. Therefore, the answers provided by streamers may be too standardized and official (Keeling et al., 2021), meaning that some questions raised are not answered properly. For instance, answers given to shoppers are too similar, leaving them dissatisfied (Wu et al., 2022). Standardized answers are not desirable in a livestreaming room, as customized content is expected. Furthermore, some questions raised may be ignored. Therefore, audiences who perceive incomplete product interaction with streamers may perceive negative interpersonal relationships. Accordingly, we hypothesize that:

H2: *Incomplete product interactions positively affect negative interpersonal relationships.*

2.7.3 | Incomplete Information Interaction and Negative Intrapersonal Relationships

Information interactions involve non-product-related information shared by streamers or other shoppers in the livestreaming rooms or platforms. As mentioned, the number of reviews in the livestreaming process (Sung et al., 2023) and the credibility of the reviews (Filieri et al., 2018) are important information for shoppers who do not participate in the discussions or interactions. These shoppers make purchase decisions based on the number of interactions – the more, the better. However, if the review number is low and the content does not seem credible, it may induce shoppers' dissonance about the products. Accordingly, we hypothesize that:

H3: *Incomplete information interactions positively affect negative intrapersonal relationships.*

2.7.4 | Incomplete Information Interaction and Negative Interpersonal Relationships

Incomplete information interactions may also be caused by disorganized information which leads to poor communication, particularly if the information is generated by a group of people (Solmi et al., 2021). In the livestreaming context, shoppers appreciate a large number of reviews, but if the content is poorly presented or contains no value for evaluation, shoppers may have doubts about the reviews and doubt those who leave these reviews. As poor communication affects interpersonal relationships (Khan, Iqbal, & Hussainy, 2016), we hypothesize that:

H4: *Incomplete information interactions positively affect negative interpersonal relationships.*

2.7.5 | Incomplete Parasocial Interaction and Negative Intrapersonal Relationships

In an incomplete parasocial interaction, if a streamer does not satisfy the emotional needs of shoppers, some shoppers may have a feeling of isolation, hence a sense of loneliness (Li, Guan, Chong, & Hou, 2018). Studies have shown that streamers need to disclose themselves to shoppers and share more information than products only (Karagür, Becker, Klein, & Edeling, 2022). However, self-disclosure of information is a double-edged sword, and it is also possible that consumers are not interested in what is being said. In the livestreaming context, if the content shared by the streamers is not of interest to the shoppers, a sense of time-wasting emerges (Li et al., 2018) causing negative “inner thoughts” among the shoppers. Accordingly, we hypothesize that:

H5: *Incomplete parasocial interactions positively affect negative intrapersonal relationships.*

2.7.6 | Incomplete Parasocial Interaction and Negative Interpersonal Relationships

Streamers who perform well in parasocial interactions understand the needs of the shoppers who do not like to feel left out (Li et al., 2018), who want to feel connected to the streamers (Chen, Yeh, & Lee, 2021), and who have high social media reliance (Wang, Lee, & Hua, 2015). Basically, successful streamers need to make shoppers happy by selecting relevant personal information to disclose and interact with shoppers who need help or attention. However, the self-disclosure may only benefit some shoppers, and some shoppers may feel left out or ignored (Melumad & Meyer, 2020). This may cause jealousy among some shoppers in these circumstances (Neenan & Dryden, 2013) and may produce negative interpersonal relationships between streamers and shoppers or between shoppers. Accordingly, we hypothesize that:

H6: *Incomplete parasocial interactions positively affect negative interpersonal relationships.*

2.7.7 | Negative Intrapersonal Relationships and Value Destruction

As mentioned, an intrapersonal relationship is an individual's thoughts regarding an activity (Gumparthy et al., 2022) and occurs within an individual (Dogari et al., 2018). In the livestreaming context, the activities affecting individuals/shoppers could be the misuse of resources (Bruce et al., 2019; Plé & Chumpitaz Cáceres, 2010; Quach & Thaichon, 2017), leading to value destruction, for example, if streamers showcase products inappropriately or have a lack of understanding of the products. If these interactions are not satisfactory to the shoppers as observers, they may have negative emotions which form negative thoughts regarding the products or services. The degree of value of the products or services destroyed is subject to individuals' own psychographic capacity (Adam et al., 2020), meaning that the stronger the negative intrapersonal thoughts about the products or services, the more the value of these products or services is destroyed. Accordingly, we hypothesize that:

H7: *Negative intrapersonal relationships positively affect value destruction.*

2.7.8 | Negative Interpersonal Relationships and Value Destruction

A negative interpersonal relationship between people is normally due to incompatible choices and opinions (Dogari et al., 2018). Interpersonal relationships within a group are often overlooked when the number of people in the group is large (Wang & Yotsumoto, 2019). In the livestreaming context, streamers have to focus on product introduction and interactions with shoppers. It is very likely that some shoppers are not taken care of and feel excluded. Streamers may not be able to manage shopper–shopper interactions, which can result in negative interpersonal relationships, hence negative emotions among shoppers. Kim, Byon, and Baek (2020) state that negative emotions make people take actions that destroy shared values of products. Accordingly, we hypothesize that:

H8: *A negative interpersonal relationship positively affects value destruction.*

3 | RESEARCH METHOD

3.1 | Measurement

In this study, three sub-constructs for incomplete product interaction are included, with a total of nine measurable items adapted from Nambisan and Baron (2009); incomplete information interaction involves three sub-constructs, with nine measurable items adapted from Matute et al. (2016); and incomplete parasocial interaction has three sub-constructs, with nine measurable items adapted from Yuan et al. (2022). Negative intrapersonal relationships are measured by six measurable items within two latent constructs: negative self and negative site (Adam, 2021). Negative interpersonal relationships have two sub-constructs: direct interaction and indirect interaction, with six measurable items adapted from Adam (2021). Value destruction is measured by three sub-constructs, with nine measurable items adapted from Zhang, Lu, Torres, and Chen (2018). Table 2 contains the details of the sub-constructs.

3.2 | Data Collection and Sampling

The data collection instrument is an online questionnaire, which was sent to individuals who entered the livestreaming shopping platform (Instagram) randomly where the researcher also joined. Respondents were asked about their livestream shopping experiences in platforms such as Facebook, Instagram, LINE or Shopee. The focused products in this study are daily use products, for example, food, clothes, and pet products. There was a filter

question at the beginning of the questionnaire to make sure that the voluntary respondents are truly users of livestream shopping to enhance the validity of the results.

Quota sampling was employed to increase the representativeness of the respondents to ensure that their statistical characteristics met the demographic characteristics of the population. Gender and age are the two characteristics used for this sampling strategy, and the corresponding quotas are based on the investigation by [NapoleonCat \(2022\)](#) of Instagram users in Taiwan. Based on the estimated population structure, a sample structure was designed to determine how many respondents were needed for each cell (see [Table 1](#)).

Data collection was carried out in March 2023 for four weeks, and 522 valid respondents were obtained. [Table 1](#) shows the target population information in terms of gender and age, the ideal sample proportions, and the empirical samples for this study. It shows that the proportions of gender and age in our samples are very close to the real target population.

Table 1: Population characteristics, designed samples, and empirical samples.

Population characteristics	Items	People	Percent	
Gender	Male	4,884,267	44.9%	
	Female	5,993,833	55.1%	
	Total	10,878,100	100%	
Age	13-17 years	609,174	5.6%	
	18-24 years	27,956,718	25.8%	
	25-34 years	3,698,554	34%	
	35-44 years	2,175,620	20%	
	Over 45 years	1,588,203	14.6%	
	Total	10,878,100	100%	
Designed samples	Item	Male	Female	Total
	13-17 years	13 (2.5%)	15 (3.1%)	28 (5.6%)
	18-24 years	58 (11.6%)	71 (14.2%)	129 (25.8%)
	25-34 years	76 (15.3%)	94 (18.7%)	170 (34%)
	35-44 years	45 (9.0%)	55 (11.0%)	100 (20%)
	Over 45 years	33 (6.6%)	40 (8.0%)	73 (14.6%)
	Total	225 (44.9%)	275 (55.1%)	500 (100%)
Empirical samples	Item	Male	Female	Total
	13-17 years	13 (2.5%)	17 (3.3%)	30 (5.7%)
	18-24 years	62 (11.9%)	74 (14.2%)	136 (26.1%)
	25-34 years	85 (16.3%)	96 (18.4%)	181 (34.7%)
	35-44 years	45 (8.6%)	55 (10.5%)	100 (19.2%)
	Over 45 years	33 (6.3%)	42 (8.0%)	75 (14.4%)
	Total	238 (45.6%)	284 (54.4%)	522 (100%)

Source: [NapoleonCat \(2022\)](#); this study.

Harman’s single-factor test of the unrotated principal components method was employed to test the common method bias (CMB). CMB is detected when a single factor accounts for most of the covariance. The results indicated that the variance elucidated by the first factor was 36.72% (i.e., < 50%), confirming that CMB is unlikely to affect the results of this study ([Podsakoff, MacKenzie, Lee, & Podsakoff, 2003](#)). The risk of spurious relations among the dependent and independent variables is avoided by introducing the cover picture at intervals.

4 | EMPIRICAL RESULTS AND HYPOTHESIS TESTING

4.1 | Reliability and Validity

Cronbach’s alpha, the average variance extracted (AVE), and composite reliability (CR) were calculated for all constructs. The [Fornell and Larcker \(1981\)](#) threshold values were used for convergent validity; each item’s factor loading should exceed the value of 0.70, Cronbach’s alpha scores should exceed 0.60, CR values should exceed 0.60, and the AVE values should exceed 0.40. [Table 2](#) shows that all item loadings, reliability scores, CR, and AVE all exceed the threshold values. Therefore, reliability and validity are achieved.

Table 2: Reliability and validity analysis results.

Variable	Sub-construct	CA	Item-total correlation	Loading	CR	AVE
Incomplete product interaction	Before buying	0.814	0.619	0.717	0.669	0.404
	During buying		0.727	0.603		
	After buying		0.658	0.58		
Incomplete information interaction	Information quantity	0.851	0.630	0.746	0.844	0.644
	Information credibility		0.796	0.825		
	Information quality		0.741	0.834		
Incomplete para-social interaction	Social attraction	0.737	0.559	0.799	0.806	0.582
	Physical attraction		0.642	0.751		
	Ability attraction		0.610	0.738		
Negative intrapersonal relationship	Direct interaction	0.714	0.652	0.696	0.614	0.443
	Indirect interaction		0.652	0.635		
Negative interpersonal relationship	Negative site	0.939	0.886	0.812	0.774	0.631
	Negative self		0.886	0.777		
Value destruction	Organizational destruction	0.900	0.818	0.820	0.839	0.723
	Technical destruction		0.818	0.880		

Note: CA = Cronbach’s α ; CR = $(\text{Sum of standardized loading})^2 / [(\text{Sum of standardized loading})^2 + (\text{sum of measurement error})]$; and AVE = $(\text{Sum of square standardized loadings}^2) / [(\text{Sum of square standardized loadings}^2) + (\text{Sum of measurement error})]$.

4.2 | Structural Equation Modeling Results

In this study, the results are: $\chi^2/df = 2.128$, CFI = 0.987, NFI = 0.976, IFI = 0.987, GFI = 0.970, AGFI = 0.930, SRMR = 0.049 and RMSEA = 0.047, thus reflecting a satisfactory model fit. Table 3 shows the hypothesis testing results. Only one hypothesis is not supported (H7), indicating that negative intrapersonal relationships do not positively influence the destruction of values ($\beta_7 = 0.016$, $t = 0.286$, $p = 0.775$).

Table 3 also shows the results of the examination of multicollinearity and the effect sizes. The variance inflation factor (VIF) values are all below 3.0 and are considered acceptable (Hair, Hollingsworth, Randolph, & Chong, 2017; Hair, Risher, Sarstedt, & Ringle, 2019). The coefficients of determination (R^2) express a stronger explanatory power as they are greater than 0.26 (Hair et al., 2017; Hair et al., 2019). Therefore, the effect sizes (f^2) ranging from 0.357 to 1.061 are medium to large.

Table 3: Hypothesis testing results in the structural equation model.

Hypothesized path	Coefficient	T-value	P-value	R ²	f ²	VIF
H1: Incomplete product interaction → Negative intrapersonal relationship	$\beta_1 = 0.255$	1.956	0.050*	0.515	1.061	1.600
H2: Incomplete information interaction → Negative intrapersonal relationship	$\beta_2 = 0.291$	3.333	0.000**	0.316	0.461	1.600
H3: Incomplete parasocial interaction → Negative intrapersonal relationship	$\beta_3 = 2.077$	3.308	0.000**	0.398	0.661	1.600
H4: Incomplete product interaction → Negative interpersonal relationship	$\beta_4 = 0.300$	2.157	0.031*	0.441	0.789	2.060
H5: Incomplete information interaction → Negative interpersonal relationship	$\beta_5 = 0.417$	6.009	0.000**	0.277	0.383	2.060
H6: Incomplete parasocial interaction → Negative interpersonal relationship	$\beta_6 = 1.681$	3.223	0.001**	0.473	0.898	2.060
H7: Negative intrapersonal relationship → Value destruction	$\beta_7 = 0.016$	0.286	0.775	0.493	0.972	1.634
H8: Negative interpersonal relationship → Value destruction	$\beta_8 = 0.136$	0.246	0.014*	0.263	0.357	1.634

Note: ** and * represent significance at $\alpha = 0.001$ and $\alpha = 0.01$, respectively. $f^2 = [(R^2 \text{ of structural path included}) - (R^2 \text{ of structural path excluded})] / [1/(R^2 \text{ of structural path included})]$.

5 | DISCUSSION AND CONCLUSIONS

5.1 | Discussion

Based on the empirical results, the three types of incomplete interactions have a positive impact on both negative intrapersonal and interpersonal relationships. However, negative intrapersonal relationships do not have a significant impact on value destruction, which diminishes the importance of the relationships formed based on customers' internal evaluation of these incomplete interactions. This finding is similar to Adam (2021), whose research results on the intrapersonal concept were all insignificant; therefore, more investigation on this would yield useful insights.

The results also highlight the importance of interpersonal relationships within the livestream shopping process. By examining the effects of pathways in the results, it was found that incomplete parasocial interactions had the highest impact on value destruction via negative interpersonal relationships. Research on parasocial interactions and interpersonal relationships often show that interpersonal relationships are one of the elements that form parasocial interactions (e.g., Kurtin, O'Brien, Roy, & Dam, 2018). This study shows that in the livestream shopping context, incomplete parasocial interactions contribute to negative interpersonal relationships. Conversely, it means that once customers perceive good parasocial interactions, their relationships with other customers improve.

5.2 | Conclusions

5.2.1 | Theoretical Contributions

This study is based on dialogue engagement (DE) theory, which aims to understand how individuals' inputs improve shared understanding during interactions between related parties (Kent & Taylor, 2018). Keeling et al. (2021) use DE as a theoretical foundation to study value co-creation and co-destruction based on a qualitative approach. This study complements that of Keeling et al. (2021) by using a quantitative approach. This research focuses only on the negative part of DE and suggests the antecedents of value destruction. This is considered an innovated application of DE theory.

Studies on various contexts of interactions focus more on the reasons or antecedents of such interactions (e.g., Liu et al., 2021; Nam et al., 2020). The research of Liu, Wang, Dong, and Zhao (2022) presents similar ideas to this study in terms of subdividing interactions into different types (product interaction, information interaction and monetary incentive interaction) and considers these interactions as stimuli for purchase intention in livestream shopping. This study considers parasocial interaction to be a more crucial variable to be considered and included in such a context.

5.2.2 | Management Implications

As it is confirmed that incomplete production interactions, incomplete information interactions and incomplete parasocial interactions all contribute to negative interpersonal relationships, and in turn, affect value destruction, livestream shopping operators and streamers, and even product providers, can benefit from the results. For operators, encouraging customers' honest reviews are crucial, as shoppers check not only the number of reviews, but also the credibility of the reviews. Operators should also monitor the authenticity of reviews. For the streamers, working on showcasing the products from different shoppers' perspectives is important, and they should work with product/service providers more closely before the livestreaming in order to have a thorough understanding of the products. As incomplete parasocial interactions play a more important role on value destruction in this study, streamers also need to know their customers better, know how much personal information should be disclosed and know how to build a rapport with different types of customers based on different products. Successful streamers should employ different strategies for different products, as their intended customers are also different. Managing customer emotions and customer-customer relationships is also something to focus on, as it affects interpersonal relationships between customers, and it will avoid value destruction of products and services.

5.3 | Study Limitations and Suggestions for Future Research

This study has three limitations that can serve as steppingstones for future research. The first limitation is the sample size. This study only collected data from 522 respondents. According to Tanaka (1987), it is more beneficial to use a large sample in psychological research. Studies have shown that large samples can improve the accuracy and reliability of the research results and reduce the impact of individual bias and random errors. One of the innovations of this study was dividing relationships into interpersonal and intrapersonal ones, which may affect value creation or destruction. However, the impact of intrapersonal relationships on value destruction is not significant. Future research could use this variable with a large sample size to verify its importance. The second limitation is the sample characteristics. The respondents in this study are all Taiwanese, which limits the application of the results. Data from different countries could be collected for cross-cultural research, as different countries have their own cultures and cognitive behaviors which may produce different results. The third limitation is the situational assumptions. The subjects of this study are all Taiwanese who had experienced livestream shopping and had negative experiences while using livestream services from Facebook, Instagram, LINE or Shopee. Other platforms may have different features that result in different customer experiences, thus producing different results. Future research could focus on platforms not used in this study to complement this research.

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The authors declare that they have no competing interests.

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All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

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