International Journal of Economy, Education, and Entrepreneurship
p-ISSN: 2798-0138 | e-ISSN: 2798-012X
Vol. 6, No. 2, August 2026
https://doi.org/10.53067/ije3.v6i2

DIMENSIONAL EFFECT SOCIAL PRESENCE ON CONSUMER EMOTIONS AND THEIR IMPLICATIONS ON BEHAVIOR IMPULSIVE BUYING INSIDE LIVE STREAMING E-COMMERCE

Kharisma Permata Aisha[1*], Asnawi Hidayat[2]
[1,2]Sekolah Tinggi Ilmu Ekonomi Studi Ekonomi Modern (STIE STEKOM) Kartasura, Indonesia
Email: *kharismapermataaisha@gmail.com[1], asnawi@stekom.ac.id[2]*

Asbtract

This study analyzes the influence of social presence dimensions, consisting of social presence of broadcasters, social presence of viewers, and social presence of platforms on consumer emotions (pleasure and arousal), and their implications for impulsive buying behavior in live streaming e-commerce. The study employed a quantitative approach and purposive sampling technique involving 213 active students of STIE STEKOM who met the inclusion criteria, namely having used popular live streaming e-commerce platforms such as Shopee Live and Tiktok Live. These two platforms only function as population boundaries/sample requirements and are not included as variables in the main structural model. Data analysis was carried out using the Partial Least Squares-Structural Equation Modeling (PLS-SEM) approach through SmartPLS 4. The results showed that all dimensions of social presence had a positive and significant effect on pleasure and arousal with the largest path coefficient value on the influence of social presence of platforms on pleasure of 0.416, p-value <0.001. In addition, pleasure ($\beta = 0.514$; $p < 0.001$) and arousal ($\beta = 0.439$; $p < 0.001$) had a positive and significant effect on impulsive buying. All indirect paths through pleasure and arousal also showed significant results, thus both were proven to mediate the influence of the social presence dimension on impulsive buying. The model was able to explain 87.3% of the variation in impulsive buying ($R^2 = 0.873$).) These findings indicate that social presence created during live streaming sessions can foster positive emotional responses (pleasure and arousal) in consumers, thereby increasing the likelihood of impulse purchases. This research has implications for businesses and e-commerce platform providers to optimize the quality of interactions during live streaming to enhance the consumer shopping experience.

Keywords: Presence, Pleasure, Arousal, Impulsive Buying, Live Streaming, E-commerce

INTRODUCTION

Digital transformation has significantly reshaped consumer interactions and transactions by enabling accessible content, rapid promotions, and instant cashless payments. These advancements have accelerated e-commerce growth, enhancing shopping convenience and driving the annual expansion of internet users. Consequently, this technology-driven lifestyle integration continuously boosts online shopping activities across various platforms.

According to CELIOS's Digital Economy Outlook report, Indonesia's e-commerce sector ranks as the second-largest contributor to digital economic transactions following digital payments. By 2025, its contribution is estimated to reach IDR 471.01 trillion, marking a 0.51% increase from the previous year. Furthermore, this transaction growth is intrinsically linked to user-base expansion. Supporting this trend, (Statista, 2025) predicts that Indonesian e-commerce users will reach 74.7 million in 2025 and continue growing to 99.1 million by 2029.

In response to these developments, e-commerce platforms continuously innovate by integrating live streaming features that combine mobile shopping with social interaction.

(Saputra, 2022) noted that live-stream shopping has emerged as a prominent trend among internet users, particularly in Indonesia. Beyond functioning as a promotional tool, live streaming facilitates direct, real-time engagement with sellers and peers within a shared forum, delivering a distinct social experience absent in conventional shopping.

Although live streaming shifts seller-buyer communication from one-way to interactive, consumers still face the inherent limitation of being unable to physically inspect products, unlike in brick-and-mortar stores. This constraint necessitates a shopping environment that fosters a sense of presence and social closeness during live interactions. Defined as an individual's perception of others within a technology-mediated environment, this concept is known as social presence (Short et al., 1976). Consequently, a higher perceived level of social presence enhances consumer comfort, emotional engagement, and purchase motivation.

In the context of live streaming e-commerce, social presence is no longer viewed as a single-dimensional construct. Referring to (Li et al., 2022), the one-dimensional approach is considered less optimal in depicting the consumer experience, as buyers do not only interact with the broadcaster but also with other viewers thru various interactive features during the live streaming session. Therefore, social presence in live streaming is much more accurately conceptualized as a multidimensional construct that can capture the diverse sources of social interaction experienced by consumers while shopping online (Li et al., 2022). Furthermore, the idea of multidimensional social presence was first proposed by Li et al. 2022.

The broadcaster's social presence represents the extent to which consumers feel direct interaction with the broadcaster during the broadcast. Meanwhile, the audience's social presence describes the level of consumer perception of the presence and interaction with other audience members. The social presence of live streaming itself refers to the social atmosphere that supports the creation of a more realistic and interactive online shopping experience.

In this study, the dimension of social presence in live streaming is operationalized as platform social presence to highlight the role of built-in features such as live chat, reactions, and viewer displays in building the perception of social presence during the interaction process. Such conditions have been proven to encourage consumers to make impulsive purchases. Various features on the e-commerce live streaming platform create enjoyable interactions while offering a shopping experience that is vastly different from conventional

shopping methods. These three aspects then trigger buyers to make spontaneous decisions, including making purchases without prior planning.

In the realm of live streaming e-commerce, purchasing decisions are not merely influenced by social presence, but are also driven by the emotional attachment that emerges throughout the shopping process. Thus, consumer emotions are viewed as a crucial factor bridging the relationship between social presence and impulsive buying behavior (Tedry & Tulipa, 2025).

Consumer emotions themselves are defined as psychological mechanisms that influence purchasing behavior due to environmental stimuli during interaction and shopping(Kotler & Keller, 2016). In this study, consumer emotions are conceptualized thru two dimensions namely pleasure and arousal derived from the Pleasure-Arousal-Dominance (PAD) theory by Mehrabian and Russell. These dimensions were chosen because they are considered most relevant in explaining the phenomenon of impulsive buying in the context of live streaming e-commerce (Mehrabian & Russell, 1974).

In the context of live streaming e-commerce, social presence is no longer viewed as a single, one-dimensional construct. According to Li et al. (2022), a one-dimensional approach is less capable of capturing the consumer experience because shoppers interact not only with the broadcaster but also with other viewers through various interactive features during live sessions. Therefore, social presence in live streaming is more appropriately conceptualized as a multidimensional construct that reflects the diverse sources of social interaction experienced during online shopping (Li et al., 2022). Furthermore, this multidimensional framework was initially introduced by (Li et al., 2022).

Specifically, broadcaster social presence describes the extent to which consumers perceive direct interaction with the host during the broadcast. Meanwhile, viewer social presence captures consumers' perception of the presence of and interaction with other audience members, and the social presence of live streaming refers to the social atmosphere that fosters a more realistic and interactive online shopping experience.

In this study, the social presence dimension of live streaming is operationalized as platform social presence to highlight the role of platform features such as live chat, reactions, and viewer displays in shaping the perception of social presence during interaction. This condition can encourage consumers to make impulsive purchases. Features embedded in live streaming e-commerce platforms create engaging interactions and offer a distinct shopping

experience compared to traditional retail. Together, these aspects can prompt consumers to make spontaneous decisions, including unplanned purchases.

Within live streaming e-commerce, purchasing decisions are driven not only by social presence, but also by emotional attachment developed throughout the shopping process. Thus, consumer emotions are regarded as a crucial bridging factor linking social presence to impulsive buying behavior (Tedry & Tulipa, 2025).

Consumer emotions are described as psychological mechanisms influencing purchasing behavior triggered by environmental stimuli during interaction and shopping (Kotler & Keller, 2016). In this study, consumer emotions are conceptualized through two dimensions pleasure and arousal derived from the Pleasure-Arousal-Dominance (PAD) theory formulated by Mehrabian and Russell. This dimension was selected because it is deemed the most relevant for explaining impulsive buying behavior within the live streaming e-commerce context (Mehrabian & Russell, 1974).

Although extensive research on social presence exists, several studies indicate that social presence significantly influences consumer emotions and impulsive buying in live streaming e-commerce. Notable works include (Li et al., 2022), who found that social presence drives impulsive buying through consumer emotions in China, alongside similar findings by (Yanti Oktavia, 2023) focusing on TikTok Live, and (Tedry & Tulipa, 2025) examining Shopee Live users. However, most prior research still treats social presence as a single construct or fails to clarify whether its individual dimensions broadcaster, viewers, and platform influence impulsive buying through distinct mechanisms, leaving our understanding of the most dominant mediators largely limited.

Consequently, this study simultaneously examines the roles of pleasure and arousal as mediators between broadcaster, viewer, and platform social presence and impulsive buying among Indonesian users of TikTok Live and Shopee Live. Both platforms serve solely to define the scope and sample-screening criteria and are not treated as multi-group comparison variables or moderators, which is instead proposed for future research.

Accordingly, this study aims to analyze how these three elements of social presence shape consumer emotions (*pleasure* and *arousal*) and evaluate their mediating roles in linking social presence to impulsive buying behavior in live streaming e-commerce, thereby contributing deeper insights into the psychological mechanisms underlying such consumer actions.

LITERATURE REVIEW

SOR Theory

The SOR theory was first developed by Mehrabian and Russell in 1974, explaining that individual behavior begins with an environmental stimulus, which is processed through an internal state before producing a behavioral response (Mehrabian & Russell, 1974). As a classical framework widely applied to consumer behavior across marketing contexts, the SOR model categorizes stimuli as external factors, organisms as internal psychological processes, and responses as resulting behaviors. Although long-standing, SOR remains highly relevant to digital environments like live streaming e-commerce, where real-time interactions with sellers create various stimuli influencing consumer perceptions, emotions, and decision-making processes.

In live streaming e-commerce, platform characteristics such as social presence, interactivity, information quality, streamer traits, media design, and real-time communication act as stimuli. These influence internal organism states like trust, flow experience, pleasure, arousal, perceived value, and social interaction (Hameed et al., 2025; Khoi et al., 2023; Ming et al., 2021; Xia et al., 2024) subsequently encouraging responses like purchase intention, customer engagement, and impulse buying (Mehrabian & Russell, 1974).

Numerous studies support this application: (Ming et al., 2021) show that social presence increases impulsive buying through emotional closeness; (Khoi et al., 2023) indicate that platform characteristics and social interactions drive impulsive buying urges via psychological shifts; (Xia et al., 2024) explain that social cues boost pleasure and arousal to prompt impulsive purchases; and (Hameed et al., 2025) demonstrate how digital environment stimuli affect psychological states.

Based on these research findings, this study adopts the SOR theoretical framework as an appropriate research foundation for analyzing the phenomenon of impulsive buying in the context of live streaming e-commerce. Live streaming e-commerce creates a stimulating environment through real-time interactions, social commentary, and interactive features that act as stimuli. Furthermore, the social presence dimension in live streaming e-commerce functions as a stimulus that influences consumer emotions (pleasure and arousal) as an organism, which ultimately leads to impulsive buying behavior as a response.

Social Presence

Social presence or social presence is the level of individual awareness of the presence of other people in interactions mediated by technology (Short et al., 1976). Social presence allows individuals to perceive that communication is not just about exchanging information, but also involves social, emotional, and personal aspects. Therefore, the higher the perceived level of social presence, the greater the sense of closeness, comfort, and mutual trust formed in online interactions. These condition encourages deeper and more meaningful communication, thereby strengthening relationships between individuals.

In the world of online marketing, signs of social presence such as feedback from real customers, the use of informal language, and the ability to interact directly as humans communicate, so that people feel psychologically closer to the online seller (broadcaster) (Oktadinna et al., 2024). Thus, in the context of online marketing, social presence can be strengthened through various components such as the implementation of profile displays, providing comments, live chat, and participation in content (Smith, 2023) which is influenced by elements including the originality of the substance, user participation, and the quality of interaction between individuals.

There are three dimensions of social presence: broadcaster social presence refers to consumers' perspectives on social interaction, closeness, and emotional connection with the broadcaster during a live streaming session. This concept stems from the theory of social presence introduced by (Short et al., 1976) which highlighted the importance of recognizing the presence of others in communication through media. Viewer Social, refers to the perceived social presence of other viewers. Broadcasters who can build good interactions with their audiences can increase participation and positive feelings (Huang et al., 2023). Social presence of viewers can strengthen the collective shopping experience and create social dynamics that encourage unplanned purchases (He et al., 2023).

Platform social presence describes how social media or streaming platforms create an atmosphere that encourages social interaction. Platforms that allow interaction between users can increase overall social presence (Bai et al., 2015). Thus, it refers to the ability of design and technical features in live streaming to facilitate and enhance the social presence experience.

Consumer Emotions

Emotions are motivational reaction as a reflection of the impact of mood (Robbins & Judge, 2019). Other research explains that emotions can be a response to stimuli or stimuli

resulting from perceptions from within oneself or from the environment around the individual (Cherniss et al., 2006). According to Stephen P. Robbins in (Masahere & Ilyas, 2023), emotions are strong, deep, and stimulating feelings that are directed toward or directed toward someone or something. Consumer emotions are an affective component that significantly influences the purchasing decision process. Emotions are defined as feelings or psychological reactions that arise in response to environmental stimuli (Mehrabian & Russell, 1974). Positive emotions are described as feelings of joy, enthusiasm, impression, interest, and happiness (Scherer, 2005). In consumer behavior, emotions are triggered by shopping experiences, both in conventional retail environments and through digital platforms.

(Mehrabian & Russell, 1974) represents the perspective aspects of environmental responses to purchases, namely pleasure; arousal; and dominance, which intersect with consumers' spontaneous and limited problem-solving decisions. Impulsive buying may occur when consumers are in a positive emotional state that can encourage unplanned purchasing actions, as quoted from (Baskara & Nurhayati, 2023).

In this study, consumer emotions are conceptualized through two main dimensions based on the Pleasure-Arousal-Dominance (PAD) model; pleasure and arousal. Although the PAD theory proposed by (Mehrabian & Russell, 1974) consisting of three dimensions, this study exclude dominance dimension because it is less relevant in representing psychological responses to spontaneous impulsive buying behavior. Considering that pleasure represents positive emotional valence, such as feelings of pleasure, while arousal represents the level of energy activation, where these two affective dimensions are most essential in mediating stimuli from the online environment towards spontaneous purchasing decisions (Mehrabian & Russell, 1974).

Pleasure

Pleasure is a positive feeling experienced directly by consumers so that it can increase interest in shopping. High levels of enjoyment can encourage consumers to make spontaneous purchases (Babin et al., 1994). In the context of e-commerce, the sensation of enjoyment can arise from factors such as the friendliness of the broadcaster, the interactive atmosphere during the live broadcast, and the presence of attractive live promotions.

Arousal

Arousal indicates the degree of emotional activation or physiological excitation experienced by consumers, ranging from a calm state to highly stimulated Russell, 1980 in (Tedry & Tulipa, 2025). This dimension represents the psychological energy that motivates consumers to act. In the context of live streaming e-commerce, excitement can be triggered by stimuli such as limited-time promotions (flash sales), competition among consumers for scarce products, and dynamic social interactions with the broadcaster and other viewers.

Impulsive Buying

Impulsive buying is purchasing behavior carried out suddenly without prior planning as a response to stimuli such as broadcaster's skills in communication, time-limited promotions, interaction between viewers which can trigger consumers to make spontaneous purchasing decisions (Rook & Gardner, 1993). The high level of stimulus in the form of emotional stimulation increases the likelihood of impulsive purchases in the online shopping environment (Verhagen & Van Dolen, 2011). Referring to this research, the findings are a sign that the emotions of pleasure and arousal bridge the stimulus with impulsive buying behavior.

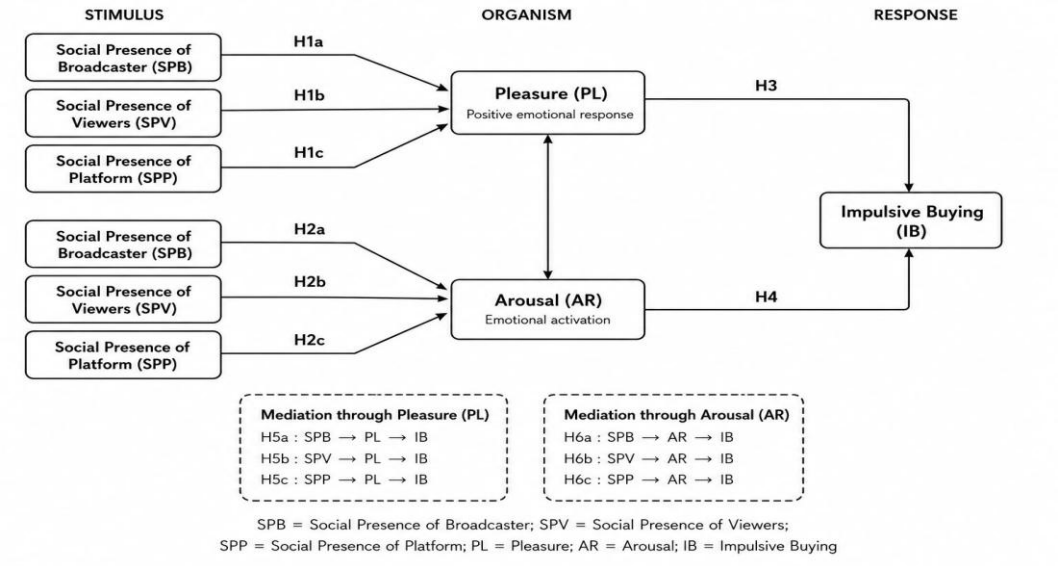

Figure 1. Conceptual Model

Hypothesis

H1a: The Social Presence of Broadcaster has a positive effect on Pleasure in live streaming e-commerce.

H1b: The Social Presence of Viewers has a positive effect on Pleasure in live streaming e-commerce.

H1c: The Social Presence of Platform has a positive effect on Pleasure in live streaming e-commerce.

H2a: The Social Presence of Broadcaster has a positive effect on Arousal in live streaming e-commerce.

H2b: The Social Presence of Viewers has a positive effect on Arousal in live streaming e-commerce.

H2c: The Social Presence of Platform has a positive effect on Arousal in live streaming e-commerce.

H3: Pleasure has a positive effect on Impulsive Buying in live streaming e-commerce.

H4: Arousal has a positive effect on Impulsive Buying in live streaming e-commerce.

H5a: Pleasure mediates the effect of the Social Presence of Broadcaster on impulsive buying in live streaming e-commerce.

H5b: Pleasure mediates the effect of the Social Presence of Viewers on impulsive buying in live streaming e-commerce.

H5c: Pleasure mediates the effect of the Social Presence of Platform on impulsive buying in live streaming e-commerce.

H6a: Arousal mediates the effect of the Social Presence of Broadcaster on impulsive buying in live streaming e-commerce.

H6b: Arousal mediates the effect of the Social Presence of Viewers on impulsive buying in live streaming e-commerce.

H6c: Arousal mediates the effect of the Social Presence of Platform on impulsive buying in live streaming e-commerce.

METHOD

This study employed a quantitative research method, defined as a concept utilizing numerical data processing to produce structured information (Sinambela, 2020). This approach was selected to measure and analyze variable relationships through statistically processable numerical data. The target population comprised active undergraduate

management students at STIE STEKOM, class of 2025 (Sugiyono, 2019). Using a non-probability purposive sampling technique (Creswell, 2014), respondents were selected based on specific criteria: students with experience using Shopee Live or TikTok Live at least once in the past six months, aged 17 or older, and having made at least one purchase through these platforms between February and April 2026.

Following PLS-SEM guidelines by Hair et al. 2019, where the minimum sample size should be five to ten times the number of research indicators (Hair et al., 2019), the 24 indicators required between 120 and 240 respondents. A total of 213 valid responses were collected, successfully meeting the adequacy requirements for PLS-SEM analysis. Data was collected directly from the sample through a questionnaire distributed using Google Forms to eligible respondents. The questionnaire was designed to measure respondents' experiences with social presence, consumer emotions, and impulsive buying behavior.

All variables in this study were measured using instruments adapted from previous research. The variables social presence of broadcasters, social presence of viewers, and social presence of platforms were adapted from previous research. (Li et al., 2022) with four indicators each. Consumer emotion variables are conceptualized through the dimensions of pleasure and arousal based on the Pleasure-Arousal-Dominance (PAD) model, which excludes dominance because it is less relevant in explaining consumer behavioral responses in the context of spontaneous purchasing decision-making. The pleasure variable is adapted from research (Mehrabian & Russell, 1974) with 4 indicators: (1) feelings of happiness/joy, (2) feelings of entertainment, (3) feelings of comfort (4) feelings of satisfaction. The arousal variable is measured with 4 indicators and adapted from research (Li et al., 2022); (1) feelings of excitement, (2) feelings of stimulation, (3) feelings of rush (4) enthusiasm. the impulsive buying variable is measured with 4 indicators adapted from research (Li et al., 2022; Rook, 1987), consisting of: (1) unplanned purchases, (2) quick decisions, (3) emotional urges to buy, (4) spontaneous purchases.

Data were analyzed using SmartPLS 4.0 with the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The PLS-SEM method was chosen based on the characteristics of the model which is exploratory predictive, a complex model involving multiple mediating variables, and the PLS-SEM method is very suitable for use when the questionnaire data does not have to be strictly normally distributed.

The analysis was conducted in two stages: evaluation of the measurement model (outer model) and evaluation of the structural model (inner model). Measurement-model evaluation

assessed instrument quality using convergent validity, measured by outer loadings (> 0.70) and Average Variance Extracted (AVE) > 0.50), discriminant validity using the Heterotrait-Monotrait Ratio (HTMT) (< 0.90), and the Fornell-Larcker criteria, as well as construct reliability tests using Composite Reliability (> 0.70) and Cronbach's Alpha (> 0.70).

Furthermore, an inner model evaluation was conducted to test the relationship between constructs through the coefficient of determination (R2) value, as well as hypothesis testing using a bootstrapping procedure with 5000 subsamples, using bias-corrected and accelerated (BCa) confidence intervals, and using two-tailed methods. Hypothesis testing was based on the path coefficient value, t-statistic (>1.96), and p-values (<0.05) at a 5% significance level.

RESULTS AND DISCUSSION

Based on the analysis of data collected from the questionnaire distribution, this study obtained 213 valid response respondents who met the research criteria. All of this data were analyzed using the Partial Least Squares (PLS) in SmartPLS software.

Table 1. Respondent Characteristics

Characteristics	Category	Frequency	Percentage
Gender	Male	108	50,7%
	Female	105	49,3%
Age	>23	35	16,4%
	18-21	73	34,3%
	22-23	105	49,3%
Live Streaming Platform	Shopee Live	69	32,4%
	TikTok Live	71	33,3%
	Both of them	73	34,3%

Based on the respondent characteristics in Table 1, the majority of respondents were 22-23 years old, with a total of 105 respondents, or 49.3%. Furthermore, respondents aged 18-21 years old were 73 respondents, or 34.3%, while respondents aged 23 and above were 35 respondents, or 16.4%.

The distribution of platform usage is relatively balanced between Shopee Live, TikTok Live, and the use of both platforms.

Based on the live streaming platform used, 73 respondents (34.3%) used both platforms (Shopee Live and TikTok Live). 71 respondents (33.3%) used TikTok Live. Meanwhile, 69 respondents (32.4%) used Shopee Live. The explanation above illustrates that the native generation is highly dependent on digitalization, including online shopping.

Table 2. Descriptive Indicators

Indicator	Mean	Median
Social Presence of Broadcaster (SPB)		
SPB1. I feel like I'm interacting with someone familiar when watching a live stream.	4,019	4
SPB2. Broadcasters respond to comments or questions from viewers quickly and personally.	4,099	4
SPB3. I feel the broadcaster shows a genuine and honest personality during the broadcast.	4,117	4
SPB4. The way the broadcaster conveys the product feels warm and engaging.	4,141	4
Social Presence of Viewers (SPV)		
SPV1. I realized that many other people were watching the same live broadcast as me.	4,089	4
SPV2. I read and paid attention to the enthusiastic comments from other viewers in the chat column.	4,113	4
SPV3. Seeing lots of comments like “already bought” or “sold a lot” from other viewers increases my interest in the product.	4,038	4
SPV4. Live streaming sessions create a sense of community.	4,099	4
Social Presence of Platform (SPP)		
SPP1. The live chat and reactions features make it easier for me to participate in live broadcasts.	4,089	4
SPP2. The sound and picture quality in the live broadcast allowed me to focus on the content being displayed.	4,15	4
SPP3. I can easily share live broadcasts to other social media.	4,15	4
SPP4. Displaying the number of viewers and notifications of users joining makes the broadcast feel livelier.	4,089	4
Pleasure (PL)		
PL1. Watching live streaming is a pleasant experience for me.	4,07	4
PL2. I felt entertained during the live streaming session.	4,07	4
PL3. I feel comfortable interacting or shopping via live streaming.	4,047	4
PL4. I feel excited when I watch live streaming broadcasts.	4,117	4
Arousal (AR)		
AR1. I feel excited when I see products being promoted dynamically in live streaming.	4,094	4
AR2. The live streaming session left me feeling enthusiastic and full of energy.	3,986	4
AR3. Flash sales or countdowns in broadcasts make me feel like I need to make a decision immediately.	4,117	4
AR4. I feel interested and excited when watching live streaming.	4,023	4
Impulsive Buying (IB)		

IB1. I have purchased a product while watching a live stream even though I hadn't planned to.	4,056	4
IB2. My purchasing decisions during live streaming sessions are often made quickly without comparing with other stores.	4,127	4
IB3. The feeling of excitement when watching a live stream often prompts me to immediately click the “buy” button.	4,108	4
IB4. I often suddenly decide to buy a product while watching a live stream.	4,136	4

Note: Items SPP2, SPP3, AR3, and IB3 were retained because they are factually and theoretically essential elements in the context of e-commerce live streaming to represent social presence, emotional stimulation, and impulse buying behavior in its entirety. The restoration of indicators for items SPP2, SPP3, and AR3 is adjusted to the specific characteristics of e-commerce live streaming platforms, where elements of audiovisual quality, real-time sharing features, and limited-time promotions (flash sales) have been empirically proven to play an important role in triggering social presence and arousal levels (Tedry & Tulipa, 2025). The feeling of pleasure in item IB3 was intended to capture the hedonic aspect of emotionally driven impulsive buying behavior during live streaming. Furthermore, these four items were retained because their convergent validity values in SmartPLS met the requirements.

Table 2 shows the results of the descriptive statistical analysis. All research variables have a mean value above 4,000, indicating that respondents tend to give a positive assessment of each construct studied. The Social Presence of Platform variable has the highest mean value of 4.12, followed by Impulsive Buying at 4.11, Social Presence of Broadcaster at 4.09, Pleasure and Social Presence of Viewers within the average range of 4.08, and Arousal at 4.06. These findings may indicate that respondents felt a high social presence during e-commerce live streaming sessions, accompanied by the emergence of positive emotions and a tendency to make impulsive purchases.

Furthermore, the high average score for the social presence dimension indicates that respondents experienced positive interactions with broadcasters, other viewers, and the features of the e-commerce live streaming platform. This positive perception was accompanied by high average scores for the pleasure, arousal, and impulsive buying variables, indicating that the social experience during live streaming sessions has the potential to shape emotional responses and encourage spontaneous purchasing behavior.

Table 2 shows that all indicators had a median value of 4, meaning that most respondents selected “agree” on the Likert scale. To minimize potential common method bias, this study implemented several procedural measures: ensuring respondent anonymity and confidentiality, using instruments validated in previous research, emphasizing that there were no right or wrong answers, and encouraging honest responses. In addition, full-collinearity VIF testing was conducted using the inner VIF values for all research constructs to assess potential common method bias.

Table 3. Inner VIF Results

	AR	**IB**	**PL**	**SPB**	**SPP**	**SPV**
AR		6,822				
IB						
PL		6,822				
SPB	7,497		7.97			
SPP	7.06		7,706			
SPV	7.98		7,498			

Based on Table 3, all inner VIF values show numbers above the threshold of 3.3 (ranging from 6.822 to 7.980).A relatively high inner VIF value indicates a strong correlation between constructs, so the structural results should be interpreted with caution. This condition indicates potential collinearity, which should be considered as a limitation of the model.

Table 4. Validity and Reliability Test Results

Variables	**Loadings**	**Cronbach's Alpha**	**Composite Reliability**	**AVE**
Social Presence of Broadcasters(SPB)		0.916	0.941	0.799
SPB1	0.888			
SPB2	0.902			
SPB3	0.891			
SPB4	0.893			
Social Presence of Viewers(SPV)		0.908	0.936	0.784
SPV1	0.886			
SPV2	0.888			
SPV3	0.872			
SPV4	0.895			
Social Presence of Platform(SPP)		0.917	0.942	0.801
SPP1	0.91			
SPP2	0.87			
SPP3	0.888			
SPP4	0.912			
Pleasure(PL)		0.919	0.943	0.805
PL1	0.888			
PL2	0.896			
PL3	0.904			
PL4	0.9			

Arousal(AR)		0.92	0.943	0.806
AR1	0.896			
AR2	0.899			
AR3	0.895			
AR4	0.9			
Impulsive Buying(IB)		0.919	0.942	0.804
IB1	0.9			
IB2	0.886			
IB3	0.911			
IB4	0.89			

Based on the outer loading test results in Table 4, all indicators had loading factor values ranging from 0.870 to 0.912. Therefore, all indicators were declared valid and met the convergent validity criteria. This indicates that each indicator adequately reflects the construct being measured.

Furthermore, the Average Variance Extracted (AVE) values for all constructs ranged from 0.784 to 0.806, or greater than 0.50. Therefore, these results indicate that each construct is able to explain more than 50% of the variance in its indicators, thus meeting the convergent validity criteria.

Reliability testing also yielded positive results. The Cronbach's Alpha values for all variables ranged from 0.908 to 0.920, while the Composite Reliability values ranged from 0.936 to 0.943. All values exceeded the minimum threshold of 0.70, indicating that each construct had a high level of internal consistency, and the research instrument was deemed reliable. Therefore, the measurement model met the validity and reliability requirements, making it suitable for use in structural model analysis (inner model).

Table 5. Fornell Larcker Results

	AR	**IB**	**PL**	**SPB**	**SPP**	**SPV**
AR	0.898					
IB	0.914	0.897				
PL	0.924	0.919	0.897			
SPB	0.917	0.9	0.908	0.894		
SPP	0.892	0.892	0.925	0.906	0.895	
SPV	0.903	0.897	0.92	0.912	0.906	0.885

As shown in Table 5, several correlations among constructs, including that between pleasure and arousal, exceeded the square roots of the respective AVE values under the Fornell-Larcker criterion. This condition may be theoretically understandable because these constructs belong to the same psychological framework of emotions. In live-streaming e-commerce, emotional stimuli occur rapidly, resulting in close relationships between

emotional dimensions. Although all indicators showed strong outer loadings (> 0.70) and met convergent-validity requirements, discriminant validity was not fully established; therefore, subsequent structural results should be interpreted cautiously.

Table 6. Heterotrait-Monotrait Ratio Results

	AR	**IB**	**PL**	**SPB**	**SPP**	**SPV**
AR						
IB	0.994					
PL	1,005	1,000				
SPB	0.998	0.981	0.988			
SPP	0.971	0.972	1,007	0.988		
SPV	0.988	0.981	1,006	0.999	0.993	

A high HTMT value indicates that some constructs have very strong conceptual closeness, so discriminant validity has not been fully achieved. Therefore, the research results need to be interpreted with these limitations in mind.

Table 7. R-square results

	R-square	**R-square adjusted**
Arousal	0.873	0.872
Impulsive Buying	0.873	0.872
Pleasure	0.899	0.897

Structural Model Evaluation (Inner Model)

The evaluation of the structural model displays Table 7 which is carried out by testing using the R-square (R2) value to determine the ability of the independent variable to explain the dependent variable. The test results on the Pleasure variable are 0.899, these results explain that the social presence dimension consisting of Social Presence of Broadcaster, Social Presence of Viewers, and Social Presence of Platform is able to explain the variation of the Pleasure variable by 89.9%, while the remaining 10.1% is influenced by other factors outside the research model.

The R-Square value for the Arousal variable is 0.873, which proves that the three dimensions of social presence are able to explain 87.3% of the variation in arousal, while the remaining 12.7% is explained by other variables outside the study.

Furthermore, the Impulsive Buying variable obtained an R-square value of 0.873, indicating that the Pleasure and Arousal variables were able to explain 87.3% of the variation in impulsive buying behavior. Thus, the research model has very strong explanatory power.

To complete the model evaluation, the analysis continued with the PLSpredict procedure to test the model's predictive ability.

Table 8. Table PLSpredict

	Q^2predict	RMSE	MAE
AR	0,869	0,371	0,248
PL	0,896	0,330	0,254
IB	0,855	0,390	0,279

In Table 8, the Q value$^2_{predict}$: All indicators in the variables Arousal (AR), Pleasure (PL), Impulsive Buying (IB) show a Q value$^2_{predict}$ > 0. Likewise at the construct level, the Q value$^2_{predict}$ for the constructs AR (0.869), PL (0.896), and IB (0.855) the values are well above 0. This confirms that the model has very good predictive power.

Hypothesis Testing

Hypothesis testing was conducted using the bootstrapping procedure in SmartPLS. A relationship is considered significant if the t-statistic is >1.96 and the p-value is 0.05.

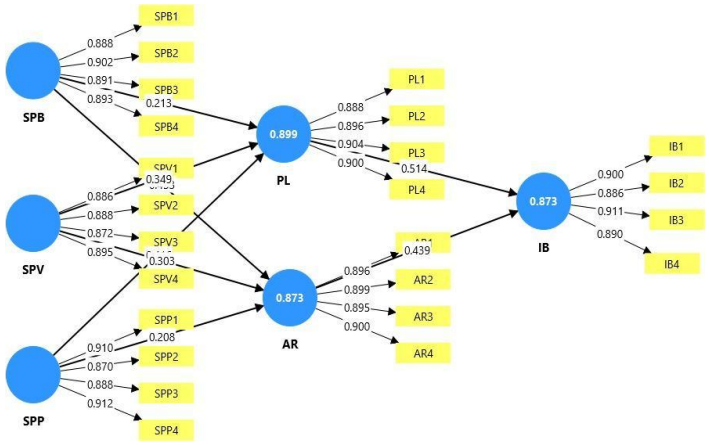

Figure 2. Outer model results

Table 9. Results of Direct Effect Testing

Hypothesis	Variable Relationship	b	Std. Error	t-value	p-value	95% CI	f^2	Results
H1	SPB → PL	0,213	0,080	2,677	0,007	[0,061; 0,373]	0,060	Supported
H1	SPV → PL	0,349	0,070	4,953	<0,001	[0,212; 0,490]	0,160	Supported
H1	SPP → PL	0,416	0,076	5,455	<0,001	[0,260; 0,561]	0,242	Supported
H2	SPB → AR	0,453	0,116	3,908	<0,001	[0,247; 0,696]	0,216	Supported
H2	SPV → AR	0,303	0,085	3,567	<0,001	[0,135; 0,467]	0,096	Supported
H2	SPP → AR	0,208	0,084	2,479	0,013	[0,036;	0,048	Supported

						0,362]		
H3	PL → IB	0,514	0,082	6,252	<0,001	[0,353; 0,668]	0,306	Supported
H4	AR → IB	0,439	0,086	5,108	<0,001	[0,275; 0,606]	0,223	Supported

Information:

SPB = Social Presence of Broadcaster; SPV = Social Presence of Viewers; SPP = Social Presence of Platform; PL = Pleasure; AR = Arousal; IB = Impulsive Buying

Based on Table 9, all direct influence paths show positive coefficients and p-values below 0.05. Thus, H1, H2, H3, and H4 are supported. Furthermore, Table 10 shows that all indirect influence paths through pleasure and arousal have p-values below 0.05. Therefore, H5 and H6 are also supported.

Table 10. Results of the Mediation Effect Test

Hypothesis	Mediation Path	b	t-value	p-value	Path Decision	Hypothesis Decision
H5	SPB → PL → IB	0,109	2,230	0,026	Significant	Supported
H5	SPV → PL → IB	0,179	4,222	<0,001	Significant	Supported
H5	SPP → PL → IB	0,214	4,375	<0,001	Significant	Supported
H6	SPB → AR → IB	0,199	4,138	<0,001	Significant	Supported
H6	SPV → AR → IB	0,133	2,492	0,013	Significant	Supported
H6	SPP → AR → IB	0,091	1,995	0,046	Significant	Supported

Mediation Testing

The results of the specific indirect effect test show that all mediation paths through pleasure have a positive and significant influence. The SPB → PL → IB path obtained a value of $\beta = 0.109$; $t = 2.230$; and $p = 0.026$. The SPV → PL → IB path obtained a value of $\beta = 0.179$; $t = 4.222$; and $p < 0.001$, while the SPP → PL → IB path obtained a value of $\beta = 0.214$; $t = 4.375$; and $p < 0.001$. Thus, pleasure is proven to mediate the influence of the three dimensions of social presence on impulsive buying, so H5 is supported.

Furthermore, all mediation paths through arousal also showed a positive and significant influence. The SPB → AR → IB path obtained a value of $\beta = 0.199$; $t = 4.138$; and $p < 0.001$. The SPV → AR → IB path obtained a value of $\beta = 0.133$; $t = 2.492$; and $p = 0.013$, while the SPP → AR → IB path obtained a value of $\beta = 0.091$; $t = 1.995$; and $p = 0.046$. These results indicate that arousal mediates the influence of the three dimensions of social presence on impulsive buying, thus supporting H6.

Based on the magnitude of the indirect effect coefficient, the social presence of broadcasters has a stronger influence on impulsive buying through arousal (β = 0.199) than through pleasure (β = 0.109). Conversely, the social presence of viewers works more strongly through pleasure (β = 0.179) than through arousal (β = 0.133). Similarly, the social presence of platforms shows a stronger indirect influence through pleasure (β = 0.214) than through arousal (β = 0.091).

Discussion

The Influence of Social Presence Dimension on Pleasure

The test results show that the social presence of broadcasters (SPB), viewers (SPV), and platforms (SPP) has a positive and significant effect on pleasure: SPB → PL ($t=2.677;p=0.007$), SPV → PL ($t=4.953;p<0.001$), and SPP → PL ($t=5.455;p<0.001$). Thus, the hypothesis is supported.

These findings indicate that stronger consumer perceptions of social presence during live streaming enhance feelings of happiness, comfort, and satisfaction. A communicative broadcaster, active viewer interactions, and platform features collectively foster a shopping experience that evokes positive emotions. This aligns with Stimulus-Organism-Response (SOR) theory, where social presence acts as the external stimulus, while pleasure and arousal serve as organismic psychological responses.

Furthermore, this reinforces (Short et al., 1976) Social Presence Theory, which posits that higher perceived presence via communication media increases social engagement and emotional attachment. Two-way communication and interactive features foster psychological closeness and a pleasurable shopping experience. These results are consistent with Gao et al. (2021), Tedry & Tulipa (2025) and Zhang & Hu (2024) confirming that enhanced social presence drives positive emotional responses and enjoyable shopping sessions.

The Influence of Social Presence Dimensions to Arousal

All three dimensions of social presence exert a positive and significant effect on arousal: SPB → AR ($t=3.908;p<0.001$), SPV → AR ($t=3.567;p<0.001$), and SPP → AR ($t=2.479;p=0.013$). Thus, the second hypothesis is supported. Responsive broadcasters, peer interactions, and platform features heighten consumer enthusiasm, passion, and emotional activation during live streaming.

In accordance with SOR theory and Mehrabian & Russell (1974) Pleasure-Arousal-Dominance (PAD) framework, arousal represents an emotional state characterized by elevated enthusiasm, passion, and psychological energy driven by environmental stimuli such as real-time interactions, rapid promotions, and competitive peer atmospheres. These findings align with Tedry & Tulipa (2025) and Verhagen & Van Dolen (2011) indicating that higher perceived social presence increases emotional arousal during online shopping.

The Effect of Pleasure on Impulsive Buying

Pleasure exerts a positive and significant effect on impulsive buying (β=0.514, t=6.252, p<0.001), supporting H3. Higher levels of pleasure, comfort, and satisfaction during live streaming increase the tendency for spontaneous, unplanned purchases due to positive emotional attachments that enrich the shopping experience.

Grounded in SOR theory, pleasure functions as an emotional response triggered by the live streaming experience that subsequently drives impulsive behavior. This matches the PAD model, where environmental stimuli like interactive promotions and real-time communication enhance consumer satisfaction and influence purchasing decisions (Mehrabian & Russell, 1974). These results support Verhagen & Van Dolen (2011) and Rook (1987), confirming that pleasurable emotional states, rather than rational considerations, frequently trigger impulsive buying decisions.

The Influence of Arousal on Impulsive Buying

Arousal has a positive and significant effect on impulsive buying (t=5.108, p<0.000), confirming that the fourth hypothesis is accepted. Heightened enthusiasm, passion, and excitement during live streaming elevate the urge for impulsive purchases by temporarily weakening self-control and rational thinking (Rook, 1987).

Under SOR theory, arousal acts as an organism bridging the live-streaming stimulus to spontaneous behavioral responses. Within PAD theory, arousal reflects emotional activation that motivates action (Mehrabian & Russell, 1974). In live streaming, this is spurred by limited-time promotions, peer competition, and direct interactions. These findings corroborate Tedry & Tulipa (2025) and Rook (1987), demonstrating that high arousal undermines self-control to encourage unplanned purchases.

The Mediation Role of Pleasure and Arousal

Mediation tests show significant results across all paths ($p<0.05$): SPB → PL → IB ($p=0.026$), SPB → AR → IB ($p<0.001$), SPV → PL → IB ($p<0.001$), SPV → AR → IB ($p=0.013$), SPP → PL → IB ($p<0.001$), and SPP → AR → IB ($p=0.046$). Thus, H5 and H6 are supported.

The influence of social presence on impulsive buying is channeled through pleasure and arousal. Communicative broadcasters, peer interactions, and platform features stimulate emotional states prior to driving impulsive behavior, strengthening the foundational SOR framework where social presence acts as a stimulus and emotions act as mediating organisms. These findings align with the PAD model and are consistent with Tedry & Tulipa (2025) and Gao et al (2021), proving that pleasure and arousal are vital psychological mechanisms linking social experiences to impulsive purchasing tendencies.

CONCLUSION

The conclusion of this study confirms that the dimensions of social presence broadcaster, viewer, and platform play a vital role in shaping consumer emotions of pleasure and arousal. These emotions act as psychological mechanisms bridging social presence to impulsive buying behavior in live streaming e-commerce. Hypothesis testing indicates that all research hypotheses are fully supported, successfully achieving the study's objectives. These findings demonstrate that heightened social interaction in live streaming is closely tied to positive emotional experiences, which subsequently foster impulsive purchasing tendencies.

Specifically, the results show that the three dimensions of social presence influence impulsive buying through distinct emotional pathways: broadcaster social presence predominantly drives impulsive purchases through arousal, whereas viewer and platform social presences operate primarily through pleasure. This contributes to the existing literature by proving that individual dimensions of social presence do not rely on identical psychological mechanisms to stimulate impulsive buying.

Furthermore, these findings reinforce the application of Stimulus-Organism-Response (SOR) theory in explaining how social presence stimuli shape consumer emotional states to produce impulsive buying responses. From a practical standpoint, since social presence dimensions enhance both pleasure and arousal to encourage impulse buying, platform organizers and businesses utilizing live streaming should foster active interactions, build

responsive communication, and optimize interactive features to create more engaging shopping experiences and drive purchasing decisions.

Nevertheless, this study acknowledges several methodological limitations. First, regarding generalizability, the use of purposive sampling with homogeneous student respondents from a single institution across two platforms limits broader population representation and risks selection bias. Future research should involve diverse respondents from various backgrounds and incorporate additional variables such as trust, perceived value, fear of missing out (FoMO), or hedonic shopping motivation. Second, the cross-sectional design and self-report data collection at a single point in time leave the study vulnerable to common method bias and limitations in capturing absolute causal relationships. Third, while the structural model yields a high R-squared value, it presents limitations in discriminant validity, as evidenced by a high Heterotrait-Monotrait (HTMT) ratio and unmet Fornell-Larcker criteria for certain construct pairs reflecting the inherent overlap of psychological constructs and consumer behaviors in online shopping. Fourth, although samples from Shopee Live and TikTok Live were utilized, the study did not conduct an in-depth comparison of platform-specific mechanisms. Consequently, future studies should employ instruments with clearer theoretical boundaries to ensure construct uniqueness and explicitly examine cross-platform differences using multi-group analysis from the outset.

REFERENCES

Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or Fun: Measuring Hedonic and Utilitarian Shopping Value. *Journal of Consumer Research*, *20*(4), 644. https://doi.org/10.1086/209376

Bai, Y., Yao, Z., & Dou, Y.-F. (2015). Effect of social commerce factors on user purchase behavior: An empirical investigation from renren.com. *International Journal of Information Management*, *35*(5), 538-550. https://doi.org/10.1016/j.ijinfomgt.2015.04.011

Baskara, A., & Nurhayati. (2023). Consumer Behavior in Marketing 4.0: Social Media Marketing and Website Marketing on Purchasing Decisions through TAM As a Mediating Variable. *International Journal of Social Science and Business*, *7*(3), 550-559. https://doi.org/10.23887/ijssb.v7i3.52056

Cherniss, C., Extein, M., Goleman, D., & Weissberg, R. P. (2006). Emotional Intelligence: What Does the Research Really Indicate? *Educational Psychologist*, *41*(4), 239-245. https://doi.org/10.1207/s15326985ep4104_4

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (4th ed.)*. SAGE Publications Ltd. https://doi.org/10.4135/9781849208956

Gao, X., Xu, X.-Y., Tayyab, S. M. U., & Li, Q. (2021). How the live streaming commerce viewers process the persuasive message: An ELM perspective and the moderating

effect of mindfulness. *Electronic Commerce Research and Applications*, *49*, 101087. https://doi.org/10.1016/j.elerap.2021.101087

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2-24. https://doi.org/10.1108/EBR-11-2018-0203

Hameed, I., Zainab, B., Akram, U., Ying, W. J., Chan Xing, C., & Khan, K. (2025). Decoding willingness to buy in live-streaming retail: The application of stimulus organism response model using PLS-SEM and SEM-ANN. *Journal of Retailing and Consumer Services*, *84*, 104236. https://doi.org/10.1016/j.jretconser.2025.104236

He, D., Yao, Z., Tang, P., & Ma, Y. (2023). Impacts of different interactions on viewers' sense of virtual community: an empirical study of live streaming platform. *Behaviour & Information Technology*, *42*(7), 940-960. https://doi.org/10.1080/0144929X.2022.2053884

Huang, Z., Zhu, Y., Hao, A., & Deng, J. (2023). How social presence influences consumer purchase intention in live video commerce: the mediating role of immersive experience and the moderating role of positive emotions. *Journal of Research in Interactive Marketing*, *17*(4), 493-509. https://doi.org/10.1108/JRIM-01-2022-0009

Khoi, N. H., Le, A. N.-H., & Nguyen Dong, P. (2023). A moderating - mediating model of the urge to buy impulsively in social commerce live-streaming. *Electronic Commerce Research and Applications*, *60*, 101286. https://doi.org/10.1016/j.elerap.2023.101286

Kotler, P., & Keller, K. L. (2016). *Marketing Management, 15/E. Global Edition*. Pearson Education.

Li, M., Wang, Q., & Cao, Y. (2022). Understanding Consumer Online Impulse Buying in Live Streaming E-Commerce: A Stimulus-Organism-Response Framework. *International Journal of Environmental Research and Public Health*, *19*(7). https://doi.org/10.3390/ijerph19074378

Masahere, U., & Ilyas, F. (2023). Pengaruh Suasana Hati Terhadap Kinerja Karyawan (Studi Kasus Karyawan Mbizmarket di PT. Brilliant Ecommerce Berjaya). *Jurnal Manajemen Dan Bisnis*, *2*(1), 59-68.

Mehrabian, & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press. https://psycnet.apa.org/record/1974-22049-000?ref=nepopularna.org

Ming, J., Jianqiu, Z., Bilal, M., Akram, U., & Fan, M. (2021). How social presence influences impulse buying behavior in live streaming commerce? The role of S-O-R theory. *International Journal of Web Information Systems*, *17*(4), 300-320. https://doi.org/10.1108/IJWIS-02-2021-0012

Oktadinna, Kintan, N., Fauzan, & Rachmat, T. (2024). *IJMSIT The Impact of Online Reviews and Ratings on Consumer Purchasing Decisions on E-commerce Platforms*. *4*(December), 504-515.

Robbins, S. P., & Judge, T. A. (2019). *Organizational Behavior* (18th ed.). Pearson.

Rook, D. W. (1987). The Buying Impulse. *Journal of Consumer Research*, *14*(2), 189. https://doi.org/10.1086/209105

Rook, D. W., & Gardner, M. P. (1993). (1993). In the mood: Impulse buying's affective antecedents. *Research in Consumer Behavior*, *6*, 1-28.

Saputra, F. (2022). *The Influence of Live Streaming Shopping on Purchase Decisions through Customer Engagement on Instagram Social Media*. *5*, 2. https://doi.org/https://doi.org/10.33258/birci.v5i2.5049

Scherer, K. R. (2005). What are emotions? And how can they be measured? *Social Science Information*, *44*(4), 695-729. https://doi.org/10.1177/0539018405058216

Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*.

Sinambela, E. A. (2020). Hubungan Perilaku Konsumtif dan Minat Mahasiswa Menggunakan Jasa Pinjaman Online. *Jurnal Simki Pedagogia*, *3*(6), 98-110. https://doi.org/https://doi.org/10.29407/jsp.v3i6.77

Smith, P. Z. Z. (2023). *Marketing Communications: Integrating Online and Offline, Customer Engagement and Diital Technologies*. Kogan Page Publishers.

Statista. (2025). *Number of users of e-commerce in Indonesia from 2017 to 2029*. Statista.

Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.

Tedry, A. K., & Tulipa, D. (2025). *Pengaruh Social Presence dan Scarcity Terhadap Impulse Buying Melalui Emotion pada Live Streaming E-Commerce Shopee Live*. *19*(April), 31-45.

Verhagen, T., & Van Dolen, W. (2011). The influence of online store beliefs on consumer online impulse buying: A model and empirical application. *Information & Management*, *48*(8), 320-327. https://doi.org/10.1016/j.im.2011.08.001

Xia, Y. X., Chae, S. W., & Xiang, Y. C. (2024). How social and media cues induce live streaming impulse buying? SOR model perspective. *Frontiers in Psychology*, *15*. https://doi.org/10.3389/fpsyg.2024.1379992

Yanti Oktavia, S. (2023). The Role of Social Presence Against Impulse Buying at TikTok Live Streaming Shop Consumers Based on S-O-R Framework. *Journal of Electronic Commerce Research*, *12*(3), 454-472.

Zhang, N., & Hu, W. (2024). Do Psychological Ownership and Communicative Presence Matter? Examining How User-Generated Content in E-Commerce Live Streaming Influences Consumers' Purchase Intention. *Behavioral Sciences*, *14*(8), 696. https://doi.org/10.3390/bs14080696