



THE ROLE OF PERCEIVED ENJOYMENT IN MEDIATING THE INFLUENCE OF INTERACTIVITY, ATTRACTIVENESS, AND SOCIAL PRESENCE ON IMPULSIVE BUYING IN TIKTOK LIVE STREAMING (CASE STUDY ON BATIK NAWILIS)

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Abstract

Driven by the rapid growth of live streaming commerce in Indonesia, this study investigates the psychological mechanisms underlying impulsive buying behaviour within the TikTok Live ecosystem. Specifically, this research examines the effects of interactivity, attractiveness, and social presence on impulsive buying, with perceived enjoyment serving as a mediating variable, using Batik Nawilis live streaming as the empirical context. This study employs a quantitative approach, utilising a survey method. Research using data collected from 200 respondents in Indonesia who met the following criteria: aged 18–28 years, actively using TikTok live streaming, having watched or interacted with batik Nawilis live streams, and having purchased batik Nawilis products through TikTok live streaming. The data were analysed using Structural Equation Modelling (SEM) with the Partial Least Squares (PLS) approach. The findings reveal that interactivity, attractiveness, and social presence have positive and significant effects on perceived enjoyment. Furthermore, perceived enjoyment has a positive and considerable influence on impulsive buying. Additionally, interactivity, attractiveness, and social presence indirectly influence impulsive buying through perceived enjoyment, which serves as a mediating variable.

Keywords: Impulsive Buying, Interactivity, Attractiveness, Social Presence, Perceived Enjoyment, Live Streaming Shopping, SOR Model.

INTRODUCTION

The rapid evolution of internet technology has fundamentally transformed economic transactions, shifting business models from traditional offline operations to innovative digital platforms (Sharma & Shanmugaboopathi, 2022; Imamov & Semenikhina, 2021). Consequently, e-commerce has become a primary shopping channel, with Indonesia's user base projected to reach 99.1 million by 2029 (Babatunde et al., 2022; Kementerian Perdagangan RI, 2024). A significant milestone in this evolution is the rise of live streaming commerce, which integrates real-time video with transactional features to create a dynamic “shoppertainment” experience (Wang & Cao, 2024; Zhu et al., 2021).

In Indonesia, TikTok has emerged as a dominant force, with its user base surging to 157.6 million by July 2024 (Garuda, 2024). The strategic integration of TikTok Shop with Tokopedia has solidified a comprehensive ecosystem in which sophisticated algorithms and engaging content drive massive user engagement (Riyanto & Pertiwi, 2024; Ridko, 2024). This performance by TikTok Shop's 2024 Gross Merchandise Value (GMV) in Indonesia, which reached IDR 100 trillion (Iswenda, 2025).

A critical behavioural outcome within this environment is impulsive buying spontaneous, unplanned purchases driven by emotional urges rather than rational deliberation (Dwitya & Hartono, 2023). The real-time nature of live streaming, combined with time-sensitive promotions and intense

interaction with streamers, amplifies the sense of urgency and scarcity, thereby increasing purchase impulsivity (Yi et al., 2023).

Previous literature identifies interactivity, attractiveness, and social presence as key drivers of this behaviour. Interactivity facilitates two-way communication, enhancing consumer engagement (Fajar & Otok, 2024). Streamer attractiveness, spanning physical traits and communication skills, significantly boosts consumer pleasure (S. Huang & Chen, 2025; Lee & Chen, 2021). Meanwhile, social presence fosters a psychological sense of “being together,” strengthening the emotional connection to the virtual community (Tertiény et al., 2024; H. Wang et al., 2021).

This study positions perceived enjoyment, the degree of pleasure and satisfaction experienced during a session, as a central mediating variable (Tertiény et al., 2024). It is that live streaming attributes do not merely trigger impulsive buying directly; instead, they enhance perceived enjoyment, which subsequently drives spontaneous consumption.

Despite the proliferation of live streaming research, empirical studies that comprehensively examine these variables, especially within the context of local Indonesian brands, remain scarce. This study focuses on Batik Nawilis, a Solo-based brand recognised for its highly interactive TikTok live sessions. By analysing this specific case, the research aims to fill a gap in the literature and provide practical strategic insights for local businesses navigating the competitive landscape of livestreaming commerce.

LITERATURE REVIEW

Consumer Behaviour

Understanding consumer behaviour is vital for developing effective business strategies in the interactive digital age. This behaviour encompasses the complex cognitive, emotional, and behavioural processes underlying decision-making (Pellegrino, 2024). Broadly defined, consumer behaviour includes the selection, acquisition, and disposal of goods, services, or experiences to satisfy needs and express one's identity (Solomon & Russell, 2024; Kotler et al., 2022).

Decision-making is a dynamic process shaped by economic conditions, individual preferences, and social influences (Nivetha et al., 2020). It spans multiple consumption stages, including pre-purchase evaluation and post-consumption disposal (Luong et al., 2020). In digital contexts, emotional factors such as curiosity play a critical role in triggering impulsive buying by driving consumers toward immediate gratification (Strzelecki et al., 2024). Ultimately, consumer behaviour represents a multifaceted process influenced by internal psychological states and external environmental factors across both conventional and digital platforms.

Stimulus-Organism-Response (S-O-R) Theory

The Stimulus–Organism–Response (S-O-R) theory, rooted in behavioural psychology, posits that environmental stimuli trigger internal states, which in turn lead to specific behavioural outcomes.

Mehrabian and Russell (1974) advanced this by identifying the organism as the internal mediator between stimulus and response (Mishra et al., 2022). In modern marketing, Jacoby (2002) extended this framework, viewing consumers as active processors who interpret multidimensional stimuli including product attributes and sensory experiences to form behavioural intentions.

Within the S-O-R framework, stimuli are external environmental cues that influence internal states. In live streaming shopping, interactivity, streamer attractiveness, and social presence serve as primary digital stimuli. These elements facilitate real-time engagement and foster social connections, shaping consumers' digital experiences. The organism represents the internal psychological processes emotions, perceptions, and cognitive evaluations arising from external stimuli (Mishra et al., 2022). In e-commerce, perceived enjoyment is a critical internal response, reflecting the subjective pleasure derived from platform interaction (Salam & Taufik, 2020). This state acts as a pivotal link, intensifying emotional engagement to drive subsequent behaviour (Y. Wang et al., 2020). Response denotes the observable behavioural outcomes of the consumer's internal evaluation. In this context, the response involves impulsive buying, characterized by spontaneous, unplanned purchase decisions (Lee & Chen, 2021). Interactive visual and social cues evoke positive affective states, such as excitement and enjoyment, which motivate impulsive consumption (Xia et al., 2024). Ultimately, the S-O-R theory provides a robust foundation for explaining how digital stimuli in live streaming shopping influence consumers' emotional states and drive impulsive buying behaviour.

Interactivity

Interactivity is the consumer's ability to engage directly and spontaneously with digital environments through features such as live chat, comments, and virtual gifts (Indriastuti et al., 2024). This mechanism allows consumers to simulate product experiences (“touch, feel, and use”), creating a realistic shopping atmosphere that enhances emotional and cognitive engagement (Xu et al., 2022). Furthermore, interactivity facilitates two-way communication, not only building trust but also heightening enjoyment during the purchasing process (Putri & Maryam, 2023).

Moreover, interactivity enables participants to control the flow of information, fostering mutual conversations that drive perceived enjoyment and impulsive buying behaviour (Dwitya & Hartono, 2023). By triggering physiological responses and promoting positive attitudes, real-time interactive experiences significantly influence purchase intentions (Fajar & Otok, 2024). In this context, consumers transition from passive viewers to active participants who provide immediate feedback. In summary, interactivity in live streaming shopping is a real-time, technology-driven communication process that enriches the consumer experience by fostering emotional engagement, trust, and pleasure, ultimately influencing purchasing behaviour.

Attractiveness

Attractiveness refers to a live streamer's physical and personal qualities such as friendliness and communication style that trigger positive consumer perceptions toward promoted products (Lee & Chen, 2021). This attribute stems from pleasant interaction styles that foster viewer comfort (Leong et al., 2022) and build emotional connections through parasocial interactions (S. Huang & Chen, 2025).

Visual elements, including facial expressions and personal branding, play a pivotal role in establishing emotional engagement (Sanjaya et al., 2024). Highly expressive attractiveness can induce emotional excitement, leading to impulsive buying behaviour (Jing & Phang, 2024). Furthermore, audience perceptions of a streamer's warmth and personal charm significantly enhance communication effectiveness and influence purchase intentions (Cheng et al., 2024). In summary, attractiveness in livestreaming shopping is a multifaceted blend of visual and emotional cues that command attention and foster personal connections, ultimately shaping consumer behaviour.

Social Presence

Social presence is defined as the perceived presence of others within digital interactions, making the shopping experience feel more tangible, personal, and mediated (Tertiény et al., 2024). This concept emphasises the interpersonal relationships and intimacy that develop through real-time interactions in a shared virtual space (Y. Huang & Mohamad, 2025; Liu, 2023). In live e-commerce, consumers experience this social presence through engagement with both the host and other viewers, fostering a highly interactive environment (H. Wang et al., 2021).

Furthermore, social presence reflects warm social interactions that strengthen social bonds within online shopping settings (Z. Huang et al., 2024). It encompasses the consumer's perception of the streamer, other viewers, and the platform as real social entities (Liu, 2023). In summary, social presence in livestreaming shopping refers to the real-time perception of others' presence, transforming digital environments into warm, interactive experiences that ultimately enhance social ties and consumer engagement.

Perceived Enjoyment

Perceived enjoyment is the extent to which an activity is considered pleasurable for the individuals involved (van der Walt et al., 2024). In the live streaming ecosystem, this aspect reflects the level of consumer excitement during interaction, which positively influences engagement, attitudes toward content, and the propensity for impulsive purchasing (Lee & Chen, 2021). This sense of pleasure or happiness during the shopping process serves as a primary catalyst that drives spontaneous buying behaviour (Dwitya & Hartono, 2023).

Furthermore, perceived enjoyment is a form of emotional gratification arising from real-time interactions and significantly impacts consumer impulsivity (Indriastuti et al., 2024). This positive emotional response occurs when consumers watch live streams, thereby stimulating unplanned purchasing behaviour (Leong et al., 2022). Such enjoyable experiences consistently increase the

likelihood of impulsive buying through intense emotional engagement (Fajar & Otok, 2024). In summary, perceived enjoyment in livestreaming shopping is a positive emotional reaction and an intrinsic pleasure, regardless of the outcome.

Impulsive Buying

Impulsive buying is defined as a sudden, unplanned, and hedonic purchasing behaviour performed without considering alternative information (Leong et al., 2022). In the context of live streaming, this behaviour occurs within a brief timeframe and is heavily influenced by the streamer's real-time presentation and persuasion (Lee & Chen, 2021). It is an immediate action triggered by emotional urges and the pursuit of instant gratification (Fajar & Otok, 2024).

Furthermore, impulsive buying stems from spontaneous emotions rather than rational analysis or pre-planned shopping lists (Dwitya & Hartono, 2023). This unplanned decision-making process immediately triggers internal impulses rather than cognitive deliberation (Indriastuti et al., 2024). Affective responses, such as perceived enjoyment and social interaction often amplified by gamification mechanisms further encourage consumers to make spontaneous purchases (Zhang et al., 2021). In summary, impulsive buying in live streaming is a spontaneous behaviour driven by strong psychological and emotional stimuli, where hedonic experiences and positive emotional engagement override rational considerations.

Research Framework and Hypotheses Development

Based on the theoretical background and previous literature discussed, the conceptual model for this research is as follows:

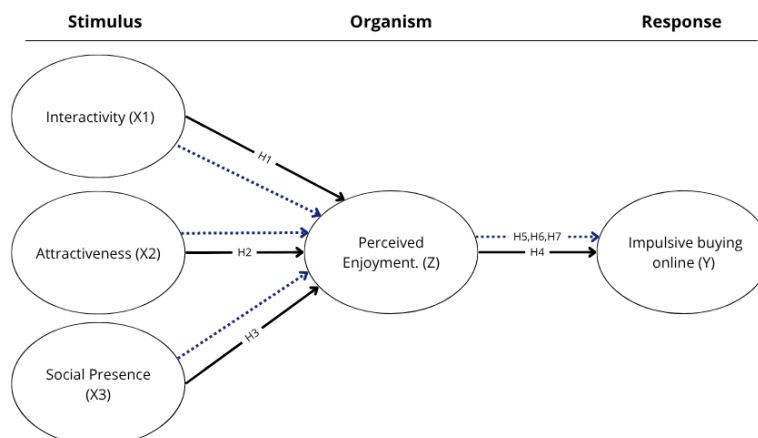


Figure 1. Research Framework

To examine the relationships between these variables within the context of batik Nawilis TikTok live streaming:

H₁: Interactivity has a significant positive effect on Perceived Enjoyment among consumers of batik Nawilis TikTok live streams.

In digital consumer behaviour, interactivity is a pivotal element in creating engaging and responsive user experiences. It enhances consumers' ability to engage in spontaneous, two-way communication with streamers through real-time technological features (Indriastuti et al., 2024; Putri & Maryam, 2023). This interactive capacity allows consumers to simulate product experiences virtually, thereby enhancing emotional and cognitive engagement with online stores (Xu et al., 2022).

Based on the Stimulus-Organism-Response (SOR) framework, interactivity serves as a digital stimulus that triggers positive psychological responses. By allowing participants to control the flow of information and actively engage in reciprocal conversations, interactivity significantly enhances perceived enjoyment (Dwitya & Hartono, 2023). Furthermore, real-time engagement elicits positive physiological responses and favourable attitudes, thereby increasing the likelihood of impulsive buying through a pleasurable shopping experience (Fajar & Otok, 2024). Empirical evidence consistently demonstrates that interactivity is a significant predictor of perceived enjoyment in the context of livestreaming commerce (Fajar & Otok, 2024; Indriastuti et al., 2024; Dwitya & Hartono, 2023).

H₂: Attractiveness has a significant positive effect on Perceived Enjoyment among batik Nawilis TikTok live streaming consumers.

In the context of live streaming, attractiveness refers to consumers' evaluations of a streamer's speech, self-expression, and social interaction, which collectively contribute to a pleasurable viewing experience (Lee & Chen, 2021). It encompasses a blend of physical appearance and communication style that can establish emotional bonds through parasocial interaction (S. Huang & Chen, 2025). This combination creates a positive atmosphere, fostering emotional connection and trust in the information provided.

Under the Stimulus-Organism-Response (SOR) framework, a streamer's attractiveness serves as a visual and social stimulus that influences the consumer's internal state (organism), resulting in comfort and pleasure. Visual elements such as facial expressions, personal branding, and delivery style are pivotal in building emotional attachment (Sanjaya et al., 2024). Warm interactions and aesthetically pleasing presentations contribute directly to perceived enjoyment. Furthermore, physical attractiveness significantly affects visual attention and emotional engagement (Tang et al., 2023), while expressive visual cues elicit emotional excitation (Jing & Phang, 2024).

Consequently, digital consumers increasingly seek enjoyable emotional experiences rather than mere product information. Empirical studies consistently demonstrate that attractiveness is a significant predictor of perceived enjoyment in livestreaming shopping (Fajar & Otok, 2024; Lee & Chen, 2021; Leong, Meng, & Alex, 2022).

H₃: Social Presence has a significant positive effect on Perceived Enjoyment among batik Nawilis TikTok live streaming consumers.

In livestreaming shopping, social presence refers to the perceived presence of others in digital interactions, making the experience feel more tangible and personal (Tertiény et al., 2024). It involves the consumer's perception of the streamer, other viewers, and the platform as active social entities formed through real-time interaction (Liu, 2023). This sense of presence creates a collective experience, ensuring that consumers feel part of a warm and dynamic social environment rather than isolated viewers.

Applying the Stimulus-Organism-Response (SOR) framework, social presence acts as a social stimulus that influences the consumer's internal state (organism), specifically triggering positive emotions such as pleasure and comfort. A strong social presence fosters a supportive, interactive atmosphere, directly heightening perceived enjoyment during the live session. Empirical evidence from previous studies (Liu, 2023; Tertiény et al., 2024; Zuo & Xiao, 2021) consistently shows that social presence significantly contributes to the emergence of perceived enjoyment in the live commerce ecosystem.

H₄: Perceived Enjoyment has a significant positive effect on impulsive buying behaviour among batik Nawilis TikTok live streaming consumers.

Perceived enjoyment is a crucial driver of consumer behaviour in livestreaming shopping. When consumers find product demonstrations and live interactions entertaining, they are more likely to engage in unplanned purchasing. According to Dwitya and Hartono (2023), the feelings of pleasure and happiness experienced during the shopping process act as a direct catalyst for impulsive buying. This positive emotional state creates a favourable psychological state in which consumers become more receptive to purchase stimuli and less reliant on rational deliberation.

Furthermore, the emotional gratification derived from real-time interactions significantly heightens the tendency for impulsive purchases (Indriastuti et al., 2024). This hedonic response triggers spontaneous behaviour as the consumer's focus shifts from cognitive evaluation to immediate emotional satisfaction (Leong et al., 2022). Consequently, high levels of enjoyment during a live session substantially increase the probability of impulsive buying. This relationship has been studied in multiple studies, which show that perceived enjoyment is a significant predictor of impulsive buying behaviour in the live commerce context (Indriastuti et al., 2024; Leong et al., 2022; Dwitya & Hartono, 2023; Zhang et al., 2021).

H₅: Perceived Enjoyment significantly mediates the relationship between Interactivity and Impulsive Buying in the context of batik Nawilis TikTok live streaming.

Within the live streaming ecosystem, interactivity is a foundational element that fosters pleasurable consumer experiences, which, in turn, drive impulsive buying. The capacity for active engagement through spontaneous, two-way communication enabled by real-time chat and comments transforms the shopping process into a personalised and entertaining event (Indriastuti et al., 2024). It enhances interactivity, strengthening the emotional connection between consumers and the presented content (Xu et al., 2022).

As interactivity increases, consumers perceive the experience as more engaging and enjoyable (Putri & Maryam, 2023). Specifically, the ability to control information flow and engage in reciprocal dialogue enhances perceived enjoyment, which serves as an emotional bridge to spontaneous, non-rational purchasing decisions (Dwitya & Hartono, 2023). Under these conditions, the pleasure derived from direct interaction with streamers makes consumers more susceptible to immediate buying triggers, such as limited-time offers or flash sales (Fajar & Otok, 2024). Consequently, interactivity does not merely trigger behaviour in isolation; it indirectly influences impulsive buying by elevating the consumer's emotional state. Empirical evidence supports this mediating pathway, indicating that perceived enjoyment effectively links interactive stimuli to impulsive consumption in live commerce (Indriastuti et al., 2024; Fajar & Otok, 2024; Dwitya & Hartono, 2023).

H₆: Perceived Enjoyment significantly mediates the relationship between Attractiveness and Impulsive Buying in the context of batik Nawilis TikTok live streaming.

In livestreaming shopping, attractiveness serves as a powerful external stimulus that shapes consumers' psychological states. This concept transcends mere physical appearance, encompassing a holistic blend of personality, communication style, social interaction, and aesthetic visual presentation (Lee & Chen, 2021). Streamers who exhibit pleasant interaction styles foster a sense of comfort and enjoyment among viewers (Leong et al., 2022), creating an atmosphere that triggers positive emotional responses.

Guided by the Stimulus-Organism-Response (SOR) framework, a streamer's charismatic presence and aesthetic content delivery influence the consumer's internal state (organism) through feelings of pleasure and comfort. Visual elements, such as facial expressions and delivery style, play a crucial role in fostering emotional attachment (Sanjaya et al., 2024), which in turn contributes to the perception of enjoyment. It heightens the emotional state, then acts as a primary catalyst for impulsive purchasing decisions. Specifically, expressive and visual attractiveness induce emotional excitation, which significantly drives the urge to buy immediately (Jing & Phang, 2024).

Consequently, perceived enjoyment functions as a robust emotional bridge connecting the streamer's attractiveness to the consumer's spontaneous purchasing behaviour. Empirical evidence

supports this mediating pathway, indicating that attractiveness in live streaming enhances perceived enjoyment, which in turn facilitates impulsive buying (Fajar & Otok, 2024; Lee & Chen, 2021; Leong, Meng, & Alex, 2022).

H₇: Perceived Enjoyment significantly mediates the relationship between Social Presence and Impulsive Buying in the context of batik Nawilis TikTok live streaming.

In livestreaming shopping, social presence is vital for fostering pleasurable, emotional consumer experiences. It represents the perceived psychological connection during digital interactions, making the shopping experience feel tangible and personal (Tertienny et al., 2024). Beyond simple communication, social presence creates a “shared experience” where consumers feel part of a warm, dynamic community rather than isolated viewers (G.K. & Puthussery, 2023). This perception is formed through real-time interactions among the streamer, the platform, and other viewers (Liu, 2023).

According to the Stimulus-Organism-Response (SOR) framework, social presence acts as an external stimulus that shapes the consumer's internal state (organism), specifically perceived enjoyment. Intense social presence characterised by warm, real-time social interactions enhances emotional engagement and shopping enjoyment (Z. Huang et al., 2024). This psychological gratification subsequently serves as a primary trigger for spontaneous purchasing. In this mechanism, perceived enjoyment serves as a mediator linking social presence and impulsive buying. Consumers who derive high levels of pleasure from the social atmosphere of a live session are more susceptible to unplanned purchases. Empirical evidence from various studies confirms that social presence positively influences perceived enjoyment, which ultimately drives impulsive buying behaviour in the live commerce ecosystem (Tertienny et al., 2024; Liu, 2023; Zuo & Xiao, 2021).

METHOD

This study employs a quantitative research method with a survey approach to examine the effects of interactivity, attractiveness, and social presence on impulsive buying through perceived enjoyment among TikTok live streaming consumers of Batik Nawilis. The research population consists of Batik Nawilis livestreaming consumers aged 18–28 years who are active TikTok livestreaming users, have watched or interacted with Batik Nawilis live streams, and have previously purchased Batik Nawilis products through TikTok live streaming. A total of 200 respondents were selected using purposive sampling, based on the following criteria. Data were collected via an online questionnaire using a 6-point Likert scale to avoid neutral responses and to ensure clearer expression of respondents' preferences. Data analysis using Structural Equation Modelling (SEM) with the Partial Least Squares (PLS) approach to assess validity, reliability, and the relationships among variables. The outer model evaluation included convergent validity, discriminant validity, and reliability, while the inner model evaluation comprised predictive relevance (Q^2) and the coefficient of determination (R^2). Hypothesis

testing was performed using t-tests with a significance level of 5% ($t > 1.96$) and analysed using SmartPLS 4.0.

RESULTS AND DISCUSSION

Result

Respondent Profile

Each respondent has distinct characteristics, based on their gender, age, occupation, monthly income, monthly online shopping expenditure, and the frequency of watching TikTok live streams. The characteristics of the respondents in this study are as follows:

Table 1 Respondent Profile

Respondent Characteristics		Frequency	Percentage
Gender	Male	59	29.5%
	Female	141	70.5%
Age	18 - 22 years old	122	61%
	23 -25 years old	47	23.5%
	26 -28 years old	31	15.5%
Current Occupation	Student	122	61 %
	Entrepreneur / Freelance	31	15.5%
	Private Employee / Civil Servant	47	23.5%
Average Monthly Income	< IDR 1.500.000	100	50%
	IDR 1.500.000 – IDR 3.500.000	68	34%
	IDR 3.500.001 – IDR 7.000.000	22	11%
	> IDR 7.000.000	10	10%
Monthly Online Shopping Expenditure	< IDR 500.000	40	20%
	IDR 500.001 – 1.000.000	61	30.5%
	> IDR 1.000.000	99	49.5%
TikTok Live Streaming viewing frequency	Rarely	86	18%
	Several times a week	79	39.5%
	Almost every day	85	42.5%

Based on Table 1, the respondents were predominantly female (70.5%), suggesting that TikTok livestreaming shopping, particularly on the Batik Nawilis account, is more attractive to female consumers. This finding aligns with previous evidence that women tend to be more active in online shopping and more responsive to interactivity and visual appeal (Iswenda, 2025). Most respondents belonged to Generation Z, with those aged 18–22 years constituting the largest group (61%), followed by those aged 23–25 years (23.5%) and those aged 26–28 years (15.5%). This age group is highly active on social media and exhibits stronger impulsive buying tendencies (Lina et al., 2022).

In line with this age distribution, the majority of respondents were students (61%), followed by employees (23.5%) and entrepreneurs/freelancers (15.5%). Despite relatively low monthly incomes, with 50% of respondents earning below IDR 1,500,000, they demonstrated substantial online shopping

activity, as 49.5% spent more than IDR 1,000,000 per month. Additionally, exposure to TikTok live streaming was high: 42.5% of respondents watched almost daily, and 39.5% watched several times per week. This intensive exposure suggests that respondents are highly engaged with live streaming content due to its interactivity, attractiveness, and social presence, which enhances perceived enjoyment and ultimately triggers impulsive buying.

Measurement Model Testing (Outer Model)

1. Convergent Validity

Convergent validity was assessed by correlating indicator scores with latent variable values. According to Hair et al. (2022), an indicator is valid if it has an outer loading value greater than 0.70 and an Average Variance Extracted (AVE) value exceeding 0.50. Convergent validity in this study was assessed using the loading factor, with the measurement results presented as follows:

Table 2. Convergent Validity

Variable	Item	Loading Factor Value	AVE
<i>Interactivity (X1)</i>	X1.1	0,744	0,554
	X1.2	0,704	
	X1.3	0,752	
	X1.4	0,723	
	X1.5	0,692	
	X1.6	0,787	
	X1.7	0,733	
	X1.8	0,714	
	X1.9	0,672	
<i>Attractiveness (X2)</i>	X2.1	0,846	0,649
	X2.2	0,756	
	X2.3	0,768	
	X2.4	0,811	
	X2.5	0,820	
	X2.6	0,827	
<i>Social Presence (X3)</i>	X3.1	0,729	0,587
	X3.2	0,686	
	X3.3	0,826	
	X3.4	0,726	
	X3.5	0,740	
	X3.6	0,731	
	X3.7	0,807	
	X3.8	0,762	
	X3.9	0,758	
	X3.10	0,777	
<i>Perceived Enjoyment (Z)</i>	Z.1	0,774	0,612
	Z.2	0,761	
	Z.3	0,769	
	Z.4	0,823	
	Z.5	0,753	
<i>Impulsive Buying</i>	Y.1	0,829	0,672

(Y)	Y.2	0,795	
	Y.3	0,823	
	Y.4	0,806	
	Y.5	0,841	

Based on the table, most items or indicators in this study exhibit factor loading values greater than 0.70 and Average Variance Extracted (AVE) values exceeding 0.50, thereby meeting the validity criteria proposed by Hair et al. (2022). It indicates that the measurement items adequately represent the underlying constructs, namely interactivity, attractiveness, social presence, perceived enjoyment, and impulsive buying. However, several indicators specifically X1.5, X1.9, and X3.2 failed to meet the convergent validity threshold due to factor loading values below 0.70 and were therefore removed from further analysis. Overall, the majority of the measurement items are valid indicators of their respective latent variables.

2. Discriminant Validity

To establish discriminant validity, to confirm the empirical uniqueness of each construct. According to Hair et al. (2022), discriminant validity occurs when each indicator's loading on its respective construct is greater than 0.7 and surpasses its loadings on all other constructs in the model.

Table 3. Discriminant Validity (Cross Loading)

	Interactivity	Attractiveness	Social Presence	Impulsive Buying	Perceived Enjoyment
X1.1	0.756	0.509	0.524	0.398	0.503
X1.2	0.701	0.466	0.465	0.454	0.531
X1.3	0.767	0.470	0.520	0.443	0.545
X1.4	0.737	0.442	0.557	0.475	0.502
X1.6	0.782	0.552	0.539	0.439	0.526
X1.7	0.730	0.373	0.550	0.476	0.513
X1.8	0.733	0.478	0.466	0.386	0.503
X2.1	0.503	0.846	0.553	0.612	0.581
X2.2	0.564	0.756	0.526	0.513	0.470
X2.3	0.438	0.768	0.381	0.423	0.466
X2.4	0.532	0.811	0.538	0.529	0.475
X2.5	0.549	0.820	0.516	0.533	0.540
X2.6	0.472	0.827	0.485	0.528	0.495
X3.1	0.431	0.351	0.723	0.391	0.412
X3.3	0.543	0.489	0.838	0.487	0.533
X3.4	0.449	0.446	0.743	0.500	0.495
X3.5	0.579	0.513	0.739	0.554	0.624
X3.6	0.430	0.456	0.734	0.473	0.517
X3.7	0.572	0.475	0.802	0.582	0.490
X3.8	0.596	0.549	0.767	0.581	0.550
X3.9	0.586	0.493	0.762	0.506	0.533
X3.10	0.564	0.477	0.776	0.495	0.552
Y.1	0.495	0.562	0.583	0.829	0.484
Y.2	0.449	0.477	0.494	0.795	0.487
Y.3	0.443	0.583	0.563	0.823	0.507

Y.4	0.498	0.458	0.524	0.806	0.473
Y.5	0.527	0.581	0.569	0.841	0.607
Z.1	0.509	0.398	0.533	0.486	0.775
Z.2	0.524	0.491	0.509	0.507	0.760
Z.3	0.580	0.565	0.533	0.527	0.797
Z.4	0.587	0.512	0.512	0.445	0.824
Z.5	0.518	0.486	0.608	0.489	0.752

As presented in the table above, each indicator demonstrates a higher loading on its assigned construct compared to its cross-loadings on other constructs. Following the criteria suggested by Hair et al. (2022), these results confirm that discriminant validity is well-established for all constructs in the model.

3. Reliability Assessment

Construct reliability in the PLS-SEM model was assessed using two primary measures: Cronbach's alpha and composite reliability. Reliability is employed to evaluate the consistency and stability of indicators in measuring the same construct. According to Hair et al. (2022), a construct is considered reliable if it possesses Cronbach's alpha and composite reliability values greater than 0.70. The results of the construct reliability assessment are shown in the following table:

Table 4. Reliability Assessment

Variable	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
<i>Attractiveness</i>	0,891	0,896	0,917
<i>Impulsive Buying</i>	0,878	0,884	0,911
<i>Interactivity</i>	0,865	0,866	0,897
<i>Perceived Enjoyment</i>	0,841	0,841	0,887
<i>Social Presence</i>	0,912	0,914	0,927

The data reveal that all constructs achieved Cronbach's alpha and composite reliability values above 0.7. Therefore, the variables attractiveness, interactivity, social presence, perceived enjoyment, and impulsive buying exhibit robust internal consistency. These results confirm that the indicators are reliable for further analysis and subsequent structural model evaluation.

Structural Model Assessment (Inner Model)

1. Coefficient of Determination (R-Square) Results

The coefficient of determination (R^2) was employed to assess the model's explanatory power. Following Hair et al. (2022), R^2 values of 0.67, 0.33, and 0.19 are categorised as substantial, moderate, and weak, respectively. Higher R^2 values, closer to 1, indicate a superior ability of the independent variables to explain the variance in the dependent variable the R^2 results in the table below.

Table 5. R-Square Results

Variabel	R-square	R-square adjusted
Perceived Enjoyment	0,592	0,586
Impulsive Buying	0,396	0,393

The adjusted R² results indicate that perceived enjoyment has a value of 0.586, representing a moderate predictive power. It suggests that interactivity, attractiveness, and social presence explain 58.6% of the variance in viewer enjoyment during TikTok batik Nawilis live streaming. Furthermore, impulsive buying yielded an adjusted R² of 0.393, which falls within the moderate category. It signifies that the combination of interactivity, attractiveness, social presence, and perceived enjoyment accounts for 39.3% of impulsive buying behaviour. While the model demonstrates adequate predictive capability, these results imply that other external factors also contribute to both perceived enjoyment and impulsive buying in this context.

2. Predictive Relevance (Q- Square) Results

Predictive relevance (Q²) was assessed to evaluate the model's ability to predict endogenous construct indicators. According to Hair et al. (2022), a Q² value above zero indicates predictive relevance, with values exceeding 0.35 representing strong predictive power.

Table 6. Q- Square Results

Variabel	Q ² predict
<i>Impulsive Buying</i>	0,443
<i>Perceived Enjoyment</i>	0,577

The results show that both endogenous variables are highly predictive. Impulsive buying yielded a Q² of 0.443, confirming that the combination of interactivity, attractiveness, social presence, and perceived enjoyment is highly relevant in predicting viewer behaviour. Similarly, perceived enjoyment achieved a Q² of 0.577, indicating that the model has a significant predictive power for viewers' enjoyment levels. These high Q² values demonstrate that the model not only provides explanatory insights but also accurate behavioural predictions in the context of TikTok live streaming.

3. Hypothesis Testing (Bootstrapping)

The hypotheses in this study are tested using Partial Least Squares (PLS) structural equation modelling with a bootstrapping procedure. The bootstrapping results provide the t-statistics for each structural path. Hypothesis testing was conducted at the 0.05 significance level, with the null hypothesis accepted if the t-statistic exceeds 1.96. The results of the hypothesis testing are as follows.

Table 7. Hypothesis Testing (Bootstrapping)

Path Relationship	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics	P values	conclusion
H1: <i>Interactivity</i> → <i>Perceived Enjoyment</i>	0,335	0,336	0,084	3,986	0,000	significant

H2: <i>Attractiveness → Perceived Enjoyment</i>	0,218	0,216	0,068	3,201	0,001	significant
H3: <i>Social Presence → Perceived Enjoyment</i>	0,321	0,321	0,083	3,860	0,000	significant
H4: <i>Perceived Enjoyment → Impulsive Buying</i>	0,629	0,629	0,078	8,089	0,000	significant
H5: <i>Interactivity → Perceived Enjoyment → Impulsive Buying</i>	0,211	0,212	0,063	3,373	0,001	significant
H6: <i>Attractiveness → Perceived Enjoyment → Impulsive Buying</i>	0,137	0,137	0,048	2,838	0,004	significant
H7: <i>Social Presence → Perceived Enjoyment → Impulsive Buying</i>	0,202	0,203	0,061	3,333	0,001	significant

Based on Table 7, interactivity has a positive and significant effect on perceived enjoyment, as indicated by a t-value of 3.986 (> 1.96) and a p-value of 0.000 (< 0.05). Similarly, attractiveness exerts a positive and significant effect on perceived enjoyment, with a t-value of 3.201 (> 1.96) and a p-value of 0.001 (< 0.05). Social presence also demonstrates a positive and significant influence on perceived enjoyment, evidenced by a t-value of 3.860 (> 1.96) and a p-value of 0.000 (< 0.05).

Furthermore, perceived enjoyment has a positive and significant effect on impulsive buying, with a t-value of 8.089 (> 1.96) and a p-value of 0.000 (< 0.05). In addition, interactivity has a positive and significant indirect effect on impulsive buying through perceived enjoyment, as shown by a t-value of 3.373 (> 1.96) and a p-value of 0.001 (< 0.05). Attractiveness also has a positive and significant indirect effect on impulsive buying via perceived enjoyment, with a t-value of 2.838 (> 1.96) and a p-value of 0.004 (< 0.05). Finally, social presence positively and significantly affects impulsive buying through perceived enjoyment, indicated by a t-value of 3.333 (> 1.96) and a p-value of 0.001 (< 0.05).

Discussion

Based on the results of all data analyses and previous findings, the relationship between the variables can be discussed in more detail as follows:

The Impact of Interactivity on Perceived Enjoyment

The results demonstrate that interactivity has a significant positive effect on perceived enjoyment. Higher levels of interaction during TikTok live streams lead to greater viewer enjoyment. This finding aligns with the Stimulus-Organism-Response (S-O-R) framework, in which interactivity serves as a stimulus that triggers internal emotional reactions, such as pleasure and entertainment.

Empirically, this study supports previous research by Indriastuti et al. (2024), Fajar and Otok (2024), and Dwitya and Hartono (2023), all of whom reported that interactivity enhances enjoyment in livestream shopping contexts. On the Batik Nawilis TikTok account, the comment feature enables

active, two-way communication, turning viewers into active participants. Consistent with Xue et al. (2020), this real-time interaction fosters a personal and participatory atmosphere.

Furthermore, the streamers' ability to provide relevant information and friendly, real-time responses to product inquiries creates an engaging shopping experience. This high level of responsiveness makes viewers feel valued and emotionally involved, thereby directly strengthening their perceived enjoyment during the livestream.

The Impact of Attractiveness on Perceived Enjoyment

The results indicate that attractiveness has a significant positive impact on perceived enjoyment. This finding aligns with the Stimulus-Organism-Response (S-O-R) framework, where attractiveness serves as a visual and social stimulus that triggers internal feelings of pleasure and entertainment. These results are consistent with those of Cheng et al. (2024), Lee and Chen (2021), and Leong et al. (2021), who posited that attractiveness fosters an enjoyable atmosphere and enhances consumers' hedonic experience.

In the context of batik Nawilis TikTok live streaming, viewers perceive the streamers as physically appealing and personable, which serves as a primary driver of engagement. Beyond physical appearance, the streamers' friendly and humble demeanour creates a warm social atmosphere that makes viewers feel comfortable and entertained. This combination of visual appeal and social warmth transforms the broadcast into a more immersive experience, effectively enhancing the viewers' perceived enjoyment.

The Impact of Social Presence on Perceived Enjoyment

The study results indicate that social presence has a significant positive influence on perceived enjoyment. A heightened sense of social presence during TikTok live streaming sessions leads to greater viewer enjoyment. This finding is consistent with the Stimulus-Organism-Response (S-O-R) framework, in which social presence serves as a stimulus that elicits internal emotional reactions, such as pleasure and comfort.

These results align with previous research by Zuo and Xiao (2021), Liu (2023), and Tertieny et al. (2024), who demonstrated that social presence fosters a positive social atmosphere and enhances emotional engagement. In the context of batik Nawilis TikTok live streams, viewers experience a strong sense of presence due to the broadcasts' personal, intimate nature. The dynamic interaction, real-time responses from streamers, and community activity during the live session reinforce a tangible social experience. This sense of connectedness and emotional relevance ultimately strengthens the viewers' perceived enjoyment.

The Impact of Perceived Enjoyment on Impulsive Buying

The study results demonstrate that perceived enjoyment has a significant positive influence on impulsive buying. It indicates that higher levels of pleasure and satisfaction during TikTok

livestreaming sessions increase the likelihood of spontaneous purchases. These findings align with the Stimulus-Organism-Response (S-O-R) framework, in which perceived enjoyment serves as the organism an internal affective state that triggers a consumer response in the form of impulsive buying behaviour.

This finding is consistent with previous research by Zhang et al. (2021), Indriastuti et al. (2024), and Dwitya and Hartono (2023), who concluded that emotional engagement and hedonic experiences in online shopping significantly strengthen impulsive responses. During the Batik Nawilis TikTok live sessions, the entertaining, comfortable atmosphere fosters a positive emotional state among viewers. This sense of enjoyment encourages viewers to make spontaneous purchases, often for products not intended for initial purchase, confirming that entertainment value is a key driver of impulsive consumption in livestreaming commerce.

The Mediating Role of Perceived Enjoyment between Interactivity and Impulsive Buying

The results indicate that interactivity has a significant positive effect on impulsive buying, with perceived enjoyment as a mediating factor. It confirms that high levels of interaction during TikTok live streaming foster emotional engagement, which subsequently drives spontaneous purchasing behaviour. These findings align with the Stimulus-Organism-Response (S-O-R) framework, in which interactivity serves as the stimulus that triggers perceived enjoyment (the organism), ultimately leading to impulsive buying (the response).

This study supports empirical evidence from Indriastuti et al. (2024), Fajar and Otok (2024), and Dwitya and Hartono (2023), who argued that responsive interaction increases emotional satisfaction and spontaneous buying urges. In the context of batik Nawilis, active communication through the comment feature creates a lively atmosphere that enhances viewer enjoyment. This entertainment value acts as a critical bridge; the pleasure derived from real-time, two-way interaction serves as an emotional catalyst, transforming a viewer's entertainment experience into an unplanned consumptive action.

The Mediating Role of Perceived Enjoyment between Attractiveness and Impulsive Buying

The analysis reveals that attractiveness has a significant and positive influence on impulsive buying, mediated by perceived enjoyment. This finding indicates that the streamers' appeal on TikTok live streaming effectively fosters a sense of pleasure, which subsequently drives spontaneous purchasing behaviour. Consistent with the Stimulus-Organism-Response (S-O-R) framework, attractiveness serves as the stimulus that triggers an internal emotional state (organism), resulting in a spontaneous consummatory response.

This result aligns with empirical studies by Lee and Chen (2021), Fajar and Otok (2024), and Leong et al. (2022), who demonstrated that attractiveness enhances positive moods and impulsive urges. In the case of Batik Nawilis, the streamers' physical appeal and engaging demeanour create a

comfortable and entertaining atmosphere. This emotional gratification acts as a powerful catalyst; when viewers are entertained and immersed in the broadcast, they become more susceptible to making unplanned, spontaneous purchases. Consequently, the pleasure derived from the streamers' attractiveness effectively bridges the gap between visual appeal and impulsive consumption.

The Mediating Role of Perceived Enjoyment between Social Presence and Impulsive Buying

The study results indicate that social presence has a significant positive influence on impulsive buying, mediated by perceived enjoyment. It suggests that a heightened sense of social connection during TikTok live streaming fosters emotional satisfaction, which in turn drives spontaneous purchasing behaviour. These findings align with the Stimulus-Organism-Response (S-O-R) framework, in which social presence serves as the stimulus that triggers an internal affective state (organism), leading to an impulsive consumptive response.

This finding is consistent with research by Liu (2023), Zuo and Xiao (2021), and Tertieny et al. (2024), who emphasised that social presence enhances emotional engagement and impulsive urges in livestreaming commerce. In the context of Batik Nawilis, the intimate and personalised experience characterised by direct greetings and active community interaction makes viewers feel socially connected and valued. This social warmth serves as a primary source of enjoyment, acting as a catalyst that turns a pleasant viewing experience into an unplanned purchase.

CONCLUSION

This study concludes that all seven proposed hypotheses are empirically supported, demonstrating significant positive relationships among the variables. Grounded in the Stimulus-Organism-Response (S-O-R) framework, the findings reveal that interactivity, attractiveness, and social presence serve as potent external stimuli that effectively enhance viewers' perceived enjoyment (the organism). This internal psychological state then acts as a crucial emotional catalyst, triggering impulsive buying behaviour (the response) within the TikTok livestreaming context of Batik Nawilis. Specifically, the results highlight that perceived enjoyment plays a pivotal mediating role; the pleasure derived from real-time interactions, the visual appeal of streamers, and the sense of social connectedness are the primary drivers of unplanned purchases. In the competitive landscape of livestream commerce, emotional engagement is more influential than purely functional aspects. Therefore, creating a lively, attractive, and socially inclusive atmosphere is essential for converting viewers into impulsive buyers, as entertainment value significantly bridges the gap between digital engagement and immediate consumption.

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