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THE INFLUENCE OF LIVE STREAMING STIMULI ON IMPULSE BUYING BEHAVIOR OF FASHION PRODUCTS AND USER STICKINESS ON SHOPEE AND TOKOPEDIA LIVE

PENGARUH STIMULUS SIARAN LANGSUNG TERHADAP PERILAKU PEMBELIAN IMPULSIF PRODUK FASHION DAN KETETAPAN PENGGUNA DI SHOPEE DAN TOKOPEDIA LIVE

Gorga Agustinus Pangihutan[1], Anna Amalyah Agus[2]
Master of Management Study Program, Universitas Indonesia[1,2]
agustinusgorga@gmail.com[1]

ABSTRACT

The growth of e-commerce in Indonesia has driven the integration of live streaming as a dynamic marketing tool. This research explores how live streaming stimuli affect both impulse buying behavior and user engagement, with perceived hedonic value acting as a mediating factor. Employing a quantitative method through Structural Equation Modeling (SEM) and surveying 300 participants, the study reveals that live streaming stimuli have a significant impact on triggering impulsive purchases and fostering user interaction. Additionally, perceived hedonic value plays a key role in strengthening consumer engagement with e-commerce platforms. The findings offer valuable insights for marketers and online platforms to develop more impactful live streaming strategies for product promotion.

Keywords: *Live Streaming, E-Commerce, Impulse Buying Behavior, User Engagement, Perceived Hedonic Value.*

ABSTRAK

Pertumbuhan e-commerce di Indonesia telah mendorong integrasi live streaming sebagai alat pemasaran yang dinamis. Penelitian ini mengeksplorasi bagaimana stimulus live streaming memengaruhi perilaku pembelian impulsif dan keterlibatan pengguna, dengan nilai hedonik yang dirasakan berperan sebagai faktor mediasi. Menggunakan metode kuantitatif melalui Structural Equation Modeling (SEM) dan survei terhadap 300 peserta, studi ini menunjukkan bahwa stimulus live streaming memiliki dampak signifikan dalam memicu pembelian impulsif dan meningkatkan interaksi pengguna. Selain itu, nilai hedonik yang dirasakan memainkan peran kunci dalam memperkuat keterlibatan konsumen dengan platform e-commerce. Temuan ini memberikan wawasan berharga bagi pemasar dan platform online untuk mengembangkan strategi live streaming yang lebih efektif dalam promosi produk.

Kata Kunci: Live Streaming, E-Commerce, Perilaku Pembelian Impulsif, Keterlibatan Pengguna, Nilai Hedonik Yang Dirasakan.

INTRODUCTION

Digital transformation has revolutionized the way people interact, communicate, and conduct economic transactions. The internet has become a fundamental infrastructure in modern life, with over 5.56 billion users worldwide by 2025, accounting for approximately 67.9% of the global population. Indonesia ranks fourth in the world for the highest number of internet users, with 212 million users—equivalent to 74.6% of its total population (Statista, 2025).

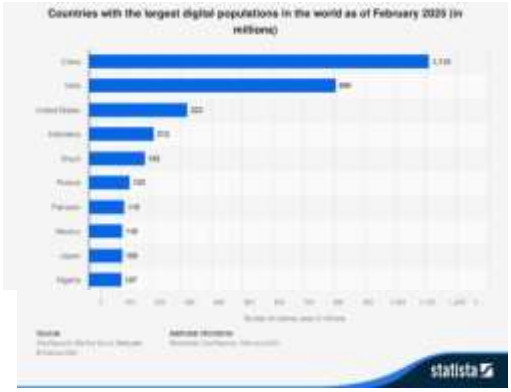


Figure 1. List of Countries with the Largest Digital Populations in the World

Source: Statista (2025)

This growth has also driven the rapid development of the national e-

commerce sector. The digitalization phenomenon is further reflected in the increasing penetration of social media, which has reached 143 million users in Indonesia (Kepios, 2025). E-commerce has become the primary channel for people to shop, fueled by easy access, a wide variety of product choices, and increasingly interactive promotional strategies. One of the most prominent innovations in digital marketing strategies is **e-commerce live streaming**—a feature that allows sellers to showcase products and interact directly with potential buyers through real-time video broadcasts.

Figure 2. Internet Users in Indonesia in 2025

Source: Kepios (2025)

The growth in the number of e-commerce users in Indonesia has encouraged sellers to take advantage of new opportunities in digital marketing through the live streaming feature. Live streaming on e-commerce platforms allows online stores or streamers to broadcast video and audio in real-time, creating direct interaction with the audience. This live streaming combines various elements such as text, images, sound, and visual expressions, aiming to make the shopping experience more immersive, clear, realistic, and interactive between the host and viewers (Tong, 2017). E-commerce live streaming also incorporates elements of social commerce, providing an interactive, educational, and engaging online shopping experience through dynamic and persuasive content (Lo et al., 2022).

Shopee and Tokopedia consistently hold the largest market shares. According to research conducted by Populix (2024), based on two main indicators—Brand Used Most Often (BUMO) and Top of Mind (TOM)—Shopee ranks first, far ahead of other e-commerce brands. On the indicator of most frequently used brand, 61% of respondents chose Shopee, followed by Tokopedia (22%), TikTok Shop (9%), and Lazada (7%). For the most recalled brand, Shopee leads with 70%, followed by Tokopedia (22%), Lazada (5%), and TikTok Shop (2%). Shopee is known for interactive features such as Shopee Live, which supports limited-time promotions like Flash Sales, while Tokopedia Play offers an appealing visualization approach to promote products. The popularity of these two platforms makes them highly relevant for studying consumer behavior in e-commerce live streaming in Indonesia.

Fashion products, such as clothing, shoes, and accessories, are among the highest-selling categories on Indonesian e-commerce platforms. In 2024, the fashion category accounted for approximately 79% of total sales through e-commerce live streaming features, making it the most dominant category (Katadata, 2024). The highly visual nature of fashion products and their influence by trends make this category ideal for marketing via live streaming. Consumers can directly see product details such as color, design, and size before deciding to purchase. Additionally, fashion often carries high emotional and hedonic value, making it relevant to study in the context of impulse buying behavior.

E-commerce live streaming presents strategic opportunities for platform owners and brands to build a

more immersive and enjoyable shopping experience. Experience-based marketing strategies become important, including understanding impulse buying behavior. Although impulse buying was initially often associated with irrational decisions, recent studies show that in the context of e-commerce live streaming, impulse buying behavior actually reflects high emotional involvement and a pleasurable shopping experience. Consumers do not just buy because they are tempted, but because they feel entertained, engaged, and motivated by the interactive and appealing atmosphere of the broadcast (Huang et al., 2024; Zhou et al., 2023).

Impulse buying behavior refers to spontaneous purchasing decisions often triggered by enjoyable experiences rather than prior rational planning (Beatty & Ferrell, 1998). In designing live streaming-based marketing strategies, ethical marketing aspects become very important. Ethical marketing does not aim to exploit consumers' emotions but rather to create pleasant and relevant experiences, giving consumers full control over their purchasing decisions (Kotler & Armstrong, 2017). In the digital context, especially live streaming, impulse purchases are driven by visual experience, real-time interaction, and communication with the streamer. This then creates emotional pleasure that naturally triggers purchasing decisions (Xu et al., 2020). Impulse buying in this context is also a form of self-reward or spontaneous expression of consumer satisfaction and excitement, which positively impacts mood and personal satisfaction (Hausman, 2000).

One important aspect bridging the relationship between live streaming stimuli and consumer behavior is perceived hedonic value, which is the feeling of pleasure, satisfaction, and entertainment experienced by consumers while following the broadcast. When consumers view shopping as an enjoyable and entertaining experience, they become more vulnerable to making impulsive purchases (Huang et al., 2024). Additionally, the same study shows that perceived hedonic value significantly contributes to user stickiness, where positive emotional experiences during live streaming sessions encourage consumers to keep returning to use the platform and build long-term attachment.

To understand consumer behavior in the context of sales through e-commerce live streaming, this study refers to the Stimulus–Organism–Response (S-O-R) framework. Based on previous studies by Zhang et al. (2024) and Huang et al. (2024), live streaming stimuli—such as anchor characteristics, social interaction, visualization, gratification, and gamification—affect consumers' psychological conditions both affectively and cognitively. In this research, the psychological aspect examined is perceived hedonic value, which is the feeling of pleasure and emotional satisfaction arising during live streaming sessions. The final observed responses include impulse buying behavior, as spontaneous purchase actions, and user stickiness, reflecting users' attachment to the platform. This study specifically examines factors influencing impulsive buying behavior toward fashion products through Shopee Live and Tokopedia Play features, as well as investigating differences in effects based on gender and platform.

LITERATURE REVIEW

S-O-R Model

This study applies the Stimulus-Organism-Response (S-O-R) model to analyze how e-commerce live streaming stimuli influence impulse buying behavior and user engagement on e-commerce platforms. The S-O-R model

explains that behavioral responses (R) result from internal states (O) triggered by external stimuli (S) (Teh et al., 2014). The model has been widely used in e-commerce research (Zhang et al., 2024). For example, Li et al. (2022) found that strong social presence from streamers and platforms induces positive emotions, which increase impulse buying. Previous studies confirm the validity of S-O-R in explaining how situational factors affect behavior through internal cognitive and emotional states (Al-Adwan et al., 2022; Wang et al., 2022).

S-O-R is also applied to impulse buying analysis (Tang et al., 2023). Yi et al. (2023) showed that viewing and purchasing frequency impact consumer impulse tendencies, supporting the model's suitability for this research.

Stimulus

Stimuli are events that change perception and influence behavior, defined as time- and place-specific factors affecting current behavior systematically (Flavián et al., 2017). In this study, stimuli include live streaming elements like anchor characteristics, time pressure, activities, social interaction, gratification, gamification, and visualization.

Organism

According to Mehrabian and Russell (1974), the organism is the transitional internal state between stimulus and response, involving affective (emotional) and cognitive (thinking) conditions. Emotional states influence motivations such as approach/avoidance, interaction desire, enjoyable shopping experiences, and impulse buying (Flavián et al., 2017; Xu et al., 2020). Organism factors in this study include consumer vulnerability and perceived hedonic value.

Response

The S-O-R model explains that responses are individuals' main actions and decisions influenced by their affective and cognitive states. In e-commerce, key consumer behaviors include planned purchases, impulse buying, and repurchase intentions (Li et al., 2022). Applying the S-O-R model to e-commerce and live streaming social commerce, especially regarding impulse buying, strengthens this study's theoretical foundation (Ming et al., 2021; Zhu et al., 2020). This research measures impulse buying tendencies and user stickiness on e-commerce platforms.

Live Streaming E-commerce

Live streaming e-commerce combines broadcasting technology to create a virtual environment for real-time interaction, entertainment, social activities, and transactions. It enables direct interaction between streamers and viewers, providing real-time product information and fostering social communication (Xu et al., 2020). Such interactions increase user engagement, strengthen consumer-host relationships, and create more immersive shopping experiences (Li et al., 2022). It also helps consumers overcome information ambiguity and distance barriers (Kang et al., 2021).

Perceived Hedonic Value

Perceived hedonic value refers to the enjoyment and emotional satisfaction consumers gain from shopping experiences, motivating impulse buying (Zhou et al., 2023). Live streaming enhances this value through dynamic presentations and emotional engagement, boosted by charismatic streamers, encouraging impulse purchase decisions (Huang et al., 2024).

Impulsive Buying Behavior

Impulse buying involves spontaneous purchases without prior planning, often driven by emotional and psychological factors (Tirmizi et al., 2009). Persuasive digital environments, including live streaming e-commerce, shift this behavior online by offering interactive and visual experiences that reduce product uncertainty and increase purchase intentions (Zhang et al., 2024). Stimuli such as real-time streamer interaction and product display significantly trigger consumers' impulsive buying urges.

User Stickiness

User stickiness is defined as the tendency of users to continuously use or interact with a platform or service repeatedly. This concept includes aspects of user loyalty, engagement levels, and the tendency to return to the platform over a certain period (Huang et al., 2024). In the digital context, user stickiness is often used to measure a platform's success in retaining users and increasing their interaction through captivating and relevant experiences.

RESEARCH METHOD

Research Design

The research design is conclusive research with descriptive and causal types. Descriptive quantitative research is a type of conclusive research aimed at describing a phenomenon usually related to consumer characteristics or behavior in a specific context, while causal research is conclusive research aimed at obtaining empirical evidence regarding cause-and-effect relationships between variables in a research model (Malhotra et al., 2017). The variables used in this study include live streaming stimuli, impulsive buying behavior, and user stickiness, with perceived hedonic value as a mediator. Data collection was conducted through a survey using a questionnaire as the primary instrument to obtain primary data, which was then analyzed using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) to quantitatively test the relationships among constructs. Additionally, this study applied Multi-Group Analysis (MGA) to identify whether there are significant differences in the relationships between model variables based on gender groups (male and female) and e-commerce platforms (Shopee and Tokopedia).

Research Model

The study conducted by Huang et al. (2024) examined the role of perceived hedonic value as a mediating variable, explaining how interactive experiences in live streaming can enhance consumers' emotional satisfaction and influence their stickiness and impulsive behavior. This study identified several key stimulus factors contributing to the hedonic experience, namely Social Interaction, Gratification, Gamification, and Visualization. These factors have been empirically proven to increase perceived hedonic value, which ultimately contributes to user stickiness and impulsive purchases. Furthermore, Huang et al. (2024) also tested the role of gender as a moderating variable, finding that the effect of perceived hedonic value on impulsive buying and user stickiness is stronger among female consumers compared to males. The research model to be adapted is as follows:

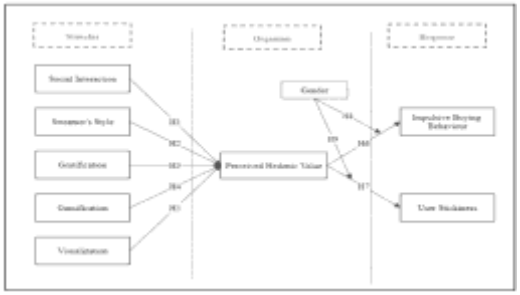


Figure 3. Reference Model 1

Source: Huang et al., 2024

Another study conducted by Zhang et al. (2024) examined how anchor characteristics, time pressure, and live streaming activity influence impulsive buying behavior, with consumer vulnerability as a mediating variable. This study used the Stimulus–Organism–Response (S-O-R) approach, which explains that external stimuli from the shopping environment can affect consumers' internal psychological states (organism), which then trigger behavioral responses, in this case, impulsive buying behavior and user stickiness. Additionally, Zhang's study tested the role of product type as a moderating variable to determine whether product characteristics strengthen or weaken the effects within the model.

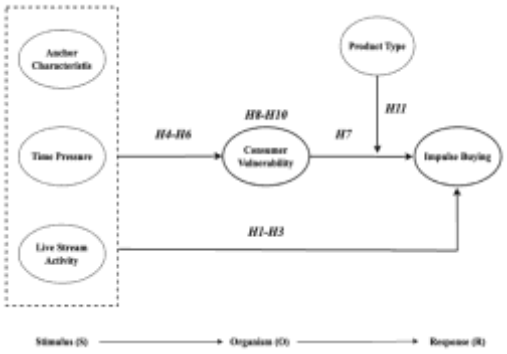


Figure 4. Reference Model 2

Source: Y. Zhang et al., 2024

Based on previous studies, this research develops a model to analyze impulsive buying and user stickiness in the context of live streaming fashion sales on Indonesian e-commerce platforms. It adapts variables from Huang et al. (2024) including Social Interaction, Gratification, Gamification, Visualization, with Perceived Hedonic Value as a mediator, and responses of Impulse Buying Behavior and User Stickiness. From Zhang et al. (2024), only stimulus and response variables are adopted: anchor characteristics, time pressure, and live streaming activity as stimuli, and impulsive buying behavior as the response. Consumer vulnerability as a mediator is excluded because this study focuses on positive, conscious, and voluntary shopping experiences where consumers actively engage emotionally without vulnerability.

Gender is used as a grouping factor to test differences in relationships between main variables, not as a latent construct. The variable Streamer's Style is merged into Anchor Characteristics to simplify measurement. Unlike Zhang et al. (2024), product type as a moderator is excluded since the study focuses on psychological and interactive user experiences, and all samples are from similar fashion products categorized as experience goods, making product type moderation irrelevant. Therefore, Zhang's model is modified to focus on the direct influence of stimuli on impulsive buying and combined with Model 1 to enrich external stimulus factors. The adapted research model is as follows:

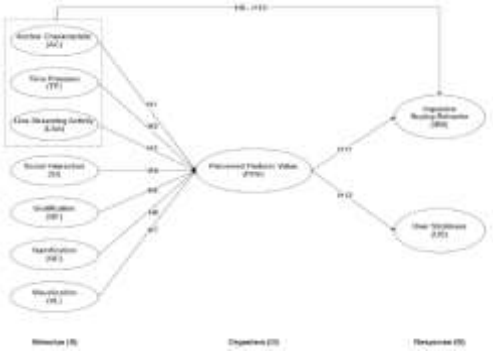


Figure 5. Research Model

Source: Author's Processed Results (2025)

Research Hypotheses Summary

Anchor Characteristic and Perceived Hedonic Value

Anchor characteristics in live streaming play a key role in creating enjoyable consumer experiences. Studies show that the credibility and attractiveness of streamers can trigger consumer vulnerability leading to

hedonic impulsive consumption. Streamers have a strong emotional influence that enhances consumers' perceived pleasure. Visual appeal and communication style of streamers create positive emotional experiences, increasing perceived hedonic value through arousal.

H1: Anchor characteristic positively affects perceived hedonic value.

Time Pressure and Perceived Hedonic Value

Time pressure in live streaming, such as limited offers and flash sales, impacts consumers' emotional aspects. Research shows time pressure increases consumer vulnerability, reduces rational thinking, and creates anticipatory emotions like regret, intensifying emotional urges. Time pressure also triggers emotional arousal that boosts hedonic value.

H2: Time pressure positively affects perceived hedonic value.

Live Streaming Activity and Perceived Hedonic Value

Interactive live streaming activity creates an immersive experience that enhances consumer pleasure. Studies show that higher interaction intensity during live streaming increases emotional arousal and hedonic consumption. A more active live streaming environment also raises the likelihood of impulsive buying due to social engagement. Frequent activity triggers anticipatory emotions in decision-making.

H3: Live streaming activity positively affects perceived hedonic value.

Social Interaction and Perceived Hedonic Value

Social interaction during live streaming fosters a more engaging environment for consumers. Direct interaction with streamers and other buyers enhances emotional impulses in purchase decisions. Positive social experiences during live streams increase consumers' perceived hedonic value and emotional attachment.

H4: Social interaction positively affects perceived hedonic value.

Gratification and Perceived Hedonic Value

Discounts, gifts, and rewards during live streaming have been proven to enhance users' emotional engagement. S.-C. Lin et al. (2022) stated that incentives increase participation and enjoyment. Huang et al. (2024) noted that gratification in the form of rewards positively relates to the increase in hedonic value. Ma (2021) also supported that hedonic gratification, such as perceived enjoyment, plays a key role in motivating live shopping consumers. Therefore, the following hypothesis is proposed:

H5: Gratification positively affects perceived hedonic value.

Data Collection Methods

This study collects data from two main sources: primary and secondary data.

Primary Data

Primary data is obtained directly by the researcher through quantitative field research. Data collection is conducted via an online survey using questionnaires distributed to respondents meeting the research criteria. The questionnaire is created with Google Forms and shared across various social media platforms to effectively reach a wider audience.

Secondary Data

Secondary data is gathered through literature review from credible sources

such as books, scientific journals, research reports, newspapers, magazines, and internet searches. Previous studies related to the topic are used as a foundation to build the conceptual framework and support data analysis.

Population and Sample

This research uses purposive sampling with a quantitative approach through structured questionnaires to test the hypotheses (Zhang et al., 2024; Huang et al., 2024). The sampling method is non-probability sampling, where the population size is unknown and sample elements are selected based on the researcher's judgment (Malhotra, 2010). The focus population is Indonesian e-commerce consumers who have watched live streaming on Shopee or Tokopedia in the last six months, ensuring relevant experience.

The study applies PLS-SEM analysis, with minimum sample size based on Hair Jr et al. (2021): at least ten times the largest number of indicators measuring a construct, or ten times the number of paths leading to an endogenous construct. Larger sample sizes yield more stable results, especially when data or measurement issues arise. This study targets 300 respondents, fitting within the recommended sample size range.

Questionnaire Design and Structure

A questionnaire is a set of pre-designed written questions where respondents record their answers, usually from clearly defined options (Sekaran & Bougie, 2017). This study uses a questionnaire to collect data, consisting of questions that support the research objectives. The questionnaire is organized into categories and uses a Likert scale method. Respondents rate their level of agreement on a scale from 1 to 7, representing their response intensity. The Likert scale interpretation reflects the degree of respondent agreement with each question.

Table 1. Measurement Scale of Questionnaire Instrument

Assessment	Score
Strongly Disagree (SD)	1
Disagree (D)	2
Somewhat Disagree (SWD)	3
Neutral (N)	4
Somewhat Agree (SWA)	5
Agree (A)	6
Strongly Agree (SA)	7

Source: (Sugiyono, 2012)

The questionnaire structure in this study is divided into several sections to ensure that the data collected aligns with the research objectives and meets the criteria of the selected respondents.

Data Processing and Analysis Methods

This study begins with a wording test to ensure questionnaire clarity and avoid ambiguity, involving 10 respondents who provide feedback for refinement. Next, a validity and reliability test is conducted with 30 respondents using SPSS 26. Validity is confirmed if the Kaiser-Meyer-Olkin (KMO) value is between 0.5 and 1.0, Bartlett's Test is significant (≤ 0.05), and factor loadings are ≥ 0.5. Reliability is measured using Cronbach's Alpha,

where values ≥ 0.6 indicate acceptable internal consistency, and values below 0.6 indicate poor reliability.

Data Analysis Method

This study employs Structural Equation Modeling (SEM) using SmartPLS software to analyze the relationships between measured and latent variables. SEM combines factor analysis and multiple regression to test complex causal models while accounting for measurement errors (Wijanto, 2015). According to Hair et al. (1998, as cited in Wijanto, 2015), SEM can estimate complex dependency relationships and measure unobservable constructs. SEM consists of two main components: the structural model, which depicts causal relationships among latent variables, and the measurement model, which links latent variables to their indicators to ensure accurate representation (Malhotra, 2010).

The study uses Confirmatory Factor Analysis (CFA) to validate the factors and ensure indicators accurately represent latent variables (Malhotra, 2010). SEM analysis follows steps such as construct specification, measurement model testing, and validity and reliability checks before developing and validating the structural model (Hair Jr et al., 2021; Malhotra, 2010). Among SEM approaches, Partial Least Squares SEM (PLS-SEM) is chosen due to its suitability for predictive analysis and modeling relationships between constructs, and it operates similarly to multiple regression, often used for exploratory and predictive research (Hair Jr et al., 2021).

Data Analysis Method Using PLS-SEM

This study utilizes Partial Least Squares Structural Equation Modeling (PLS-SEM) to build and develop theory through a predictive approach. PLS-SEM is suitable for non-normal data distributions, small sample sizes due to its high statistical power with fewer samples, and for models with formative constructs (Hair Jr et al., 2021). The method involves two main models: the measurement model (outer model), linking latent variables to indicators, and the structural model (inner model), showing relationships among latent variables.

The systematic analysis steps according to Hair Jr et al. (2021) include: structuring the model, defining measurement models, collecting data, testing validity and reliability, estimating the path model, evaluating reflective and formative measurement models, further analysis, and interpreting results. Validity is assessed through convergent validity (outer loading ≥ 0.7, AVE ≥ 0.5) and discriminant validity (Fornell-Larcker criterion and HTMT ≤ 0.90). Reliability requires Cronbach's Alpha and Composite Reliability ≥ 0.7 (Hair Jr et al., 2021). Structural model evaluation considers collinearity (VIF between 0.2 and 5), coefficient of determination (R^2 with thresholds 0.75 substantial, 0.50 moderate, 0.25 weak), effect size (f^2), predictive relevance ($Q^2 > 0$), model fit indices (SRMR < 0.08, RMStheta < 0.12), and path coefficients (t-value ≥ 1.96, p-value ≤ 0.05) (J. F. Hair et al., 2019). For group comparisons based on gender and e-commerce platform (Shopee vs. Tokopedia), Partial Least Squares Multi-Group Analysis (PLS-MGA) with 5000 bootstrap subsamples is applied. Differences are significant if p-value < 0.05 (Hair Jr et al., 2021).

RESEARCH RESULTS AND DISCUSSION

Wording Test Results

The wording test was conducted to ensure that the indicators used in this

study were clearly understood by respondents before the pre-test and main test stages. For this purpose, the researcher involved ten participants who were asked to review the designed indicators. They evaluated the readability and provided feedback on parts that were unclear or potentially ambiguous. Based on their input, the indicators were adjusted to be more communicative and easier for respondents to understand. The indicators used in this study were adapted from previous research on similar topics, and the refined indicators can be found in Table 4.1.
Here is the English translation of your text:

Pre-Test Results

The pre-test was conducted to evaluate the extent to which respondents understand the content of the research questionnaire. In this context, the pre-test serves as an initial phase before proceeding to the main test. The pre-test in this study was carried out online by distributing a Google Form questionnaire link via social media platforms such as WhatsApp, Instagram, Facebook, and LinkedIn. During the pre-test distribution process, 30 respondents who met the research criteria were collected. Eligible respondents were those who actively use Shopee or Tokopedia, have participated in live shopping on one of these platforms within the last six months, and have experience purchasing products during the live sessions. After obtaining respondents who met the criteria, the next step was to test the validity and reliability of the indicators used in the study.

Validity Test

As an initial step in data analysis, the validity test was conducted using SPSS 26 on the initial 30 collected data points. This test aimed to evaluate the validity of 11 latent variables along with 45 indicators representing each question in the questionnaire. The validity test referred to three main parameters to determine whether the factor analysis was appropriate and usable for the research. The first parameter is the Kaiser-Meyer-Olkin (KMO) measure, which is used to assess whether the collected data is suitable for factor analysis. KMO values ranging from 0.5 to 1 indicate that the tested factors meet the validity criteria (Malhotra, 2010).
The second parameter is Bartlett's Test of Sphericity, which tests the hypothesis that the variables in the study are not correlated within the population or that the population correlation matrix is an identity matrix. In this test, each variable perfectly correlates with itself ($r = 1$) but does not correlate with other variables ($r = 0$). The Bartlett's Test result is acceptable if the significance value (Sig.) ≤ 0.05. The third parameter is the component matrix or factor loading, which is used to assess the relationship between variables and the factors they represent. An indicator is considered valid if it has a factor loading value ≥ 0.5. The results of the validity test conducted using SPSS 26 can be seen in the following table:

Table 2. Validity Test

Latent Construct	Indicator	Validity Test			Conclusion
		KMO	Bartlett's Test	Factor Loading	

Latent Construct	Indicator	Validity Test			Conclusion
Anchor Characteristic	AC1	0.717	0	0.743	Valid
	AC2			0.811	
	AC3			0.685	
	AC4			0.776	
	AC5			0.707	
	AC6			0.791	
	AC7			0.811	
	AC8			0.593	
	AC9			0.823	
Time Pressure	TP1	0.563	0	0.809	Valid
	TP2			0.828	
	TP3			0.700	
	TP4			0.692	
Live Streaming Activity	LSA1	0.658	0	0.822	Valid
	LSA2			0.737	
	LSA3			0.813	
Social Interaction	SI1	0.592	0	0.827	Valid
	SI2			0.820	
	SI3			0.664	
	SI4			0.715	
Gratification	GF1	0.621	0	0.875	Valid
	GF2			0.773	
	GF3			0.794	
	GF4			0.722	
Gamification	GC1	0.532	0	0.727	Valid
	GC2			0.749	
	GC3			0.728	
	GC4			0.747	
Visualization	VL1	0.567	0	0.872	Valid
	VL2			0.648	
	VL3			0.786	
Perceived Hedonic Value	PHV1	0.673	0	0.867	Valid
	PHV2			0.747	

Latent Construct	Indicator	Validity Test			Conclusion
	PHV3			0.886	
	PHV4			0.668	
	PHV5			0.841	
Impulsive Buying Behavior	IBB1	0.554	0	0.782	Valid
	IBB2			0.720	
	IBB3			0.800	
	IBB4			0.648	
User Stickiness	US1	0.665	0	0.850	Valid
	US2			0.601	
	US3			0.880	
	US4			0.709	
	US5			0.708	

The validity test results table shows that all variables and indicators have met the established criteria, namely the KMO value, Bartlett's Test of Sphericity, and Factor Loading. This confirms that all variables and indicators in this study are considered valid and can be used for the next stage of analysis.

Reliability Test

Next, a reliability test was conducted to demonstrate the accuracy and precision of the variable measurements by examining the Cronbach's Alpha coefficient values. The results of the reliability test can be seen in the following table:

Table 3. Reliability Test

Latent Construct	Indicator	Reliability Test (Cronbach's Alpha)	Conclusion
Anchor Characteristic	AC1	0.89	Reliable
	AC2		
	AC3		
	AC4		
	AC5		
	AC6		
	AC7		
	AC8		
	AC9		
Time Pressure	TP1	0.85	Reliable
	TP2		
	TP3		
	TP4		
Live Streaming Activity	LSA1	0.87	Reliable
	LSA2		

Latent Construct	Indicator	Reliability Test (Cronbach's Alpha)	Conclusion
	LSA3		
Social Interaction	SI1	0.82	Reliable
	SI2		
	SI3		
	SI4		
Gratification	GF1	0.88	Reliable
	GF2		
	GF3		
	GF4		
Gamification	GC1	0.79	Reliable
	GC2		
	GC3		
	GC4		
Visualization	VL1	0.81	Reliable
	VL2		
	VL3		
Perceived Hedonic Value	PHV1	0.90	Reliable
	PHV2		
	PHV3		
	PHV4		
	PHV5		
Impulsive Buying Behavior	IBB1	0.84	Reliable
	IBB2		
	IBB3		
	IBB4		
User Stickiness	US1	0.86	Reliable
	US2		
	US3		
	US4		
	US5		

Source: Processed by the Author (2025)

Based on the table above, it can be concluded that all variables in this study have Cronbach's Alpha values above 0.6, indicating that all variable indicators are considered reliable and can be used for the next stage of analysis. Thus, the results of the validity and reliability tests confirm that the model used in this study has been proven to be valid and reliable, and therefore can be applied to the main test.

Respondent Profile

This study involved 300 respondents who had previously purchased fashion products via live streaming on Shopee or Tokopedia. Most respondents were aged 18–24 (50.0%), followed by those aged 25–39 (31.7%). A smaller portion were under 18 (8.7%) or over 40 (8.6%), indicating that live streaming e-commerce is mostly used by younger generations. Women

dominated the respondent pool at 64.0%, while men made up 36.0%. This aligns with the tendency of female consumers to be more engaged in fashion product exploration through live streaming. In terms of location, the majority resided in the Greater Jakarta area (43.3%), followed by other parts of Java (34.3%) and outside Java, mainly Sumatra (15.7%), with the rest from Sulawesi, Kalimantan, and Bali.

Shopee Live was more frequently used (72.0%) compared to Tokopedia Play (28.0%). Regarding shopping frequency, 41.7% shopped via live streaming 1–3 times a week, 48.3% did so 4–6 times, and 10.0% more than 6 times. Viewing time was typically 3–4 hours per week (33.7%), followed by 1–2 hours (32.7%), while 21.0% watched for less than an hour, and few watched over 6 hours. In terms of education, most respondents held a bachelor's degree (41.0%), followed by high school or below (32.7%), and diploma holders (19.3%). Only a small portion had postgraduate education. Occupation-wise, students made up the largest group (32.0%), followed by private employees (25.3%), civil servants (13.3%), entrepreneurs (14.7%), and others (4.3%). Overall, the respondent profile in this study reflects e-commerce live streaming consumers in Indonesia, who are predominantly young, female, and active users of Shopee Live, with relatively high viewing intensity and shopping frequency.

Table 4. Respondent Profile

Characteristic	Category	Number	Percentage
Age	< 18 years	26	8.7%
	18–24 years	150	50.0%
	25–39 years	95	31.7%
	40–54 years	24	8.0%
	55 years and above	5	1.7%
Gender	Male	108	36.0%
	Female	192	64.0%
Domicile	Java (excluding Greater Jakarta)	103	34.3%
	Sumatra	47	15.7%
	Sulawesi	13	4.3%
	Kalimantan	3	1.0%
	Bali	3	1.0%
	Greater Jakarta (Jabodetabek)	130	43.3%
Platform Used	Shopee	216	72.0%
	Tokopedia	84	28.0%
Shopping Frequency	1–3 times per week	125	41.7%
	4–6 times per week	145	48.3%
	More than 6 times per week	30	10.0%
Live Viewing Duration	Less than 1 hour/week	63	21.0%
	1–2 hours/week	122	40.7%

Characteristic	Category	Number	Percentage
	3–4 hours/week	101	33.7%
	5–6 hours/week	13	4.3%
	More than 6 hours/week	1	0.3%
Education Level	High School or below	98	32.7%
	Diploma (D1/D2/D3)	58	19.3%
	Bachelor's Degree (S1)	123	41.0%
	Master's Degree (S2)	12	4.0%
	Doctorate (S3)	2	0.7%
	Others	7	2.3%
Employment Status	Student	98	32.7%
	Government employee	58	19.3%
	Private employee	87	29.0%
	Entrepreneur	44	14.7%
	Others	13	4.3%

Source: Processed by the Author (2025)

Descriptive Analysis

The purpose of descriptive analysis is to provide a general overview of respondents' responses to the variables used in the study. This analysis is conducted by calculating the mean, standard deviation, minimum, and maximum values of each indicator or statement item in the questionnaire. The results of this descriptive analysis are essential to determine the tendency of respondents' answers, whether they fall into the categories of very low, low, moderate, high, or very high. The following is the descriptive analysis table.

Table 45 Descriptive Analysis

Variable	Indicator	Min.	Max.	Mean	SD	Total Mean
Anchor Characteristic	AC1	1	7	5.32	1.492	
	AC2	1	7	5.27	1.593	
	AC3	1	7	5.31	1.506	
	AC4	1	7	5.05	1.570	
	AC5	1	7	5.30	1.520	
	AC6	1	7	5.24	1.567	
	AC7	1	7	5.21	1.536	
	AC8	1	7	5.35	1.495	
	AC9	1	7	5.19	1.592	**5.25**
Time Pressure	TP1	1	7	5.06	1.549	
	TP2	1	7	5.04	1.649	
	TP3	1	7	5.07	1.616	
	TP4	1	7	4.98	1.597	**5.00**
Live Streaming Activity	LSA1	1	7	5.05	1.534	

Variable	Indicator	Min.	Max.	Mean	SD	Total Mean
	LSA2	1	7	5.12	1.584	
	LSA3	1	7	5.14	1.555	**5.10**
Social Interaction	SI1	1	7	5.04	1.507	
	SI2	1	7	5.04	1.634	
	SI3	1	7	5.10	1.607	
	SI4	1	7	5.23	1.541	**5.10**
Gratification	GF1	1	7	5.12	1.586	
	GF2	1	7	5.15	1.605	
	GF3	1	7	5.11	1.659	
	GF4	1	7	5.20	1.547	**5.15**
Gamification	GC1	1	7	5.03	1.547	
	GC2	1	7	5.17	1.578	
	GC3	1	7	5.18	1.628	
	GC4	1	7	5.21	1.497	**5.15**
Visualization	VL1	1	7	5.15	1.578	
	VL2	1	7	5.28	1.578	
	VL3	1	7	5.20	1.523	**5.21**
Perceived Hedonic Value	PHV1	1	7	5.21	1.434	
	PHV2	1	7	5.28	1.550	
	PHV3	1	7	5.22	1.478	
	PHV4	1	7	5.22	1.484	
	PHV5	1	7	5.21	1.518	**5.23**
Impulsive Buying Behavior	IBB1	1	7	5.14	1.555	
	IBB2	1	7	5.30	1.526	
	IBB3	1	7	5.13	1.649	
	IBB4	1	7	5.13	1.559	**5.18**
User Stickiness	US1	1	7	5.18	1.561	
	US2	1	7	5.23	1.586	
	US3	1	7	5.25	1.605	
	US4	1	7	5.24	1.561	
	US5	1	7	5.45	1.588	**5.27**

The descriptive analysis conducted in this study offers insights into how respondents perceive the variables influencing their behavior during live streaming e-commerce sessions.

The Anchor Characteristic variable, composed of 12 indicators, reflects the respondents' perceptions of the attractiveness, credibility, and professionalism of the livestream hosts. With a total mean of 5.25, the results suggest that most respondents highly value the role of streamers in establishing trust, creating emotional appeal, and maintaining engagement throughout the session. For the Time Pressure variable, measured by four indicators, the average score was 5.00.

This indicates that respondents felt a moderate level of urgency when exposed to time-sensitive elements like flash sales or countdown timers. Such urgency strategies appear effective in encouraging quick and impulsive purchase decisions.

The Live Streaming Activity variable, with a mean score of 5.21, shows that respondents actively participate during live sessions, both as viewers and shoppers. This level of engagement supports the idea that live streaming fosters interactive and immersive experiences that can lead to spontaneous purchases. Regarding Social Interaction, the average score of 5.15 demonstrates that live streaming provides ample opportunities for respondents to communicate with both streamers and fellow viewers. This interaction enhances emotional closeness and overall satisfaction with the digital shopping experience. The Gratification variable also recorded an average score of 5.15, indicating that respondents experience emotional pleasure and personal satisfaction from live shopping. For many, live streaming serves not only as a shopping activity but also as a source of entertainment and stress relief.

The Gamification variable scored slightly higher, with an average of 5.16. This result reflects positive responses to game-like features such as quizzes, point systems, and rewards, which contribute to increased engagement and enhance the emotional enjoyment of the experience. In terms of Visualization, the average score of 5.21 highlights the critical role that visual elements such as product presentation and image quality play in shaping a pleasant and confidence-building shopping environment. Finally, Perceived Hedonic Value emerged as the highest-rated variable with an average of 5.28. This emphasizes the significant emotional gratification users derive from the overall live streaming experience. The findings affirm that perceived hedonic value acts as a key psychological link between external stimuli like visual presentation and social interaction and consumer purchasing behavior.

Descriptive Analysis of Impulsive Buying Behavior (IBB)

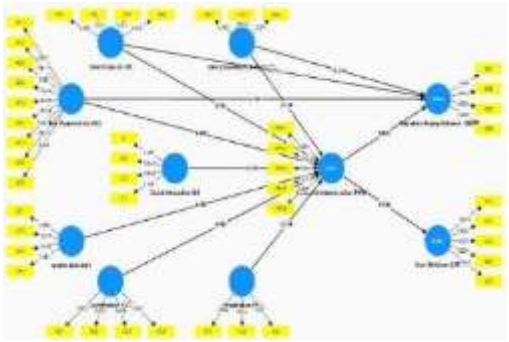
This variable measures the intensity of respondents' spontaneous purchase urges during live streaming. With an average score of 5.18, it indicates a relatively high level of impulsive tendencies among respondents. This suggests that the emotional stimuli in live streaming effectively trigger unplanned purchase decisions without deep rational consideration.

Descriptive Analysis of User Stickiness (US)

The average score of 5.27 reflects strong user loyalty and attachment to the live streaming platform. This indicates that positive experiences during live sessions encourage repeated use, fostering ongoing user loyalty.

Measurement Model Analysis (Outer Model)

The outer model analysis evaluates the relationship between indicators and their latent constructs. Its purpose is to ensure each indicator reliably and validly represents its corresponding variable. This analysis includes tests for convergent validity, discriminant validity, and construct reliability, confirming that the measurement instrument meets quality standards before proceeding to the structural model (inner model) testing. The figure below presents the results of the measurement model analysis.



Source: Author's Processed Data (2025)

Validity Test

Convergent Validity

Convergent validity testing is conducted to determine the extent to which the indicators within a construct are positively and significantly correlated. Convergent validity shows that the indicators used to measure a variable truly reflect the intended construct. In this study, convergent validity was tested using outer loading values and Average Variance Extracted (AVE) values processed through the SmartPLS software. An indicator is considered to meet convergent validity if it has an outer loading value ≥ 0.70 and an AVE value ≥ 0.50. A high outer loading value indicates that the indicator has a strong contribution to the measured construct, while the AVE value represents the amount of indicator variance explained by the latent construct.

The following table presents the results of the convergent validity test for each variable in this study.

Table 6. Outer Loading

Variable	Indicator	Loading Factor	AVE	Conclusion
Anchor Characteristic	AC1	0.861	0.679	Valid
	AC2	0.811		
	AC3	0.821		
	AC4	0.814		
	AC5	0.820		
	AC6	0.815		
	AC7	0.827		
	AC8	0.823		
	AC9	0.824		
Time Pressure	TP1	0.885	0.727	Valid
	TP2	0.827		
	TP3	0.868		
	TP4	0.828		
Live Streaming Activity	LSA1	0.896	0.753	Valid
	LSA2	0.833		
	LSA3	0.873		
Social Interaction	SI1	0.868	0.716	Valid
	SI2	0.840		
	SI3	0.842		
	SI4	0.834		
Gratification	GF1	0.878	0.729	Valid

Variable	Indicator	Loading Factor	AVE	Conclusion
	GF2	0.817		
	GF3	0.862		
	GF4	0.857		
Gamification	GC1	0.873	0.724	Valid
	GC2	0.830		
	GC3	0.849		
	GC4	0.851		
Visualization	VL1	0.903	0.750	Valid
	VL2	0.822		
	VL3	0.871		
Perceived Hedonic Value	PHV1	0.891	0.744	Valid
	PHV2	0.832		
	PHV3	0.866		
	PHV4	0.850		
	PHV5	0.873		
Impulsive Buying Behavior	IBB1	0.878	0.730	Valid
	IBB2	0.843		
	IBB3	0.858		
	IBB4	0.837		
User Stickiness	US1	0.876	0.719	Valid
	US2	0.806		
	US3	0.873		
	US4	0.830		
	US5	0.852		

Source: Author's Processed Data (2025)

Based on the analysis results in Table 4 above, all indicators for each variable have outer loading values above 0.70, and the Average Variance Extracted (AVE) values for each construct are above 0.50. This indicates that each indicator effectively represents the variable it measures. Therefore, it can be concluded that the research instrument meets the criteria for convergent validity and is suitable for further testing.

Reliability Test

After the research instrument is declared valid through convergent and discriminant validity tests, the next step is to test the reliability of the constructs. The reliability test aims to determine the extent to which the indicators of each variable produce consistent and stable results. In this study, reliability testing was conducted using Composite Reliability and Cronbach's Alpha values. A construct is considered reliable if both Composite Reliability and Cronbach's Alpha values are greater than 0.70. Below is the table showing the results of the Reliability Test.

Table 7. Reliability Test

Variable	Cronbach's Alpha	Composite Reliability
Anchor Characteristic	0.941	0.950
Gamification	0.873	0.913
Gratification	0.876	0.915
Impulsive Buying Behavior	0.877	0.915
Live Streaming Activity	0.835	0.901
Perceived Hedonic Value	0.914	0.936
Social Interaction	0.868	0.910
Time Pressure	0.874	0.914
User Stickiness	0.902	0.927
Visualization	0.833	0.900

Source: Author's Processed Data (2025)

Based on Table 7 above, it is known that the Composite Reliability (CR) and Cronbach's Alpha values exceed the recommended threshold of 0.70. These values indicate that each construct has good internal consistency and is reliable.

Hypothesis Testing

Hypothesis Test Results

The hypothesis testing in this study was conducted using path analysis, where the significance of relationships between constructs was estimated through the bootstrapping algorithm in SmartPLS version 4. Path coefficients represent the strength and direction of the hypothesized relationships between latent constructs in the structural model. To determine whether these relationships are statistically significant, two main indicators were used: the T-value and the P-value. Testing was performed at a 5% significance level, meaning a relationship is considered significant if the P-value < 0.05 and the T-value > 1.96. Using bootstrapping on a sample size of 300 respondents, the path coefficients, t-values, and p-values for each hypothesis in the model were obtained. These values form the basis for deciding whether each hypothesis is accepted or rejected. The following table presents the hypothesis test results, including path coefficients, t-values, p-values, and the status of each hypothesis for the relationships between variables in the research model.

Table 8. Path Coefficient Test Results

Path	Path Coefficients	T Value	P Value	Hypothesis Status
AC → IBB	0.214	3.035	0.002	H1 accepted
AC → PHV	0.179	3.921	0.000	H2 accepted
GC → PHV	0.177	3.629	0.000	H3 accepted
GF → PHV	0.138	2.913	0.004	H4 accepted
LSA → IBB	0.191	3.053	0.002	H5 accepted
LSA → PHV	0.131	3.056	0.002	H6 accepted
PHV → IBB	0.353	3.852	0.000	H7 accepted
PHV → US	0.740	13.429	0.000	H8 accepted
SI → PHV	0.120	2.016	0.045	H9 accepted

Path	Path Coefficients	T Value	P Value	Hypothesis Status
TP → IBB	0.163	2.324	0.020	H10 accepted
TP → PHV	0.180	3.193	0.001	H11 accepted
VL → PHV	0.159	3.664	0.000	H12 accepted

Source: Author's Processed Data (2025)

Analysis of Hypothesis Testing Results
The Effect of Anchor Characteristic on Impulsive Buying Behavior
H1: Anchor Characteristic (AC) has a positive and significant effect on Impulsive Buying Behavior (IBB).

The data analysis results show that Anchor Characteristic has a positive and significant influence on Impulsive Buying Behavior. This is evidenced by a path coefficient of 0.214, a t-statistic value of 3.035 (greater than 1.96), and a p-value of 0.002 (less than 0.05). These findings reinforce that streamer characteristics such as visual attractiveness, credibility, and communication style during live streaming sessions can directly encourage impulsive purchases by consumers. In the context of live streaming e-commerce, streamers are not only product informers but also figures who shape the atmosphere and emotions of the audience. When streamers appear confident, attractive, and interactive, they create a strong emotional bond with viewers. This aligns with the S–O–R theory, where anchor characteristics act as stimuli that directly affect consumers' purchase responses. Therefore, hypothesis H1 in this study is accepted.

The Effect of Gamification on Perceived Hedonic Value
H3: Gamification (GC) has a positive and significant effect on Perceived Hedonic Value (PHV).

Gamification is proven to have a positive and significant influence on Perceived Hedonic Value, as indicated by a coefficient value of 0.177, a t-statistic of 3.629, and a p-value of 0.000. This suggests that the presence of game elements such as quizzes, points, reward systems, and challenges during live streaming sessions enhances users' emotional engagement. Users who actively participate in gamification elements not only receive product information but also enjoy an entertaining experience. The interactivity offered by gamification enriches the hedonic dimension of online shopping, as users do not just buy but also "play" during the process. This study supports hypothesis H3 and aligns with previous theories stating that game elements in digital contexts can increase users' emotional satisfaction (Huang et al., 2024).

The Effect of Gratification on Perceived Hedonic Value
H4: Gratification (GF) has a positive and significant effect on Perceived Hedonic Value (PHV).

Data analysis results show that Gratification positively and significantly affects Perceived Hedonic Value, with a coefficient value of 0.138, a t-statistic of 2.913, and a p-value of 0.004. This finding indicates that forms of rewards such as discounts, vouchers, free gifts, or special promotions during live streaming provide emotional satisfaction to consumers. The provision of rewards creates a positive atmosphere and makes users feel appreciated and cared for by the streamer or brand, thus enhancing their enjoyment during the shopping session. This type of gratification can trigger positive emotions that strengthen the perception that live streaming is not

only a transaction but also an enjoyable experience. Therefore, hypothesis H4 in this study is accepted.

The Effect of Live Streaming Activity on Impulsive Buying Behavior

H5: Live Streaming Activity (LSA) has a positive and significant effect on Impulsive Buying Behavior (IBB).

The test results show that Live Streaming Activity positively and significantly affects Impulsive Buying Behavior, with a coefficient value of 0.191, a t-statistic of 3.568, and a p-value of 0.000. This indicates that dynamic live streaming activities—characterized by many viewers, conversations, and viewer participation during the broadcast—can trigger impulsive buying decisions. When the live atmosphere feels lively, users tend to be motivated to "join in" and purchase products to avoid missing out on the moment. This phenomenon strengthens psychological effects such as FOMO (Fear of Missing Out), which can lead consumers to spontaneous purchasing actions. Therefore, hypothesis H5 in this study is accepted.

CONCLUSION

The development of live streaming features in digital marketing has become a widely adopted strategy by e-commerce platforms, especially Shopee and Tokopedia. This study aims to better understand how impulsive buying behavior forms when consumers watch fashion product sales during live sessions. Fashion products were chosen due to their visual and emotional nature, which tends to trigger spontaneous, unplanned purchases. The research is based on the Stimulus–Organism–Response (S-O-R) theoretical framework, adapting models from Huang et al. (2024) and Zhang et al. (2024) with some modifications. Stimuli examined include anchor characteristics, visualization, gamification, time pressure, live activity, social interaction, and gratification. These stimuli influence perceived hedonic value (organism), which in turn relates to impulsive buying behavior and user stickiness (response). Using a quantitative approach with Partial Least Squares Structural Equation Modeling (PLS-SEM), the study surveyed 300 respondents experienced with live streaming and/or purchasing on Shopee and Tokopedia. The analysis covered the structural model, variable relationships, and comparisons by gender and platform.

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