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The Effect of Live Streaming Selling on Impulse Buying in Generation Z

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ABSTRACT

The growth of social commerce has positioned live streaming selling as one of the most dominant sales channels in Indonesia, particularly among Generation Z. Although this relationship has been examined extensively in China, evidence from Indonesian Generation Z consumers remains limited, and most studies invoke the Stimulus-Organism-Response (S-O-R) framework without measuring its organism component. This study analyses the effect of live streaming selling on impulse buying among Generation Z consumers and restricts its theoretical claim to the stimulus-response path of that framework. A quantitative explanatory survey was employed. Data were collected between March and May 2025. The sample comprised 120 Generation Z respondents aged 18 to 29 who had purchased through live streaming on TikTok Shop, Shopee Live, or similar platforms within the preceding three months, selected purposively. The instrument comprised 16 statements on a five-point Likert scale; all items were valid ($r = 0.612$ to 0.803) and both scales reliable, with Cronbach's alpha of 0.874 and 0.861. Data were analysed with simple linear regression. Live streaming selling has a positive and significant effect on impulse buying ($B = 0.586$; $t = 8.742$; $p < 0.001$), explaining 39.3% of its variance. Because no organism variable was measured, these findings substantiate the stimulus-response link rather than the complete S-O-R sequence, and the four dimensions of live streaming selling were modelled as one composite rather than tested individually. Practically, sellers should design interactive live sessions, while young consumers need financial literacy support to control impulsive purchases.

INTRODUCTION

Digital transformation has changed the way consumers seek information, interact with sellers, and make purchase decisions. One of the most prominent forms of innovation in the past decade is live streaming commerce, which is the integration between live video broadcasts and online buying and selling transactions. In contrast to conventional e-commerce that only displays static photos and descriptions, live streaming allows sellers to demonstrate products in real-time and answer potential buyers' questions directly (Sun et al., 2019; Wongkitrungrueng & Assarut, 2020). This ability has been proven to reduce consumer uncertainty about products and sellers, thereby driving purchase intent (Lu & Chen, 2021).

Globally, live streaming has become a commercially significant retail format rather than a marginal experiment. Statista Market Insights estimates that live streaming e-commerce generated revenue of almost USD 370 billion in Asia in 2024, of which approximately USD 350 billion was attributable to China alone (Statista, 2025). The supporting technology market is expanding at a comparable pace: the global market for live commerce platforms was valued at USD 2.4 billion in 2024 and is projected to reach USD 7.2 billion by 2030 (Research and Markets, 2025). These two figures measure different things, transaction revenue and platform software respectively, yet both point to the same conclusion, namely that live selling has become embedded infrastructure for digital retail. The concern that accompanies this growth is behavioural. Because live selling compresses exposure, persuasion, and checkout into a single uninterrupted session, it removes much of the deliberation that conventional e-commerce preserves, and the resulting purchases are disproportionately unplanned (Lee & Chen, 2021; Huo et al., 2023).

In Indonesia, this phenomenon is developing very rapidly and is dominated by young consumers. Jakpat's survey of 2,474 respondents, conducted in the second half of 2024 and published in 2025, found that nine out of ten Generation Z respondents had watched live shopping, and 62% of those viewers made transactions through this feature (Jakpat, 2025). The same survey recorded that the average online shopping expenditure of Generation Z is around IDR 414 thousand per month. Because a commercial survey is not peer reviewed, this pattern is triangulated here with recent academic evidence from Indonesian samples: Andika et al. (2025) report that social presence in e-commerce live streaming raises impulse buying among 263 Indonesian Generation Z shoppers, and Utomo et al. (2025) reach a convergent conclusion with 506 Indonesian live shopping users. This data shows that live streaming is no longer just entertainment, but has become the main sales channel for the segment born in the range of 1997 to 2012.

Generation Z is known as a digital native who is highly responsive to visual content, influencer recommendations, and interactive shopping experiences. Djafarova and Bowes (2021) show that social media is a strong trigger for impulse purchases of Generation Z, especially in the fashion category, due to the constant exposure to content and instant purchase features. This tendency makes Generation Z a vulnerable group to impulse buying, which is an unplanned purchase that occurs suddenly due to strong emotional urges (Rook, 1987; Beatty & Ferrell, 1998). The financial consequences of that vulnerability are no longer hypothetical. Deferred payment facilities embedded directly in live shopping interfaces allow an impulse to be acted upon before the cost is felt, and Prasetyani et al. (2024) show in a study of 500 Indonesian Generation Z participants that trust in paylater services is a decisive driver of their

adoption. When a purchase impulse generated inside a live session can be settled by instalments arranged in the same interface, the gap between emotional arousal and financial commitment narrows to almost nothing.

In the context of live streaming, various broadcast elements act as stimuli that can trigger spontaneous purchases. Direct interaction with streamers, the presence of other viewers, limited-time promotions, and live product visualizations create an atmosphere that evokes emotions and reduces the rational considerations of consumers (Lee & Chen, 2021; Li et al., 2022). Ming et al. (2021) found that the social presence of platforms, viewers, and streamers increases consumer trust and flow state, which in turn triggers impulsive buying behavior. Similar findings were reported by Huo et al. (2023) which show that social presence and sales promotion drive the flow experience which leads to impulse buying.

The most widely used theoretical framework to explain this phenomenon is the Stimulus-Organism-Response (S-O-R) model developed by Mehrabian and Russell (1974). This model states that environmental stimuli affect the internal state of individuals, the organism, which in turn results in behavioural responses. A literature review by Chan et al. (2017) shows that S-O-R is the dominant framework in online impulse purchase research. In this study, live streaming selling is positioned as the stimulus and impulse buying as the response. The organism component is not measured, and the study therefore tests the stimulus-response path of the framework rather than the full three-part sequence. This restriction is stated explicitly at the outset because the literature frequently claims to confirm S-O-R on the basis of models in which no affective state is in fact observed.

Although research on live streaming commerce is constantly evolving, most empirical studies have been conducted in China in the context of the Taobao Live and Douyin platforms (Li et al., 2022; Xia et al., 2024; Xiao et al., 2026). Indonesian evidence has grown quickly but remains fragmented. Andika et al. (2025) isolate social presence, Auliarahman (2025) traces the path from impulse to continuous purchase intention among 175 TikTok live shopping users, Iswan and Roostika (2025) examine Shopee Live, Utomo et al. (2025) model multiple triggers simultaneously, and Cahyani and Marcelino (2023) combine live streaming with hedonic shopping motivation. Each study isolates a different antecedent, with the consequence that no common, jointly validated measure of live streaming selling has been established for this population and effect sizes cannot be compared across studies. The contribution of the present study is correspondingly modest and deliberately specific. It does not claim to introduce a new mechanism. It estimates the aggregate magnitude of the stimulus-response link in the Indonesian Generation Z segment using a single sixteen-item instrument whose validity and reliability are reported in full, so that the resulting coefficient can serve as a reference point against which later and more elaborate models can be compared. The four conceptual facets of live streaming selling, namely interactivity, streamer appeal and credibility, time-limited promotion, and real-time product visualisation, are treated here as a composite reflective measure of a single stimulus rather than as separately estimated predictors. Disaggregating them requires a measurement model with more indicators per facet than the present instrument provides, and that task is set out as the principal agenda for further research rather than claimed as an achievement of this study.

The urgency of this study follows directly from the asymmetry between the speed at which live selling has been adopted in Indonesia and the slower pace at which consumer

protection and financial literacy have developed. Live commerce infrastructure, algorithmic content delivery, and embedded credit have scaled faster than the evidence base needed to regulate them, and in the absence of locally calibrated estimates both policy and practice rely on findings imported from markets whose platform ecologies and credit conditions differ substantially from Indonesia's. Based on this description, this study aims to analyse the effect of live streaming selling on impulse buying in Generation Z consumers in Indonesia. Theoretically, it is expected to enrich the application of the stimulus-response path of the S-O-R model in the context of social commerce in developing countries. Practically, the results can be a reference for business actors in designing effective live selling strategies, as well as educational materials for young consumers to be wiser in shopping. For regulators and educators, a calibrated local estimate of how much purchasing variance is attributable to the live selling format provides a basis for deciding whether intervention should target platform design, consumer capability, or both.

Theoretical Studies and Hypothesis Development

Live Streaming Selling. Live streaming selling is a marketing and sales activity carried out through live video broadcasts, where sellers demonstrate products, provide information, and interact with potential buyers in real-time (Wongkitrungrueng & Assarut, 2020). Sun et al. (2019) through the perspective of IT affordance explain that live streaming provides visualization, purchase guidance, and interaction capabilities that conventional e-commerce does not have. Hu and Chaudhry (2020) added that the relational bond between streamers and viewers increases consumer engagement. In this study, live streaming selling was measured through four dimensions: (1) interactivity, (2) the attractiveness and credibility of the streamer, (3) time-limited promotions, and (4) real-time visualization of products (Lee & Chen, 2021; Xiao et al., 2026).

Impulse Buying. Impulse buying is defined as a purchase that is not planned, occurs suddenly, and is accompanied by a strong urge to buy immediately (Rook, 1987). Stern (1962) distinguishes between pure impulse buying, purchase by reminder, purchase by suggestion, and premeditated-impulsive purchase. Beatty and Ferrell (1998) assert that the urge to buy impulsively is a direct predictor of impulsive buying behavior. Meta-analysis by Iyer et al. (2020) shows that factors of the marketing environment and the emotional state of consumers are the main triggers of this behavior. Indicators of impulse buying in this study include spontaneity, strong impulse to buy, consequence abandonment, and emotional involvement (Rook, 1987; Verhagen & van Dolen, 2011).

The Relationship between Live Streaming Selling and Impulse Buying. Within the stimulus-response logic of the S-O-R model, elements of a live broadcast function as stimuli that are consistently associated with impulse buying responses (Li et al., 2022). Lou et al. (2022) found that popularity cues in broadcasting, such as viewership and purchase counts, increase the perception of a streamer's reputation and trigger impulse purchases. Xia et al. (2024) showed that social cues and media cues influence impulsive buying impulses. Xiao et al. (2026) also proved that the characteristics of broadcast content, including opinion leadership, professionalism, entertainment, interactivity, and promotional intensity, were positively correlated with impulse purchase intent. In the Indonesian setting, Andika et al. (2025) and Utomo et al. (2025) report effects of comparable direction, which supports the

expectation of a positive association in this population. Because the four facets of live streaming selling are measured here as one composite stimulus, a single hypothesis is specified at the construct level. Facet-level sub-hypotheses are not advanced, since the present instrument allocates two items to each facet, which is insufficient for a defensible facet-level measurement model.

H1: Live streaming selling has a positive and significant effect on impulse buying in Generation Z.

METHOD

This study employed a quantitative approach with an explanatory research design to examine the effect of live streaming selling (X) on impulse buying (Y). Because the design is cross-sectional, the analysis supports inference about the direction and magnitude of the association but not about causal ordering, and the objective is worded accordingly. The study population consisted of Generation Z consumers in Indonesia who had made purchases through live streaming features on social commerce platforms and marketplaces. Because the population size was unknown, the sample size was first determined using the guideline of Hair, Black, et al. (2019), who recommend between 5 and 10 respondents per indicator; with 16 statements this yields a range of 80 to 160 respondents. This rule of thumb was then verified against a formal a priori power analysis conducted in G*Power following the procedure described by Kang (2021). For a linear regression with one predictor, a medium effect size of $f^2 = 0.15$, $\alpha = 0.05$, and statistical power of 0.95, the required sample is 89 respondents. The realised sample of 120 therefore satisfies both criteria.

The sampling technique employed was purposive sampling, with the following criteria: (1) respondents were aged 18 to 29 years; (2) they had watched live streaming sessions and purchased products through this feature at least once in the preceding three months; and (3) they were willing to complete the questionnaire in full. The lower bound of 18 years is narrower than the conventional 1997 to 2012 birth range used to define Generation Z. Respondents who were still minors at the time of data collection were excluded deliberately, because collecting data on purchasing and credit behaviour from minors would have required verifiable parental consent that online distribution could not provide. The realised sampling frame therefore corresponds to the adult portion of Generation Z. Each criterion was verified through screening questions placed before the main instrument: respondents entered their year of birth, confirmed the platform used, and selected the month of their most recent live streaming purchase. Respondents who selected a month outside the three-month window, or who reported watching without purchasing, were routed directly to the end of the form.

Data were collected between 3 March and 28 May 2025. A total of 147 responses were received. Of these, 18 were excluded because the screening questions showed that the inclusion criteria were not met, 6 because of straight-line responding across all 16 items, and 3 because of incomplete submission, leaving 120 valid cases for analysis.

Participation was voluntary and anonymous. The opening page of the questionnaire stated the purpose of the study, the intended use of the data, the absence of any incentive, and the right to withdraw at any point without consequence; the instrument proceeded only after respondents had given explicit consent. No personally identifying information was collected.

Primary data were collected through an online questionnaire created using Google Forms and distributed via social media. Each statement was measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The operational definitions and indicators of each variable are presented in Table 1, and the complete set of 16 statements is reported in Table 2.

Table 1. Variable Operational Definitions

Variable	Indicator	Item	Source
***Live Streaming Selling* (X)**	Interactivity; the appeal and credibility of *the streamer*; limited-time promotions; *real-time product visualization*	8	Lee & Chen (2021); Sun et al. (2019); Xiao et al. (2026)
***Impulse Buying* (Y)**	spontaneity; strong buying impulse; consequence abandonment; emotional involvement	8	Rook (1987); Verhagen & van Dolen (2011)

Source: Processed from various references

Table 2. Questionnaire Items

Variable	Dimension / Indicator	Code	Statement
Live Streaming Selling (X)	Interactivity	X1	The streamer responds to viewers' questions during the live session.
		X2	I can interact directly with the streamer and other viewers while watching.
	Streamer appeal and credibility	X3	The streamer presents the product in a convincing and knowledgeable manner.
		X4	I consider the streamer to be a trustworthy source of product information.
	Time-limited promotion	X5	The live session offers discounts or vouchers available only during the broadcast.
		X6	The limited availability of the promotion makes me feel that I must decide quickly.
	Real-time product visualisation	X7	The product is demonstrated live so that I can see its actual condition.
		X8	The live demonstration gives me a clearer picture of the product than photographs do.
Impulse Buying (Y)	Spontaneity	Y1	I buy products during live streaming sessions without having planned to do so.
		Y2	I often purchase items I had not intended to buy before the session started.
	Strong buying impulse	Y3	I feel a strong urge to buy immediately while watching a live session.
		Y4	I find it difficult to resist buying when the streamer promotes a product.
	Consequence abandonment	Y5	I buy first and consider afterwards whether I actually needed the item.

Variable	Dimension / Indicator	Code	Statement
		Y6	I pay little attention to my budget when shopping through live streaming.
	Emotional involvement	Y7	Buying during a live session gives me a feeling of excitement.
		Y8	I feel emotionally caught up in the atmosphere of the live session.

Source: Research instrument. All items were measured on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Item wording must be reconciled with the questionnaire as administered before submission.

The research instrument was tested for validity using the Pearson product-moment correlation between each item and the total score of its own scale, and for reliability using Cronbach's alpha coefficient, with a minimum acceptable value of 0.70 (Taber, 2018). Because both constructs are conceptually multidimensional, item-level validity was supplemented by an exploratory factor analysis of all 16 items, conducted as principal axis factoring with varimax rotation and evaluated against the criteria summarised by Watkins (2018): a Kaiser-Meyer-Olkin measure of at least 0.70, a significant Bartlett test of sphericity, primary loadings above 0.50, and cross-loadings below 0.40. Because all data were obtained from a single source at a single point in time, common method bias was examined using Harman's single-factor test, against the criterion that the first unrotated factor should account for less than 50% of total variance (Kock et al., 2021). Before conducting the regression analysis, classical assumption tests were performed, including a normality test (Kolmogorov-Smirnov), a heteroscedasticity test (Glejser), and a linearity test based on the ANOVA deviation from linearity statistic. Hypotheses were tested using simple linear regression analysis, a t-test at a 5% significance level, and the coefficient of determination (R^2) to determine the extent to which variable X contributed to variable Y. All data were processed using IBM SPSS software.

RESULTS AND DISCUSSION

Respondent Characteristics

The respondents in this study amounted to 120 people from Generation Z. Characteristics of respondents based on gender, age, and the most frequently used platform are presented in Table 3, and descriptive statistics for both variables and for the four facets of live streaming selling are reported in Table 4.

Table 3. Characteristics of Respondents

Features	Category	Quantity	Percentage
Gender	Women	77	64.2%
	Male	43	35.8%
Age	18–21 years old	70	58.3%
	22–25 years old	36	30.0%
	26–29 years old	14	11.7%
Main platforms	TikTok Live	73	60.8%
	Shopee Live	39	32.5%

Others	8	6.7%

Source: SPSS output of primary data (2025); n = 120.

Table 4. Descriptive Statistics of Research Variables

Variable / Facet	n	Min	Max	Mean	Std. Deviation	Category
Live Streaming Selling (X)	…	…	…	…	…	…
Interactivity	…	…	…	…	…	…
Streamer appeal and credibility	…	…	…	…	…	…
Time-limited promotion	…	…	…	…	…	…
Real-time product visualisation	…	…	…	…	…	…
Impulse Buying (Y)	…	…	…	…	…	…

Source: SPSS output of primary data (2025). The category column reports the interpretation of the mean against the five-point scale interval.

The majority of respondents are women aged 18 to 21 years who use TikTok Live the most. This composition is in line with Jakpat's (2025) findings that Generation Z is the most active segment in live shopping, and shows that short-video based social commerce is the dominant channel for young consumers. The skew towards female respondents and towards the youngest age band is a characteristic of the realised sample rather than of the population, and it is treated as a limitation of generalisability in the conclusion.

Validity and Reliability Tests

The validity test was carried out by comparing the calculated r of each item with the r value in the table. With n = 120 and a significance level of 5%, the r table value is 0.179. The test results showed that all 16 statement items had calculated r values between 0.612 and 0.803, so that all items were declared valid. The item-by-item results are reported in Table 5 rather than as a range only, since a range alone does not allow a reader to identify which items perform weakest. Table 6 reports the reliability results, and Table 7 reports the exploratory factor analysis conducted to establish construct validity and the outcome of Harman's single-factor test for common method bias.

Table 5. Item Validity Test Results

Item	r calculated	r table	Decision	Item	r calculated	r table	Decision
X1	…	0.179	…	Y1	…	0.179	…
X2	…	0.179	…	Y2	…	0.179	…
X3	…	0.179	…	Y3	…	0.179	…
X4	…	0.179	…	Y4	…	0.179	…
X5	…	0.179	…	Y5	…	0.179	…
X6	…	0.179	…	Y6	…	0.179	…
X7	…	0.179	…	Y7	…	0.179	…
X8	…	0.179	…	Y8	…	0.179	…

Source: SPSS output of primary data (2025). An item is valid if the calculated r exceeds the r table value of 0.179 (n = 120, α = 0.05, two-tailed). All calculated values fell between 0.612 and 0.803.

Table 6. Reliability Test Results

Variable	Number of Items	Cronbach's Alpha	Remarks
Live Streaming Selling (X)	8	0,874	Reliable
Impulse Buying (Y)	8	0,861	Reliable

Source: SPSS output of primary data (2025).

Both variables have a Cronbach's alpha value above 0.70, so the instrument is declared reliable and internally consistent for measuring the research constructs (Taber, 2018). Interpretation of the factor analysis should follow the criteria stated in the method section: construct validity is supported only if the Kaiser-Meyer-Olkin measure is at least 0.70, the Bartlett test is significant, primary loadings exceed 0.50, and cross-loadings remain below 0.40. Common method bias is considered not to threaten the findings only if the first unrotated factor accounts for less than 50% of total variance (Kock et al., 2021).

Table 7. Exploratory Factor Analysis and Common Method Bias

Item / Test	Factor 1	Factor 2	Note
X1	…	…	Primary loading > 0.50; cross-loading < 0.40
X2	…	…	Primary loading > 0.50; cross-loading < 0.40
X3	…	…	Primary loading > 0.50; cross-loading < 0.40
X4	…	…	Primary loading > 0.50; cross-loading < 0.40
X5	…	…	Primary loading > 0.50; cross-loading < 0.40
X6	…	…	Primary loading > 0.50; cross-loading < 0.40
X7	…	…	Primary loading > 0.50; cross-loading < 0.40
X8	…	…	Primary loading > 0.50; cross-loading < 0.40
Y1	…	…	Primary loading > 0.50; cross-loading < 0.40
Y2	…	…	Primary loading > 0.50; cross-loading < 0.40
Y3	…	…	Primary loading > 0.50; cross-loading < 0.40
Y4	…	…	Primary loading > 0.50; cross-loading < 0.40

Item / Test	Factor 1	Factor 2	Note
Y5	…	…	Primary loading > 0.50; cross-loading < 0.40
Y6	…	…	Primary loading > 0.50; cross-loading < 0.40
Y7	…	…	Primary loading > 0.50; cross-loading < 0.40
Y8	…	…	Primary loading > 0.50; cross-loading < 0.40
Kaiser-Meyer-Olkin measure	…		Adequate if ≥ 0.70
Bartlett test of sphericity (χ^2, df, Sig.)	…		Significant if Sig. < 0.05
Variance explained, first unrotated factor	…		No common method bias if < 50%
Total variance explained, retained factors	…		Reported for completeness

Source: SPSS output of primary data (2025). Principal axis factoring with varimax rotation; criteria follow Watkins (2018) and Kock et al. (2021).

Classic Assumption Test

The results of the Kolmogorov-Smirnov normality test showed an Asymp. Sig. value of 0.200 (> 0.05), so the residuals are normally distributed. The heteroscedasticity test using the Glejser method produced a significance value of 0.312 (> 0.05), which means that there are no symptoms of heteroscedasticity. The value of 0.200 is the upper bound that SPSS displays for the Lilliefors-corrected statistic, and it is reported here as displayed. The full set of assumption test results, including the linearity test, is presented in Table 8. The regression model is suitable for hypothesis testing provided that the deviation from linearity is not significant.

Table 8. Classical Assumption Test Results

Assumption	Test statistic	Value	Criterion	Decision
Normality	Kolmogorov-Smirnov Asymp. Sig.	0.200	> 0.05	Residuals normally distributed
Heteroscedasticity	Glejser Sig.	0.312	> 0.05	No heteroscedasticity
Linearity	ANOVA deviation from linearity Sig.	…	> 0.05	…

Source: SPSS output of primary data (2025). The Kolmogorov-Smirnov value of 0.200 is the upper bound displayed by SPSS for the Lilliefors-corrected statistic.

Simple Linear Regression Analysis and Hypothesis Test

Table 9. Results of Simple Linear Regression Analysis

Model	B	Std. Error	Beta	t	Sig.
Constant	9.412	1.986	n/a	4.739	0.000
Live Streaming Selling (X)	0.586	0.067	0.627	8.742	0.000

$R = 0.627$; $R^2 = 0.393$; Adjusted $R^2 = 0.388$; $f^2 = 0.65$; $F(1, 118) = 76.42$; $n = 120$. Dependent variable: Impulse Buying (Y). Source: SPSS output of primary data (2025).

Based on Table 9, the regression equation obtained is $Y = 9.412 + 0.586X$. The constant is retained for completeness but is not interpreted substantively, because the minimum attainable score on X is 8, so the condition $X = 0$ lies outside the observed data range and has no empirical meaning. The regression coefficient of 0.586 is positive, which means that every one unit increase in the live streaming selling score is associated with an increase of 0.586 units in impulse buying. The standardised coefficient of 0.627 expresses the same relationship in standard deviation units and is numerically equal to the bivariate correlation, as is necessarily the case in a model with a single predictor.

The results of the t-test showed that the calculated t-value of 8.742 was greater than the t-table value of 1.980 at df = 118, with a significance of $0.000 < 0.05$. Thus, H1 is accepted: live streaming selling has a positive and significant effect on impulse buying in Generation Z. The coefficient of determination (R^2) of 0.393 shows that 39.3% of the variation in impulse buying can be explained by live streaming selling, while the remaining 60.7% is attributable to factors outside the model. The corresponding effect size is $f^2 = 0.65$, which is large by conventional benchmarks, and the unexplained share is discussed with reference to the literature in the following section rather than attributed speculatively here. It should be noted that discounting is not in fact a factor outside the model, since time-limited promotion is one of the four facets included in the measurement of X; this overlap is taken into account in the discussion.

Discussion

The findings of this study are consistent with the stimulus-response path of the S-O-R model (Mehrabian and Russell, 1974) in the context of social commerce in Indonesia, but they do not test the model as a whole. The elements of live streaming selling operate as an environmental stimulus that is associated with a behavioural response in the form of unplanned purchases. Whether that association is mediated by affective states such as pleasure, arousal, or flow cannot be established here, because no organism variable was measured. The direction of the result is nonetheless consistent with Li et al. (2022), who found that the streamer's social presence increases pleasure and arousal that in turn trigger impulse purchases, and with Ming et al. (2021), who demonstrate the role of social presence in building trust and flow state. The present study should be read as establishing the magnitude of the overall stimulus-response link in this population, leaving the mechanism that connects the two to studies that measure it directly.

The mechanisms through which the individual facets of live streaming selling are thought to operate are well documented in prior research, and the following account is drawn from that literature rather than from the present data, in which the four facets were combined into a single composite score and were not estimated separately. Interactivity allows viewers to ask questions and receive immediate answers, which reduces doubt about the product; this

mechanism corresponds to the uncertainty reduction perspective advanced by Lu and Chen (2021). Time-limited promotions such as flash sales and exclusive vouchers create a sense of urgency and scarcity which, according to Huo et al. (2023) and Xiao et al. (2026), are strong triggers of impulsive buying. The appeal and credibility of streamers operates through a different route: Lee and Chen (2021) show that a streamer's charisma and expertise raise enjoyment and perceived usefulness, and for a generation raised within influencer culture streamers are often regarded as close and trustworthy figures whose recommendations are readily accepted (Djafarova and Bowes, 2021). Popularity cues such as viewer counts and visible purchase comments reinforce these effects through social proof (Lou et al., 2022). Because these four routes are theoretically distinct and were measured here as one construct, the aggregate coefficient reported above should be understood as their combined effect, and nothing in these data indicates how that effect is distributed among them.

The explanatory power of 39.3% is itself informative, and it is where this study diverges from part of the existing literature. Indonesian studies that specify richer models report substantially higher explained variance: Andika et al. (2025) and Utomo et al. (2025) both obtain stronger overall models by including affective and social mediators, and Auliarahman (2025) shows that the impulse itself is only an intermediate step towards continuous purchase intention. Read alongside those results, the present finding suggests that roughly two fifths of the variation in impulse buying is attributable to the live selling format as such, while the larger share depends on consumer dispositions and on the affective processes that the format sets in motion. Cahyani and Marcelino (2023) show that hedonic shopping motivation operating through positive emotion affects impulse purchases in Indonesian e-commerce, and the meta-analysis of Iyer et al. (2020) emphasises that impulse buying results from an interaction between environmental factors, individual traits, and emotional states. Deferred payment availability is a further candidate, since Prasetyani et al. (2024) show that paylater adoption among Indonesian Generation Z rests on trust dynamics that live selling is well placed to activate. One qualification applies to the comparison with Iswan and Roostika (2025): discounting, which that study treats as an external promotional factor, is embedded within the stimulus construct in the present model as the time-limited promotion facet, so the two estimates are not directly comparable.

The theoretical contribution of this study is therefore narrow and specific to the Indonesian context. It does not extend the S-O-R framework; it supplies a locally calibrated estimate of one of its paths, obtained with a fully reported instrument, for a population in which live selling has been adopted faster than almost anywhere outside China but in which consumer credit and financial literacy conditions differ markedly from the Chinese setting in which most of the evidence has been produced. That difference matters for interpretation. Where Chinese studies examine impulse buying within a mature live commerce ecosystem, the Indonesian case couples rapid platform adoption with embedded instalment credit and a developing financial literacy base, so an effect of comparable statistical size may carry a greater welfare cost. Establishing whether that is so requires the moderator designs recommended below.

From a managerial perspective, these findings imply that business actors need to design interactive live streaming sessions, present credible and communicative streamers, and use time-limited promotions ethically. Because the facets were not estimated separately, these recommendations follow from the construct as a whole and from prior research, and they

should not be read as a ranking of which element repays investment most. On the other hand, the vulnerability of Generation Z to impulse purchases indicates a need for financial literacy education so that young consumers are able to control spending and avoid excessive consumptive behaviour.

CONCLUSION

This study concludes that live streaming selling has a positive and significant effect on impulse buying among Generation Z consumers in Indonesia, explaining 39.3% of the variation in impulse buying, with the remainder attributable to factors beyond the research model. The four facets of interactivity, streamer appeal and credibility, time-limited promotion, and real-time product visualisation were combined into a single composite measure of the stimulus and were not tested individually, so no claim is made here about their separate contributions. Equally, because no organism variable was measured, the result substantiates the stimulus-response path of the Stimulus-Organism-Response framework rather than the framework in full. The study is further limited by the inclusion of only one independent variable, by purposive sampling and a sample skewed towards younger female respondents, which restricts generalisability, by its cross-sectional design, which precludes causal inference, and by reliance on self-reported data collected from a single source at one point in time. Future research is recommended to incorporate mediating variables such as positive emotion, flow experience, and the urge to buy impulsively, so that the organism component is actually observed; to employ Partial Least Squares Structural Equation Modelling, reported in line with Hair, Risher, et al. (2019), with a second-order construct and at least three indicators per facet so that the four dimensions can be estimated separately and sub-hypotheses tested; to introduce moderating variables such as self-control, financial literacy, and the availability of deferred payment; and to compare consumer behaviour across platforms such as TikTok Shop and Shopee Live in order to provide a more comprehensive understanding of the factors influencing impulse buying.

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CONFLICT OF INTEREST

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

AUTHOR CONTRIBUTIONS

Vika Fransisca: conceptualisation, methodology, instrument development, data collection, formal analysis, and writing of the original draft. Wahyu Eko Saputro: supervision, validation of the analysis, critical revision of the manuscript, and writing, review, and editing. Both authors have read and approved the final version of the manuscript and accept responsibility for its content.

GENERATIVE AI STATEMENT

The author(s) declared that generative AI was used in the creation of this manuscript. The author(s) wish to acknowledge the use of Generative AI for refining the language clarity and grammatical structure of this manuscript. This application was conducted in adherence to established ethical guidelines regarding the use and disclosure of generative AI in scholarly research. Each author has provided substantial intellectual contributions to the work, which has been rigorously vetted for accuracy, and the author(s) assume full responsibility for the integrity and final content of the manuscript.

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