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When Warmth Matters More Than Expertise: The Role of Streamer Interaction in Trust, Social Presence, and Purchase Intention in Indonesian Livestream Commerce

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Abstract - The rapid expansion of livestream commerce in Indonesia has intensified competition among streamers, making interaction quality and personal attributes critical determinants of consumers' purchase intentions. This study examines the effects of real-time interaction (responsiveness and interactivity) and streamer characteristics (attractiveness and expertise) on purchase intention, with trust and social presence serving as mediating variables. A quantitative research design was employed using an online survey of 300 Indonesian consumers with prior experience watching livestream shopping sessions. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the hypothesized relationships within the Stimulus-Organism-Response framework. The findings indicate that responsiveness, interactivity, and streamer attractiveness significantly enhance trust and social presence, which in turn increase purchase intention. Streamer expertise directly influences purchase intention and social presence, but does not significantly influence trust. These results suggest that relational and interactional cues play a more prominent role than competence-based cues in shaping consumer responses during livestream shopping. The study contributes to the literature on trust formation in interactive digital environments and provides practical insights for optimizing livestream engagement and conversion strategies.

Keywords: live-stream commerce, real-time interaction, streamer characteristics, trust, purchase intention.

Abstrak - *Pesatnya perkembangan livestream commerce di Indonesia telah meningkatkan tingkat persaingan antar streamer, sehingga kualitas interaksi dan atribut personal menjadi determinan penting terhadap niat beli konsumen. Penelitian ini menguji pengaruh interaksi waktu nyata (responsivitas dan interaktivitas) serta karakteristik streamer (daya tarik dan keahlian) terhadap niat beli, dengan kepercayaan dan kehadiran sosial sebagai variabel mediasi. Penelitian ini menggunakan pendekatan kuantitatif melalui survei daring terhadap 300 konsumen Indonesia yang memiliki pengalaman menonton sesi live stream shopping. Data dianalisis menggunakan Partial Least Squares Structural Equation modeling (PLS-SEM) untuk menguji hubungan yang dihipotesiskan dalam kerangka Stimulus-Organism-Response. Hasil penelitian menunjukkan bahwa responsivitas, interaktivitas, dan daya tarik streamer secara signifikan meningkatkan kepercayaan dan kehadiran sosial, yang selanjutnya mendorong peningkatan niat beli. Keahlian streamer secara langsung memengaruhi niat beli dan kehadiran sosial, namun tidak berpengaruh signifikan terhadap kepercayaan. Temuan ini menunjukan bahwa isyarat relasional dan interaksional memiliki peran yang lebih menonjol dibandingkan isyarat berbasis kompetensi dalam membentuk respons konsumen pada konteks live stream shopping. Penelitian ini berkontribusi terhadap pengembangan literatur mengenai pembentukan kepercayaan dalam lingkungan digital yang interaktif serta memberikan implikasi praktis bagi optimalisasi keterlibatan dan strategi konversi dalam aktivitas livestream commerce.*

Kata kunci*: live-stream commerce, interaksi waktu nyata, karakteristik streamer, kepercayaan, niat pembelian.*

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INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed consumer behavior and business operations, particularly through the expansion of digital commerce. In Indonesia, this transformation is reflected in the rapid growth of e-commerce businesses, which increased from 2.99 million in 2022 to 3.8 million in 2023, while transaction values rose from IDR 783 trillion to more than

1,100 trillion (BPS, 2025). Despite this expansion, conventional e-commerce often provides limited sensory engagement and reduced interpersonal interaction, which may weaken consumers' purchase intention (Xu, Cui, & Lyu, 2022). As competition intensifies, sellers are required to move beyond static information toward more immersive and interactive formats to enhance consumer engagement.

Livestream commerce (LSC) has emerged as an innovative format that integrates real-time product demonstrations, interactive communication, and instant purchasing features within a single platform. In Indonesia, seventy-one percent of consumers have accessed live shopping features and more than half have completed purchases through such channels (IPSOS, 2022). Platforms such as TikTok Live, Shopee Live, and Tokopedia Play have accelerated this development, particularly among young consumers in emerging digital markets. Prior research suggests that livestream interaction enhances consumer engagement and reduces uncertainty through immediate communication and social exchange (Wongkitrungrueng, Dehouche, & Assarut, 2020).

Although interaction is widely recognized as a defining characteristic of livestream commerce, its influence on purchase intention remains theoretically inconclusive. Some studies treat interaction as a direct predictor of behavioral outcomes, whereas others emphasize intervening psychological mechanisms such as trust (Doong, 2022). Liu, Wang, Dong, & Zhao (2022) further argue that interaction quality, including responsiveness and perceived authenticity, appears to be more influential than interaction frequency. Nevertheless, many studies continue to operationalize interaction as a unidimensional construct, overlooking the distinction between responsiveness (Liu & Zhang, 2024) and interactivity (Kang, Lu, Guo, & Li, 2021), which may activate distinct cognitive and affective responses.

A similar fragmentation appears in the examination of streamer characteristics. Attributes such as attractiveness and expertise are frequently investigated independently rather than integrated with interaction-related variables within a comprehensive analytical model (Park & Lin, 2020). Prior livestream commerce research highlights the role of various cues, including interaction cues, expertise cues, entertainment cues, and nonverbal cues in shaping consumer perceptions and purchase behavior (Chen et al., 2025; Xin et al., 2025; Zhang et al., 2025). However, existing studies rarely distinguish between relational cues which reflect warmth and interpersonal engagement, and competence-based cues which signal knowledge and credibility. This lack of conceptual differentiation limits understanding of how these cues influence consumer perceptions in livestream environments. Accordingly, this study contributes to the literature by explicitly distinguishing relational and competence-based cues within livestream commerce and examining their differential effects on consumer responses.

These gaps are particularly relevant in the Indonesian context, where livestream shopping functions not only as a transactional channel but also as a socially interactive and entertainment-driven activity (Tania, 2024). Within a collectivistic cultural environment, Sabirin, Elliyana, and Rosmiati (2024) argue that socio-emotional cues may exert stronger influence on consumer responses. Yet empirical evidence explaining how these different cues operate through psychological mechanisms underlying purchase intention in this specific cultural and market setting remains limited.

Grounded in the Stimulus-Organism-Response (SOR) framework, this study aims to develop and test an integrated model explaining how responsiveness, interactivity, streamer attractiveness, and streamer expertise influence purchase intention through trust and social presence. Specifically, this study aims to: (1) examine the effects of responsiveness, interactivity, streamer attractiveness, and streamer expertise on purchase intention in livestream commerce; (2) investigate the mediating roles of trust and social presence in these relationships; and (3) identify the most influential determinants of purchase intention among Indonesian consumers.

LITERATURE REVIEW

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

The Stimulus-Organism-Response (S-O-R) framework explains how environmental stimuli influence individuals' internal psychological states, which subsequently shape behavioral responses (Hochreiter, Benedetto, & Loesch, 2023). The framework has been widely adopted in consumer research to examine how marketing cues such as store atmospherics, advertising appeals, and digital interfaces shape consumer attitudes and purchase-related responses (Park & Lin, 2020; Xu et al., 2022). In this study, responsiveness, interactivity, streamer attractiveness, and streamer expertise represent the stimuli (S). Trust and social

presence function as organism states (O). Purchase intention constitutes the behavioral response (R). The S-O-R framework therefore provides an integrated theoretical foundation for explaining how livestream stimuli translate into purchase intention through internal psychological mechanisms.

Purchase Intention

Purchase intention refers to a consumer's willingness or plan to purchase a particular product or service in the near future and is widely recognized as a strong predictor of actual buying behavior (Chiu, Chang, Cheng, & Fang, 2009; Hajli, Sims, Zadeh, & Richard, 2017). In livestream commerce, where consumers cannot physically inspect products, purchase intention serves as a reliable indicator of how effectively online stimuli convert interest into action (Ahmad, Fahad, Zaki, Alam, & Khalid, 2025; Han & Jo, 2025). Prior research demonstrates that psychological mechanisms such as trust and social presence play central roles in strengthening purchase intention by reducing perceived uncertainty and enhancing emotional closeness during live sessions (Lee & Chen, 2021; Zhang, Wang, & Ariffin, 2024). Therefore, identifying the livestream stimuli that activate these internal states is essential for explaining purchase intention formation.

Real-Time Interaction

Real-time interaction in LSC refers to immediate and reciprocal communication between streamers and viewers during live sessions (Zhang, Li, Qian, Li, & Yuan, 2024). Unlike traditional one-way broadcasting, livestream platforms enable dynamic exchanges that allow viewers to ask questions, receive instant clarification, and actively participate in the shopping process. This study conceptualizes real-time interaction through two key aspects, responsiveness (Liu & Zhang, 2024) and interactivity (Kang et al., 2021).

Responsiveness reflects the timeliness and relevance of a streamer's replies to viewers' inquiries (Wongkitrungrueng et al., 2020; Hwang & Youn, 2023). High responsiveness signals attentiveness and reduces information asymmetry, thereby increasing engagement and purchase likelihood in livestream environments (Dong, Wang, & Qin, 2023; Liu & Zhang, 2024). Interactivity captures the degree of reciprocal communication and viewer participation during live sessions (Kang et al., 2021; Liu, Zhang, & Chen, 2022). It transforms passive viewing into active engagement, fostering involvement and psychological closeness (Ma, 2023). Higher levels of interactivity have been shown to enhance perceived relational exchange and increase overall purchase willingness (Cui, Law, Ng, & Lam, 2024; Liu et al., 2022; Zhou & Baskaran, 2025). Hence, the following hypotheses are proposed:

H_1 : Responsiveness positively influences consumers' purchase intention in LSC.
H_2 : Interactivity positively influences consumers' purchase intention in LSC.

Streamer Characteristics

Beyond interactional cues, streamer characteristics represent personal attributes that shape viewers' evaluations and persuasive responses during live sessions. Drawing on source credibility theory, this study conceptualizes streamer characteristics through attractiveness and expertise, representing cognitive and affective dimensions of persuasion (Guo, Zhang, & Wang, 2022; Zou & Fu, 2024).

Attractiveness refers to a streamer's perceived physical appeal and overall charm, including nonverbal cues such as facial expression, tone of voice, and presentation style, which generate favorable impressions (Nguyen, Nguyen, & Vo, 2025; Xu, Wu, & Li, 2020). Empirical evidence shows that attractiveness strengthens persuasive impact and viewer intention in livestream commerce, thereby directly increasing purchase intention (Shi, Wang, Qiao, & Shang, 2024; Tang, Hao, & Li, 2023). Expertise refers to perceived competence and professional knowledge in explaining products and addressing consumer concerns (Jiang, Lee, & Li, 2024). Evidence from *Taobao* e-commerce research shows that consumers are more likely to follow recommendations from streamers perceived as competent, as clear and informative explanations reduce uncertainty and perceived risk (Rungruangjit, 2022). Hence, the following hypotheses are proposed:

H_3 : Streamer Attractiveness positively influences consumers' purchase intention in LSC.
H_4 : Streamer Expertise positively influences consumers' purchase intention in LSC.

Trust and Social Presence as Organismic States

Within the S-O-R framework, trust and social presence represent internal psychological states that mediate the effects of stimuli on response relationships. Trust refers to the willingness of one party to rely on another with confidence in their integrity, ability, and reliability (Monfort, López-Vázquez, & Sebastián-Morillas, 2025). In LSC, trust reflects the belief that streamers provide accurate information and fulfill promises, particularly when products cannot be physically examined (Yang et al., 2024; Syamsuar & Witarsyah, 2025). Interactional cues such as responsiveness and interactivity signal sincerity and transparency (Liu & Zhang, 2024; Sashi, 2012), while attractiveness and expertise contribute to affect-based and competence-based trust formation respectively (Tang et al., 2023; Jiang et al., 2024). Accordingly:

H_5a : Responsiveness positively influences consumers' trust in LSC.
H_5b : Interactivity positively influences consumers' trust in LSC.
H_5c : Streamer Expertise positively influences consumers' trust in LSC.
H_5d : Streamer Attractiveness positively influences consumers' trust in LSC.

Social presence refers to the extent to which individuals perceive others as psychologically real and socially connected in mediated environments (Castellanos-Reyes, Richardson, & Maeda, 2024). In LSC, social presence reduces the perceived distance between online transactions and interpersonal offline interactions (Kreijns, Xu, & Weidlich, 2022). Interactional cues foster social recognition and reciprocal engagement (Liu et al., 2022; Liu et al., 2022; Xu, Huang, & Shang, 2021), while streamer characteristics provide emotional warmth and cognitive guidance throughout the shopping process (Dang & Hoang, 2025). Accordingly:

H_6a : Responsiveness positively influences consumers' social presence in LSC.
H_6b : Interactivity positively influences consumers' social presence in LSC.
H_6c : Streamer Expertise positively influences consumers' social presence in LSC.
H_6d : Streamer Attractiveness positively influences consumers' social presence in LSC.

Mediating Roles of Trust and Social Presence

The S-O-R framework posits that environmental stimuli influence behavioral response primarily through internal organismic states. In LSC, interactional and streamer-related cues are unlikely to translate into purchase intention without first shaping consumers' trust and perceived social presence. Trust reduces perceived risk and increases confidence in decision-making, whereas social presence fosters emotional engagement and relational involvement during live sessions. Prior research indicates that trust and social presence serve as critical transmission mechanisms linking livestream stimuli to purchase intention (Gao, Jiang, & Guo, 2023; Zou & Fu, 2024). Accordingly, trust and social presence are expected to mediate the relationships between livestream stimuli and purchase intention.

H_7 : Trust positively mediates the effects of responsiveness (a), interactivity (b), attractiveness (c), and expertise (d) on purchase intention.
H_8 : Social Presence positively mediates the effects of responsiveness (a), interactivity (b), attractiveness (c), and expertise (d) on purchase intention.

Effects of Trust and Social Presence on Purchase Intention

Trust and social presence have been consistently identified as critical psychological drivers that influence actual purchase intention in digital commerce environments. Trust enhances consumers' willingness to rely on and act on recommendations by reducing perceived uncertainty and risk (Wu & Huang, 2023). Chen, Chen, & Chen (2023) empirically verified that social presence directly increases purchase intention by enhancing emotional satisfaction and immersive engagement during live sessions.

H_9 : Trust positively influences consumers' purchase intention in LSC.
H_{10} : Social Presence positively influences consumers' purchase intention in LSC.

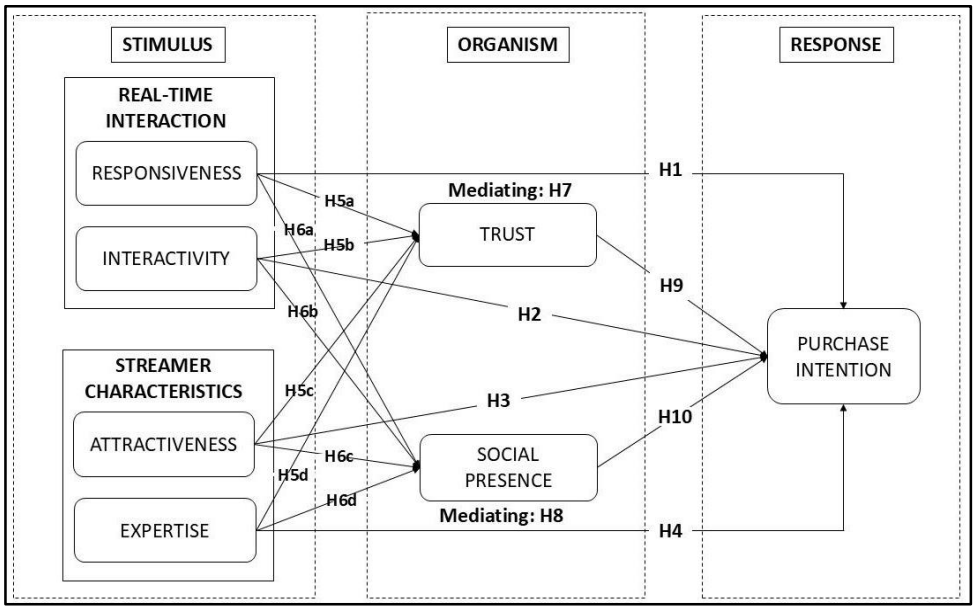

Figure 1. Research model
Source: Author's work (2026)

METHOD

This study employed a quantitative research design to examine the relationships between real-time interaction, streamer characteristics, trust, social presence, and purchase intention in Indonesian livestream commerce (LSC). A hypothesis-testing approach was adopted to assess direct and mediating relationships within the proposed structural model. The target population comprised Indonesian consumers aged 18 years and above who had prior experience watching livestream shopping sessions. This age criterion aligns with the minimum eligibility standards commonly applied by e-commerce livestreaming platforms and represents digitally literate users familiar with real-time shopping environments. To ensure the relevance of purchase intention assessment, the sampling frame was restricted to individuals who had not previously completed purchases through LSC but expressed an intention to do so. A purposive sampling technique was applied, and data were collected through an online survey distributed via Instagram, X (formerly Twitter), and WhatsApp. Primary data collection was conducted between October and November 2025. A total of 300 respondents were obtained, which is considered adequate for multivariate statistical analysis (Memon et al., 2020).

All constructs were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Prior to the primary data collection, a pilot test involving 30 respondents was conducted to ensure the clarity and reliability of the instrument. Cronbach's alpha values exceeded the recommended threshold of 0.70, indicating satisfactory internal consistency. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS. The analysis procedure included assessment of the measurement model (validity and reliability), followed by evaluation of the structural model to test the proposed hypotheses.

RESULT AND DISCUSSION

Descriptive Statistics

Table 1 presents the demographic profile of the respondents measured in this study. As shown in Table 1, the respondents were predominantly young adults aged 18-35 (75%), representing the primary demographic segment of the LSC user base in Indonesia. The gender distribution was relatively balanced, with 54% male, 42% female, and 4% preferring not to disclose. Most respondents held a bachelor's degree (63%), followed by high school graduates (29%), indicating a relatively well-educated sample. Diverse occupational backgrounds were reported, with entrepreneurs (30%) and private-sector employees (27%) forming the largest groups. Monthly income was largely concentrated between IDR 5,000,000–10,000,000

(32%) and below IDR 5,000,000 (27%), suggesting representation from middle-income consumers. Overall, the demographic profile reflects digitally active consumers relevant to the Indonesian livestream commerce context.

Table 1. Demographic profile of respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	161	54%
	Female	126	42%
	Prefer not to say	13	4%
Age (years)	18-24	80	27%
	25-30	64	21%
	31-35	81	27%
	35-40	42	14%
	Above 40	33	11%
Education level	High School (SMA/SMK)	86	29%
	Diploma (D1-D3)	22	7%
	Bachelor's Degree (S1)	189	63%
	Master's Degree (S2)	3	1%
	Doctorate (S3)	0	0%
Occupation	Student	56	19%
	Private employee	82	27%
	Entrepreneur	91	30%
	Civil servant (PNS)	55	18%
	Unemployed (not working)	16	5%
Marital Status	Married	260	53%
	Single	123	41%
Monthly Income (IDR)	< 5,000,000	80	27%
	5.000.001-10.000.000	96	32%
	10.000.001-25.000.000	96	32%
	>25.000.001	28	9%

Source: Author's work (2026)

Table 2. Descriptive statistics

Indicator	Mean	St. Dev
RESPONSIVENESS (RES)		
RES1. Streamer Virtual ini sangat senang berkomunikasi dengan saya. *This virtual streamer is very happy to communicate with me*	4.227	0.861
RES2. Streamer Virtual ini dapat menjawab pertanyaan saya dengan tepat waktu. *This virtual streamer can answer my questions in time*	4.29	0.8
RES3. Tanggapan dari streamer virtual ini sesuai dengan permasalahan yang saya ajukan. *The response of this virtual streamer is closely related to my problems.*	4.22	0.791
RES4. Streamer Virtual ini dapat menyediakan informasi yang relevan dengan pertanyaan saya dengan tepat waktu. *This virtual streamer can provide relevant information for my inquiry in time.*	4.24	0.842
INTERACTIVITY (INT)		
INT1. Saya melakukan interaksi komunikasi secara real-time dengan streamer selama acara *live streaming* berlangsung. *I engaged in real-time communication with streamers during the live streaming event.*	4.273	0.844
INT2. Saat saya menonton *live-streaming*, saya dapat berkomunikasi dengan streamer melalui obrolan waktu nyata (*real-time chat*) *While I was watching the livestreaming, I was able to have a conversation with the streamers through real-time chat.*	4.3	0.85
INT3. Penonton dapat mempertahankan komunikasi dua arah dengan streamer selama siaran *live-streaming*. *Viewers can maintain two-way communication with live-streamers.*	4.24	0.881
INT4. Saya merasa seolah-olah sedang berkomunikasi tatap muka dengan streamer. *I feel like having face-to-face communication with the streamer.*	4.277	0.868
INT5. Saya dapat berinteraksi dengan streamer melalui fitur komentar berjalan selama *live-stream.* *I can interact with the live streamer via bullet comments.*	4.207	0.882

Indicator	Mean	St. Dev
EXPERTISE (EXP)		
EXP1. Streamer tersebut memiliki pengetahuan yang tinggi mengenai produk yang dipromosikan *The streamer is highly knowledgeable about the products he/she promotes.*	4.17	0.924
EXP2. Streamer tersebut sangat berpengalaman pada penjualan *live streaming*. *The streamer is highly experienced in livestreaming sales.*	4.087	1.023
EXP3. Streamer tersebut memiliki keterampilan berkomunikasi secara profesional. *The streamer possesses professional communication skills.*	4.11	1.012
EXP4. Streamer tersebut memiliki kualifikasi profesional yang tinggi dalam penjualan. *The streamer has high professional sales qualifications*	4.16	0.974
EXP5. Streamer tersebut memiliki keterampilan yang baik terkait produk atau merek yang dipromosikan. *The streamer has skills about the product/brand.*	4.113	1.01
ATTRACTIVENESS (ATT)		
ATT1. Saya berpendapat bahwa streamer memiliki penampilan yang menarik *I think that the streamer has an appealing appearance.*	4.28	0.846
ATT2. Penampilan streamer secara keseluruhan (Pakaian, penataan diri, latar belakang) membuat pengalaman berbelanja terasa profesional *The streamer's overall presentation (clothing, grooming, background) makes the shopping experience feel professional.*	4.263	0.809
ATT3. Saya akan lebih memperhatikan streamers dengan wajah yang menarik pada sesi Live Streaming. *I would pay more attention to live streamers with attractive faces in the livestreaming room.*	4.23	0.839
ATT4. Wajah streamer yang menarik membuat saya lebih memperhatikan apa yang dipromosikannya. *The attractive face of livestreamers draws my attention to what he/she is promoting.*	4.247	0.836
ATT5. Streamer tersebut memiliki suara yang persuasif. *The streamer has a very persuasive voice.*	4.31	0.817
ATT6. Streamer tersebut memiliki wajah yang menarik. *The streamer has a very beautiful face.*	4.26	0.844
TRUST (TR)		
TR1. Saya percaya bahwa streamer tersebut dapat dipercayai. *I believe that the streamer was trustworthy.*	4.233	0.803
TR2. Informasi yang diberikan di sesi Live Streaming dianggap akurat dan jujur. *The information provided on the livestreaming was considered accurate and truthful.*	4.21	0.808
TR3. Saya yakin bahwa produk yang saya beli akan sesuai dengan yang ditampilkan di platform. *I had faith that the products I bought would match the ones displayed on the platform.*	4.257	0.815
TR4. Streamer tersebut tampaknya adalah orang yang jujur. *The streamer appears to be a sincere person.*	4.267	0.801
TR5. Streamer tersebut adalah sumber informasi yang dapat diandalkan. *The streamer is a reliable source of information.*	4.217	0.826
SOCIAL PRESENCE (SP)		
SP1. Saya merasa memiliki keterikatan emosional dengan streamer saat menggunakan platform tersebut. *I felt emotionally connected with the streamer while using the platform.*	4.25	0.825
SP2. Saya merasakan pengalaman bersosialisasi ketika menggunakan platform tersebut. *I experienced a sense of socialization while using the platform.*	4.217	0.83
SP3. Saya dapat merasakan kehangatan manusiawi saat menggunakan platform tersebut. *I was able to perceive a sense of human warmth while using the platform.*	4.25	0.779
SP4. Terdapat rasa kepekaan manusiawi dalam live-streaming yang dilakukan oleh streamer ini. *There is a sense of human sensitivity in this virtual streamer's live streaming.*	4.263	0.833
SP5. Saat menonton live-stream, terdapat rasa seolah-olah sedang berkomunikasi secara tatap muka dengan streamer. *When watching a live stream, there is a sense of face-to-face communication.*	4.233	0.77
PURCHASE INTENTION (PI)		
PI1. Saya berniat untuk membeli produk yang dipromosikan oleh virtual streamer dalam Live Streaming *I intend to purchase the products that this virtual streaming promotes in the live streaming.*	4.26	0.828
PI2. Saya akan mempertimbangkan ruang live streaming dari virtual streamer ini sebagai pilihan berbelanja pertama saya.	4.267	0.834

Indicator	Mean	St. Dev
I will consider this virtual streamer's live streaming room as my first shopping choice.		
PI3. Saya ingin mencoba produk yang direkomendasikan oleh streamer. *I want to try the product the streamer recommends.*	4.223	0.787
PI4. Produk yang direkomendasikan oleh streamer layak dibeli. *The product the streamer recommends is worth buying.*	4.227	0.85
PI5. Saya berniat melakukan pembelian melalui Live Streaming dimasa depan. *I intend to purchase through live steam shopping in the near future.*	4.247	0.799

Note: *Items were measured using a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5)*
Source: Author's work (2026)

Table 3. Measurement of model assessment

Constructs	Indicator	Loading	*Cronbach's alpha*	Composite reliability (rho_a)	AVE
Attractiveness	ATT1	0.828	0.908	0.908	0.685
	ATT2	0.809			
	ATT3	0.834			
	ATT4	0.834			
	ATT5	0.807			
	ATT6	0.853			
Expertise	EXP1	0.779	0.857	0.861	0.636
	EXP2	0.776			
	EXP3	0.816			
	EXP4	0.806			
	EXP5	0.808			
Interactivity	INT1	0.854	0.911	0.912	0.738
	INT2	0.851			
	INT3	0.860			
	INT4	0.851			
	INT5	0.878			
Purchase Intention	PI1	0.833	0.887	0.888	0.690
	PI2	0.837			
	PI3	0.813			
	PI4	0.833			
	PI5	0.835			
Responsiveness	RES1	0.828	0.862	0.864	0.708
	RES2	0.860			
	RES3	0.827			
	RES4	0.849			
Social Presence	SP1	0.824	0.882	0.882	0.679
	SP2	0.832			
	SP3	0.815			
	SP4	0.830			
	SP5	0.820			
Trust	TR1	0.809	0.877	0.878	0.670
	TR2	0.816			
	TR3	0.820			
	TR4	0.808			
	TR5	0.840			

Source: Author's work (2026)

Table 2 presents the descriptive statistics of all measurement indicators, including the mean and standard deviation. Overall, the mean values ranged between 4.087 and 4.31, indicating that respondents generally expressed moderate to high agreement with the statements measuring the constructs in this study. Indicators related to real-time interaction, including responsiveness and interactivity, exhibited relatively high mean scores, suggesting that respondents perceived livestream sessions as interactive environments where streamers actively engage with viewers. Similarly, items measuring streamer attractiveness, trust, and social presence recorded consistently high mean values, reflecting that respondents perceived livestream interactions as socially engaging and personable.

The standard deviation values ranged between 0.77 and 1.02, indicating a moderate level of response dispersion across the sample. This suggests that while respondents generally agreed with the statements, some variation in perceptions remained, which is typical in consumer behavior studies using Likert-scale measurements. The slightly higher standard deviation observed in several expertise indicators suggests greater variation in respondents' evaluations, implying that perceptions of streamer expertise were less uniform compared to other constructs.

Table 3 presents the measurement model assessment. Convergent validity was evaluated using outer loadings and Average Variance Extracted (AVE), following the thresholds recommended by Hair, Risher, Sarstedt, and Ringle (2019). All indicator loadings exceeded 0.70 and AVE values for all constructs surpassed the minimum standard of 0.50, confirming satisfactory convergent validity. Reliability was assessed using Cronbach's Alpha and Composite Reliability, with all constructs exceeding the 0.70 threshold (Tavakol & Dennick, 2011), demonstrating satisfactory reliability. As all constructs satisfied the required criteria, the measurement model demonstrated adequate convergent validity and reliability and was suitable for subsequent structural testing.

Table 4. Discriminant validity (HTMT Criterion)

	ATT	EXP	INT	PI	RES	SP	TR
ATT							
EXP	0.667						
INT	0.706	0.583					
PI	0.786	0.693	0.736				
RES	0.722	0.609	0.651	0.763			
SP	0.763	0.676	0.734	0.805	0.743		
TR	0.795	0.625	0.731	0.841	0.773	0.811	

Source: Author's work (2026)

Table 4 reports the Heterotrait-Monotrait Ratio (HTMT) for assessing discriminant validity. Following the criterion proposed by Voorhees, Brady, Calantone, and Ramirez (2016), all HTMT values were below the threshold of 0.85. These results indicated that the constructs were empirically distinct from one another.

Structural Model Assessment

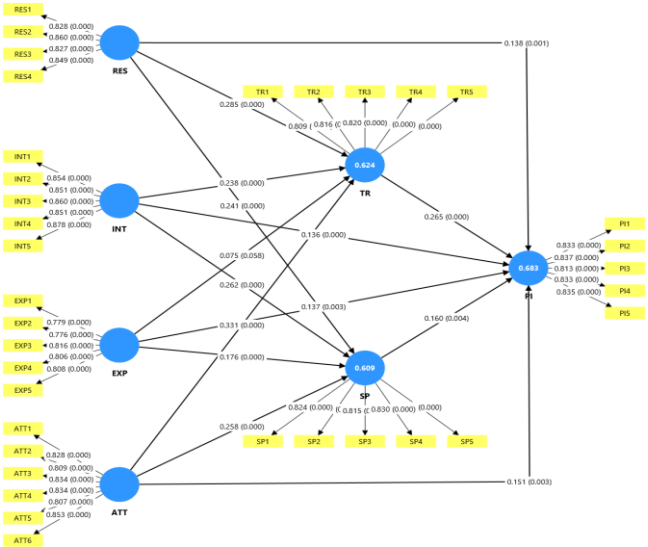

Figure 2. Results of bootstrapping
Source: Author's work (2026)

Bootstrapping with 5,000 resamples was conducted to test the significance of the structural paths. The structural model was evaluated using the coefficient of determination (R^2), multicollinearity diagnostics (VIF), and hypothesis testing.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) indicated the proportion of variance explained in the endogenous constructs. The results showed that responsiveness, interactivity, attractiveness, and expertise explained 62.4 percent of the variance in Trust ($R^2 = 0.624$) and 60.9 percent of the variance in Social Presence ($R^2 = 0.609$). Purchase intention demonstrated an R^2 value of 0.683, indicating that 68.3 percent of its variance is explained by the model predictors. Using the benchmark proposed by Hair et al. (2019), all R^2 values fell within the moderate to substantial range, confirming adequate predictive capability.

Multicollinearity Assessment (VIF)

As the data were collected using a self-administered questionnaire, additional diagnostic checks were conducted to ensure that the results were not affected by common method bias or multicollinearity. Following the criterion proposed by Kock (2015), all VIF values fell between 1.679 and 2.862, which were below the threshold of 3.3. These results indicated that multicollinearity was not present in the structural model and unlikely to threaten the validity of the model estimates.

Table 5. Hypothesis testing results

Hypothesis	Path	Path Coefficient	S.E	t-value	p-value	Result
H1	RES→PI	0.138	0.046	3.009	0.001	Supported
H2	INT→PI	0.136	0.039	3.502	0.000	Supported
H3	ATT→ PI	0.151	0.055	2.742	0.003	Supported
H4	EXP→ PI	0.137	0.049	2.769	0.003	Supported
H5a	RES→TR	0.285	0.057	4.975	0.000	Supported
H5b	INT→TR	0.238	0.062	3.848	0.000	Supported
H5c	EXP→TR	0.075	0.048	1.570	0.058	Not supported
H5d	ATT→ TR	0.331	0.074	4.486	0.000	Supported
H6a	RES→SP	0.241	0.059	4.113	0.000	Supported
H6b	INT→ SP	0.262	0.053	4.976	0.000	Supported
H6c	EXP→ SP	0.176	0.043	4.079	0.000	Supported
H6d	ATT→ SP	0.258	0.071	3.643	0.000	Supported
H9	TR→PI	0.265	0.051	5.152	0.000	Supported
H10	SP→PI	0.160	0.060	2.661	0.004	Supported

Hypothesis	Path	Path Coefficient	Bias-corrected 95% confidence interval		p-value	Result
			Lower	Upper		
H7a	RES→ TR→PI	0.076	0.049	0.117	0.000	Supported
H7b	INT→TR→PI	0.063	0.037	0.104	0.001	Supported
H7c	ATT→TR→PI	0.088	0.051	0.147	0.001	Supported
H7d	EXP→TR→PI	0.020	0.002	0.048	0.074	Not Supported
H8a	RES→SP→PI	0.039	0.017	0.075	0.011	Supported
H8b	INT→SP→PI	0.042	0.017	0.082	0.015	Supported
H8c	ATT→SP→PI	0.041	0.017	0.084	0.015	Supported
H8d	EXP→SP→PI	0.028	0.010	0.060	0.027	Supported

Note: *Indirect effects (H7-H8) were tested using bias-corrected bootstrapping with 5,000 resamples (95% CI).*
Source: Author's work (2026)

Hypothesis testing was conducted to examine both direct effects and indirect effects. Following Hair, Hult, Ringle, and Sarstedt (2017), paths were considered significant when t-values exceeded 1.65 ($p < 0.05$).

For direct effects on purchase intention, responsiveness, interactivity, attractiveness, and expertise showed significant positive effects. Thus, H1, H2, H3, and H4 were supported. Regarding predictors of Trust, three of the four stimulus variables demonstrated significant positive effects. However, the effects of expertise on trust (EXP→TR) did not reach statistical significance threshold (t-value 1.570, $p > 0.05$).

Accordingly, H5c was not supported. In contrast, all stimulus variables significantly influenced Social Presence (SP). Thus, H6a, H6b, H6c, and H6d were supported. Furthermore, both organismic variables of Trust (t-value 5.152, $p < 0.000$) and Social Presence (t-value 2.661, $p < 0.05$) showed significant positive effects on purchase intention. Accordingly, H9 and H10 were supported.

Indirect effects were examined using bias-corrected bootstrapping with a 95% confidence interval. An indirect effect was considered significant when the confidence interval did not include zero. The mediation analysis revealed that trust significantly mediated the relationships between responsiveness, interactivity, and attractiveness on purchase intention (H7a–H7c supported). In contrast, the indirect effect of expertise through trust (EXP → TR → PI) did not reach the significance threshold ($p = 0.074$). Accordingly, H7d was not supported. Conversely, social presence consistently mediated the relationships between all stimulus variables and purchase intention, supporting H8a-H8d. Overall, these findings indicate that the two organismic variables operate differently, with social presence providing a more stable and consistent mechanism for translating stimuli into purchase intention.

Discussion

This study examined how real-time interaction and streamer characteristics influence purchase intention in Indonesian livestream commerce through the Stimulus-Organism-Response (S-O-R) framework. The findings demonstrate that responsiveness, interactivity, and streamer attractiveness significantly strengthened trust and social presence, which subsequently increased purchase intention.

Streamer expertise, however, displays a differentiated role. Although expertise directly influences purchase intention and significantly enhances social presence, it does not significantly strengthen trust nor operate indirectly through trust. This pattern suggests that stimulus processing in livestream commerce differs from conventional e-commerce settings, where expertise typically functions as a primary driver of cognitive trust. The results indicate that trust formation in livestream commerce is more strongly driven by relational-affective cues than by competence-based signals. Responsiveness, interactivity, and attractiveness demonstrate significant pathways to trust, indicating a shift from cognition-based credibility toward relational credibility, where warmth, authenticity, and engagement become central evaluation criteria.

The absence of a significant expertise-trust relationship does not indicate that expertise is irrelevant. Rather, it suggests functional differentiation. In low- to moderate-risk livestream settings that emphasize entertainment and rapid interaction, relational warmth may function as a simplified trust cue that substitutes for deeper competence evaluation. Expertise may become more influential under higher-risk or high-involvement product conditions. This interpretation introduces contextual contingency into trust formation mechanisms within interactive digital commerce formats.

The consistent mediating role of social presence further reinforces these findings. All stimulus variables significantly influence social presence, which subsequently increases purchase intention. This supports the S-O-R proposition that organismic states reflecting perceived co-presence and social connectedness function as key mechanisms translating environmental stimuli into behavioral responses. Unlike trust, which shows varying effects across pathways, social presence consistently mediates all relationships and highlights the inherently social nature of livestream commerce.

These findings can also be interpreted through the lens of parasocial interaction, which conceptualizes the one-sided psychological connections and perceived relationships that viewers develop with media personalities through mediated communication (Huang & Mohamad, 2025). In livestream commerce, responsiveness, interactivity, and streamer attractiveness foster a sense of intimacy and perceived familiarity, strengthening viewers' emotional connection with the streamer. This relational closeness enhances trust, as consumers are more likely to rely on streamers who feel socially present and personally engaging (Yang, Koh, & Chew, 2025).

Moreover, the results align with the concept of social commerce engagement, where consumers actively participate in interactive and socially embedded shopping environments (Busalim, Hollebeek, and Lynn, 2023). Livestream features such as real-time communication, feedback, and audience interaction transform consumers from passive observers into engaged participants. Such engagement reinforces social presence and amplifies the influence of relational cues on purchase intention, suggesting that consumer responses in livestream commerce are shaped by both interaction intensity and social involvement.

Contextual interpretation is also important. Indonesian livestream environments are often characterized by informal and engagement-driven selling styles that emphasize conversational warmth and relational authenticity (Tania, 2024). Such interaction norms may increase the persuasive impact of relational cues relative to formal competence signaling, consistent with previous research suggesting that relational engagement can outweigh competence-based evaluation in interactive digital contexts (Tedjakusuma, Silalahi, Eunike, Phuong, & Riantama, 2025). Comparative evidence from the Chinese livestream market, where expertise has been identified as a dominant predictor of trust (Yang et al., 2024; Jiang et al., 2024). While both markets are characterized by high interactivity and entertainment-driven formats, consumer expectations may differ. These differences indicate that the effectiveness of competence-based persuasion depends on cultural expectations and prevailing selling styles.

The findings should also be considered in light of the sample's demographic composition. The majority of respondents were young adults (18-35 years), highly educated (predominantly bachelor's degree holders), and economically active. For digitally fluent segments, livestream commerce may be perceived more as a socially interactive environment than a purely transactional marketplace. Under such conditions, interpersonal engagement norms and conversational authenticity may exert stronger influence on trust formation than formal expertise evaluation.

Collectively, this study contributes to livestream commerce literature in three ways. First, it refines the application of the S-O-R framework by distinguishing multiple dimensions of interaction and streamer characteristics while clarifying the parallel mediating roles of trust and social presence. Second, it advances trust formation theory by showing that persuasive cues do not exert equal influence in highly interactive commerce settings. The findings indicate that relational cues, such as warmth and engagement, play a stronger and more immediate role in building trust than competence-based cues. Third, by providing empirical evidence from the Indonesian livestream market, this study extends livestream commerce research into an emerging digital market characterized by socio-emotional consumption patterns. The results suggest that trust formation models in livestream commerce should account for interaction intensity, product involvement, and contextual expectations to avoid overgeneralizing expertise-centered assumptions.

CONCLUSION

This study investigated the effect of real-time interaction and streamer characteristics on purchase intention in Indonesian livestream commerce through the Stimulus-Organism-Response framework. The findings show that responsiveness, interactivity, and streamer attractiveness significantly strengthen trust and social presence, which subsequently increase purchase intention. Streamer expertise directly strengthens purchase intention and social presence; however, it does not significantly influence trust nor exert an indirect effect through trust. These findings highlight an important boundary condition in trust formation within highly interactive digital commerce. Purchase intention appears to be driven primarily by relational and interactional dynamics rather than by competence-based evaluations alone. Trust is shaped more by communication style and perceived interpersonal closeness than by formal signals of expertise. This study refines existing livestream commerce literature by demonstrating that expertise does not uniformly translate into trust under all interactive conditions.

Managerially, livestream sellers and brands should prioritize responsiveness, conversational depth, and authentic engagement during live sessions. Immediate feedback, personalized interaction, and emotionally resonant communication strengthen perceived closeness and foster trust. While expertise remains relevant, it should be conveyed through authentic and interactive delivery rather than formal authority signaling. Platforms may further enhance purchase intention by integrating features that intensify social presence, including real-time engagement mechanisms and visible audience interaction.

Despite these contributions, several limitations should be acknowledged. First, the cross-sectional design restricts causal inference, and future research should employ longitudinal or experimental approaches to strengthen causal validation. Second, the absence of differentiation across product categories and perceived risk levels may obscure contextual variation in cue effectiveness. Third, the demographic composition of the sample is dominated by younger respondents, which may limit the generalizability of the findings across different age groups. Younger consumers are typically more familiar with digital platforms and interactive shopping formats, and may place greater emphasis on relational cues such as responsiveness and interactivity. Consequently, the observed dominance of relational signals over competence-based cues may not fully extend to older or less digitally experienced consumers.

Future research should therefore examine the moderating roles of product involvement, perceived risk, demographic characteristics, digital familiarity, and cultural orientation. Comparative cross-country investigations would further determine whether the observed relational dominance reflects contextual specificity or a broader pattern across livestream commerce ecosystems. Expanding organismic mechanisms beyond trust and social presence may also deepen understanding of behavioral responses in interactive commerce environments. In addition, future studies are encouraged to include more diverse demographic segments to examine potential differences across age groups and levels of digital familiarity.

AI DISCLOSURE STATEMENT

We declare the use of Grammarly as an augmented tool for grammar checking and language clarity improvement, ensuring that the core intellectual property remains the work of the human authors. We affirm that the AI is not a co-author and that the final manuscript was thoroughly reviewed for accuracy and ethical compliance.

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Appendix A
Measurement Items of Research Constructs

Construct	Code	Measurement Items	Source
Responsiveness	RES1	Streamer Virtual ini sangat senang berkomunikasi dengan saya. *This virtual streamer is very happy to communicate with me*	Gao, Jiang, and Guo (2023)
	RES2	Streamer Virtual ini dapat menjawab pertanyaan saya dengan tepat waktu. *This virtual streamer can answer my questions in time*	
	RES3	Tanggapan dari streamer virtual ini sesuai dengan permasalahan yang saya ajukan. *The response of this virtual streamer is closely related to my problems and requests.*	
	RES4	Streamer Virtual ini dapat menyediakan informasi yang relevan dengan pertanyaan saya dengan tepat waktu. *This virtual streamer can provide relevant information for my inquiry in time.*	
Interactivity	INT1	Saya melakukan interaksi komunikasi secara real-time dengan streamer selama acara *live streaming* berlangsung. *I engaged in real-time communication with streamers during the live streaming event.*	Wu, Batool, and Yang (2024)
	INT2	Saat saya menonton *live-streaming*, saya dapat berkomunikasi dengan streamer melalui obrolan waktu nyata (*real-time chat*) *While I was watching the livestreaming, I was able to have a conversation with the streamers through real-time chat.*	
	INT3	Penonton dapat mempertahankan komunikasi dua arah dengan streamer selama siaran *live-streaming*. *Viewers can maintain two-way communication with live-streamers.*	Ma (2023)
	INT4	Saya merasa seolah-olah sedang berkomunikasi tatap muka dengan streamer. *I feel like having face-to-face communication with the streamer.*	Chen, Lu, and Zheng (2020)
	INT5	Saya dapat berinteraksi dengan streamer melalui fitur komentar berjalan selama *live-stream.* *I can interact with the live streamer via bullet comments.*	
Expertise	EXP1	Streamer tersebut memiliki pengetahuan yang tinggi mengenai produk yang dipromosikan *The streamer is highly knowledgeable about the products he/she promotes.*	Zheng et al. (2023); Guo et al. (2022), adapted via Jiang, Lee and Li (2024)
	EXP2	Streamer tersebut sangat berpengalaman pada penjualan *live streaming*. *The streamer is highly experienced in livestreaming sales.*	
	EXP3	Streamer tersebut memiliki keterampilan berkomunikasi secara profesional. *The streamer possesses professional communication skills.*	
	EXP4	Streamer tersebut memiliki kualifikasi profesional yang tinggi dalam penjualan. *The streamer has high professional sales qualifications*	Ruangruangjit (2022)
	EXP5	Streamer tersebut memiliki keterampilan yang baik terkait produk atau merek yang dipromosikan. *The streamer has skills about the product/brand.*	
Attractiveness	ATT1	Saya berpendapat bahwa streamer memiliki penampilan yang menarik *I think that the streamer has an appealing appearance.*	Xu et al. (2022)
	ATT2	Penampilan streamer secara keseluruhan (Pakaian, penataan diri, latar belakang) membuat pengalaman berbelanja terasa profesional *The streamer's overall presentation (clothing, grooming, background) makes the shopping experience feel professional.*	

Construct	Code	Measurement Items	Source
	ATT3	Saya akan lebih memperhatikan streamers dengan wajah yang menarik pada sesi Live Streaming. *I would pay more attention to live streamers with attractive faces in the livestreaming room.*	Shi et al. (2024)
	ATT4	Wajah streamer yang menarik membuat saya lebih memperhatikan apa yang dipromosikannya. *The attractive face of livestreamers draws my attention to what he/she is promoting.*	
	ATT5	Streamer tersebut memiliki suara yang persuasif. *The streamer has a very persuasive voice.*	Ruangruangjit (2022)
	ATT6	Streamer tersebut memiliki wajah yang menarik. *The streamer has a very beautiful face.*	
Trust	TR1	Saya percaya bahwa streamer tersebut dapat dipercayai. *I believe that the streamer was trustworthy.*	Liu & Zhang (2024)
	TR2	Informasi yang diberikan di sesi Live Streaming dianggap akurat dan jujur. *The information provided on the livestreaming was considered accurate and truthful.*	
	TR3	Saya yakin bahwa produk yang saya beli akan sesuai dengan yang ditampilkan di platform. *I had faith that the products I bought would match the ones displayed on the platform.*	
	TR4	Streamer tersebut tampaknya adalah orang yang jujur. *The streamer appears to be a sincere person.*	Ruangruangjit (2022)
	TR5	Streamer tersebut adalah sumber informasi yang dapat diandalkan. *The streamer is a reliable source of information.*	
Social Presence	SP1	Saya merasa memiliki keterikatan emosional dengan streamer saat menggunakan platform tersebut. *I felt emotionally connected with the streamer while using the platform.*	Liu & Zhang (2024)
	SP2	Saya merasakan pengalaman bersosialisasi ketika menggunakan platform tersebut. *I experienced a sense of socialization while using the platform.*	
	SP3	Saya dapat merasakan kehangatan manusiawi saat menggunakan platform tersebut. *I was able to perceive a sense of human warmth while using the platform.*	
	SP4	Terdapat rasa kepekaan manusiawi dalam live-streaming yang dilakukan oleh streamer ini. *There is a sense of human sensitivity in this virtual streamer's live streaming.*	Gao, Jiang, and Guo (2023)
	SP5	Saat menonton live-stream, terdapat rasa seolah-olah sedang berkomunikasi secara tatap muka dengan streamer. *When watching a live stream, there is a sense of face-to-face communication.*	Liu et al. (2022)
Purchase Intention	PI1	Saya berniat untuk membeli produk yang dipromosikan oleh virtual streamer dalam Live Streaming *I intend to purchase the products that this streamer promoted in the livestreaming.*	Gao, Jiang, Guo (2023)
	PI2	Saya akan mempertimbangkan ruang live streaming dari virtual streamer ini sebagai pilihan berbelanja pertama saya. *I will consider this virtual streamer's live streaming room as my first shopping choice.*	
	PI3	Saya ingin mencoba produk yang direkomendasikan oleh streamer. *I want to try the product the streamer recommends.*	Park & Lin (2020)
	PI4	Produk yang direkomendasikan oleh streamer layak dibeli. *The product the streamer recommends is worth buying.*	
	PI5	Saya berniat melakukan pembelian melalui Live Streaming dimasa depan. *I intend to purchase through live steam shopping in the near future.*	Hwang & Youn 2023)