

Gamification, Live Streaming, and Social Influence as Drivers of Purchase Intention: The Mediating Role of Flow Experience among Generation Z

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Abstract: The rapid growth of e-commerce and digital marketing has transformed Generation Z's online shopping behavior, highlighting the need to understand how digital marketing stimuli influence purchase intention. This study aims to analyze the influence of gamification, live streaming, and social influence on Generation Z's purchase intention in Priangan Timur, with flow experience as a mediating variable. A quantitative survey involving 300 respondents was analyzed using Structural Equation Modeling (SEM). The results indicate that gamification, live streaming, and social influence significantly influence flow experience, which subsequently has a significant positive effect on purchase intention. Mediation analysis demonstrates that flow experience partially mediates the relationships between the three digital stimuli and purchase intention, with live streaming producing the strongest indirect effect. These findings confirm the central role of flow experience within the Stimulus–Organism–Response (SOR) framework and highlight its importance in developing experience-based digital marketing strategies. The study's novelty lies in integrating gamification, live streaming, and social influence into a unified SOR model while positioning flow experience as the key mediating mechanism. Future research should validate the model across different regions, generations, and digital platforms by incorporating trust, perceived enjoyment, and AI-powered personalization.

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INTRODUCTION

According to data released by the Badan Pusat Statistik (BPS) in 2020, Generation Z accounts for 27.94% of Indonesia's total population, making it the largest generational cohort in the country. Although its current purchasing power remains lower than that of the Millennial generation, its demographic dominance positions Generation Z as one of the most promising market segments for businesses across various industries.

Generation Z has grown up in a technological and social environment that differs substantially from those experienced by previous generations. Consequently, this generation demonstrates distinctive values, preferences, and consumption patterns that influence how they evaluate products, interact with brands, and make purchasing decisions. Traditional marketing approaches that were effective for earlier generations



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may therefore be insufficient for engaging Generation Z consumers. Businesses must develop innovative and relevant marketing strategies that align with the digital lifestyles and expectations of this generation.

Recent studies indicate that Generation Z prioritizes convenience, efficiency, and practicality when making purchasing decisions. As a result, this generation has increasingly shifted its shopping activities toward e-commerce platforms. Features such as easy accessibility, transaction efficiency, flexible payment methods, and the ability to satisfy immediate needs have contributed significantly to the growing popularity of online shopping among Generation Z consumers. Furthermore, promotional incentives commonly offered by e-commerce platforms, including discounts, cashback programs, vouchers, and loyalty rewards, further strengthen consumers' purchasing preferences and encourage online transactions.



Figure 1. Composition of Indonesia's Population by Generation

Source: Kompas (2022)

Figure 1 illustrates the generational composition of Indonesia's population. Generation Z accounts for the largest share (27.94%), followed by Generation Y (25.87%) and Generation X (21.88%), whereas Pre-Baby Boomers constitute the smallest proportion (1.87%). The rapid advancement of digital technologies has transformed the e-commerce landscape and reshaped the way consumers interact with products and services. Among all consumer groups, Generation Z is widely recognized as the most adaptive to these technological developments. Having grown up with smartphones, social media platforms, and internet-based communication, Generation Z demonstrates a high level of familiarity with digital environments and online shopping activities. Consequently, they tend to respond positively to interactive, engaging, and immersive online experiences.

Figure 2 demonstrates the dominance of e-commerce as the preferred shopping channel, accounting for 66.09% of consumer preferences. Conventional retail formats, including supermarkets/hypermarkets (13.25%) and minimarkets/convenience stores (10.60%), remain relevant but represent substantially smaller shares, whereas social media, specialty stores, specific shopping apps, and websites contribute only marginally. These findings reflect consumers' strong preference for digital shopping platforms over traditional retail channels.

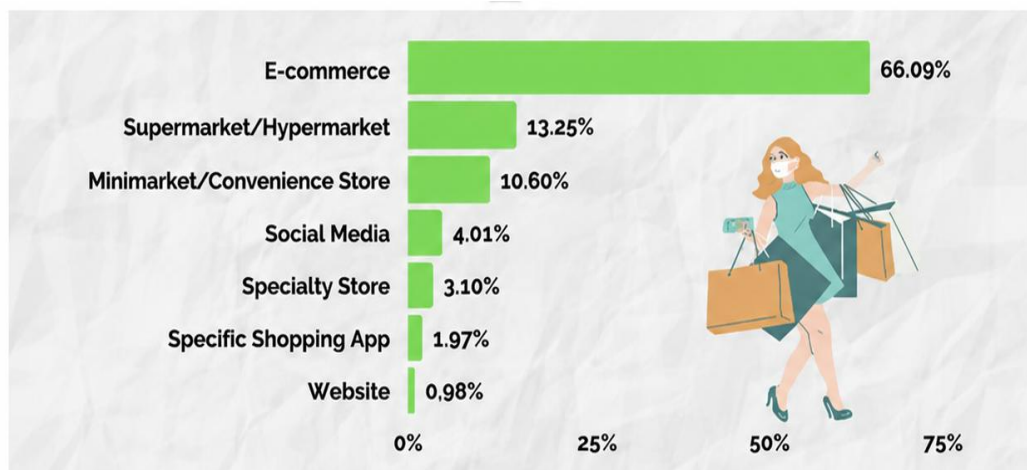


Figure 2. Shopping Preferences of Generation Z
Source: Kompas (2022)

In response to increasingly competitive digital markets, e-commerce companies continuously seek innovative approaches to stimulate consumers' purchase intention. Among the most widely adopted digital marketing strategies are gamification, live streaming, and social influence. These strategies have attracted considerable attention from both practitioners and researchers because of their ability to increase consumer engagement and encourage purchasing behavior in digital environments.

Within this context, flow experience has emerged as an important psychological construct for understanding consumer behavior in digital environments. Flow experience refers to a state of deep concentration, enjoyment, and immersion experienced by individuals while performing an activity. Consumers who experience flow during online shopping tend to become more engaged with the platform, spend more time interacting with available content, and exhibit stronger behavioral intentions toward purchasing products.

The Stimulus–Organism–Response (SOR) framework provides a valuable theoretical foundation for explaining these relationships. According to the SOR model, environmental stimuli influence an individual's internal psychological state, which subsequently affects behavioral responses. In this study, gamification, live streaming, and social influence represent stimulus variables, flow experience serves as the organism variable, and purchase intention represents the response variable.

Despite the rapid growth of research on digital consumer behavior, several significant research gaps remain. First, previous studies have primarily examined gamification, live streaming, and social influence either independently or in very limited combinations. For instance, Athoillah and Hidayat (2024) and Tien Minh et al. (2023) focused on the effectiveness of gamification in enhancing customer engagement on e-commerce platforms such as Shopee. In contrast, Liu et al. (2022) and Wang et al. (2021) extensively investigated live-streaming features, including interactivity and entertainment, while overlooking the competitive and reward-based elements of gamification. Meanwhile, Gunawan et al. (2023) emphasized the effects of social influence and peer influence on purchase intention through the lenses of the Theory of Planned Behavior (TPB) and the Technology Acceptance Model (TAM). However, no study has comprehensively integrated these three contemporary digital stimuli to examine their simultaneous effects on consumer purchase intention.

Second, empirical studies that simultaneously incorporate gamification, live streaming, and social influence within a unified Stimulus–Organism–Response (SOR)

framework remain scarce. Although the SOR model has been widely employed to explain consumer behavior in live-streaming commerce, existing studies have largely focused on live-streaming characteristics while neglecting gamification elements, such as reward systems and competition, together with social influence as external stimuli. Chang and Yu (2023), for example, demonstrated that gamification elements embedded in live-streaming platforms enhance consumers' sense of immersion; however, their study did not consider the role of social influence, which is particularly important for Generation Z consumers whose purchasing decisions are strongly shaped by peer interactions and online communities.

Third, inconsistent findings and limited empirical attention remain regarding the mediating role of flow experience in explaining the relationship between digital marketing stimuli and purchase intention. While several studies have reported that flow experience positively mediates the effects of digital interactions on behavioral outcomes, Chang and Yu (2023) found that immersion, as one dimension of flow, did not consistently mediate the relationship between gamification and purchase intention. Similarly, Liem and Firdausy (2024) reported that streamer expertise exerted a stronger influence on purchase intention than flow experience in certain contexts. These inconsistent findings indicate the need to re-examine flow experience as a central mediating mechanism linking multiple digital marketing stimuli to consumers' purchase intentions.

Finally, empirical evidence from emerging markets, particularly Indonesia, remains relatively limited compared with the literature dominated by studies conducted in China. Although local studies have begun to emerge, such as those by Sunanto (2024) in West Java and Herman and Amelinda (2025) in Jakarta, research specifically examining Generation Z consumers across broader and more diverse geographical regions, such as Priangan Timur, is still lacking. Addressing this gap is theoretically significant because it extends the external validity of the SOR framework while providing a deeper understanding of how the psychological mechanism of flow experience operates among one of Indonesia's most technologically adaptive consumer segments. Accordingly, this study integrates gamification, live streaming, and social influence into a unified SOR framework to investigate their direct and indirect effects on Generation Z's purchase intention through the mediating role of flow experience. Accordingly, this study seeks to address these gaps by examining the effects of gamification, live streaming, and social influence on purchase intention through the mediating role of flow experience among Generation Z consumers in the Eastern Priangan region.

From a contextual perspective, this study contributes empirical evidence from Indonesia, an emerging market that remains underrepresented in the existing literature, by focusing on Generation Z consumers in the Priangan Timur region. This population is characterized by high digital engagement and a strong preference for interactive and immersive online shopping experiences. By integrating gamification features, live streaming interactions, and social influence into a single analytical framework, the study provides new empirical insights into the shoppertainment phenomenon. The findings demonstrate that real-time interaction, game-based engagement, and social influence collectively foster flow experience, which subsequently strengthens consumers' purchase intention. These findings not only extend the applicability of the SOR framework in the context of digital commerce but also offer practical implications for designing experience-based marketing strategies in rapidly growing emerging markets. Therefore, this study aims to examine the effects of gamification, live streaming, and social influence on purchase intention through the mediating role of flow experience among Generation Z consumers in the Eastern Priangan region.

LITERATURE REVIEW

Purchase Intention

Purchase intention refers to an individual's willingness or conscious plan to purchase a product or service in the future and is considered one of the strongest predictors of actual purchasing behavior (Wu et al., 2023).

Gamification and Flow Experience.

Gamification refers to the application of game-design elements such as points, badges, leaderboards, challenges, and rewards in non-game environments to enhance engagement and motivation (Wilk Oliveira et al., 2021). Interactive and rewarding experiences generated through gamification encourage consumers to become more focused and emotionally engaged during online shopping activities.

H1: Gamification positively influences flow experience.

Live Streaming and Flow Experience.

Live streaming enables real-time communication between sellers and consumers, allowing consumers to observe product demonstrations, ask questions, and receive immediate responses (Liu et al., 2022). These interactions enhance consumers' involvement and immersion during online shopping.

H2: Live streaming positively influences flow experience.

Social Influence and Flow Experience.

Social influence refers to the extent to which individuals' attitudes, beliefs, and behaviors are shaped by others, including peers, influencers, and online communities (Karimah et al., 2022). Positive social interactions and recommendations may strengthen consumers' emotional engagement and confidence while shopping online.

H3: Social influence positively influences flow experience.

Flow Experience and Purchase Intention.

Flow experience is a psychological state characterized by concentration, enjoyment, and complete immersion in an activity. Consumers experiencing flow are more likely to develop favorable attitudes and stronger purchase intentions (Lawrence & Meivitananli, 2023; Jiang et al., 2024).

H4: Flow experience positively influences purchase intention.

Mediating Role of Flow Experience.

Within the S-O-R framework, flow experience serves as the organism component that translates external stimuli into behavioral responses.

H5: Flow experience mediates the relationship between gamification and purchase intention.

H6: Flow experience mediates the relationship between live streaming and purchase intention.

H7: Flow experience mediates the relationship between social influence and purchase intention.

Table 1. Previous Research

Author(s) & Year	Title	Research Findings
Salvatierra Melgar et al. (2022)	Metric Properties of a Gamification Scale in University Students	The findings indicate that the gamification scale for university students is both valid and reliable for use in academic settings.
Liu et al. (2022)	The Effects of Tourism E-Commerce Live Streaming Features on Consumer Purchase Intention: The Mediating Roles of Flow Experience and Trust	The study shows that to enhance consumer purchase intention in tourism-based e-commerce live streaming, emphasis should be placed on improving interactivity and authenticity, creating positive user experiences, and building trust.
Wilk Oliveira et al. (2021)	Does Gamification Affect Flow Experience? A Systematic Literature Review	Various gamification methods and elements have been used to induce flow experience. However, there is no consensus regarding which specific methods or elements should be applied. The only consistent agreement is the use of questionnaires to analyze flow experience in gamified contexts, while other methods such as interviews and interaction data analysis are rarely employed.
Zheng (2023)	The Relationship Between Flow Experience, Participative Behavior, and Sharing Behavior in Short Online Videos	Flow experience has a significant impact on participative behavior and sharing behavior in short online video platforms. Further analysis indicates that flow experience, social norms, perceived critical mass, and both participative and sharing behaviors form three clusters of mediating relationships.
Herman and Amelinda (2025)	The Role of Streamer Attractiveness and Expertise on Purchase Intention through Flow Experience	Streamer attractiveness and expertise significantly influence flow experience and purchase intention. Additionally, flow experience mediates the relationship between streamer attractiveness/expertise and purchase intention.
Karimah et al. (2022)	The Effect of Social Influence on Students' Purchase Decisions on the Shopee Marketplace	The analysis shows a positive and significant effect of social influence on students' purchase decisions on the Shopee marketplace.
Chen et al. (2022)	Understanding Consumers' Purchase Intention and Gift-Giving in Live Streaming Commerce: Findings from SEM and FSQCA	The study provides insights into consumer behavior within live streaming commerce and identifies the factors influencing purchase intention and gift-giving behavior.

Source: Proposed previous research (2025)

Table 1 below provides a comparative review of previous studies relevant to this research. The table demonstrates that existing studies have predominantly focused on the individual effects of gamification, live streaming, or social influence on consumer behavior, with limited attention to their simultaneous integration within a unified Stimulus–Organism–Response (SOR) framework. Furthermore, the mediating role of flow experience has received inconsistent empirical support, particularly in emerging markets. These observations establish the theoretical and empirical basis for the proposed research model.

The research paradigm of this study is illustrated in Figure 3.

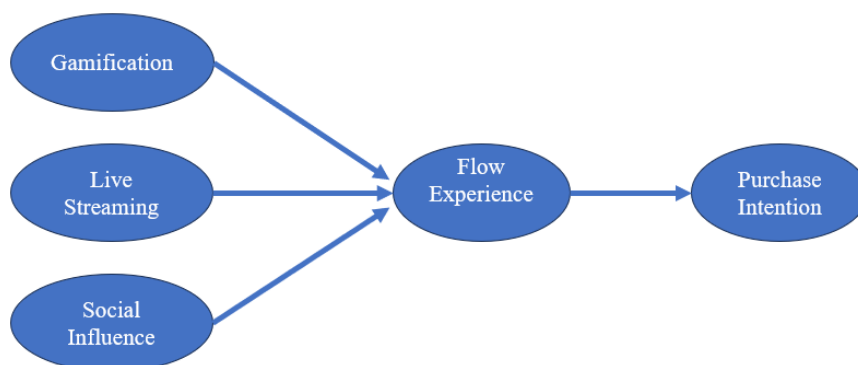


Figure 3. Research Framework
Source: Proposed previous research (2025)

Figure 3 illustrates the proposed conceptual framework grounded in the Stimulus–Organism–Response (SOR) theory. In this framework, gamification, live streaming, and social influence function as external stimuli (S) that shape consumers' internal psychological state, represented by flow experience (O). Flow experience subsequently influences purchase intention (R) and is proposed to mediate the effects of the three digital marketing stimuli on consumers' behavioral intentions.

METHODS

This study employed a quantitative research design using a cross-sectional survey method. The target population comprised Generation Z consumers residing in the Eastern Priangan region of Indonesia who had prior experience purchasing products through e-commerce platforms. A purposive sampling technique was employed to ensure that respondents met the predefined inclusion criteria. Specifically, respondents were required to (1) belong to Generation Z (aged 17–27 years), (2) reside in the Eastern Priangan region, (3) have made at least one purchase through an e-commerce platform within the last six months, and (4) be familiar with digital shopping features, including live streaming, gamification, or social media interactions.

The sample size was determined based on the recommendation of Hair et al. (2017), who suggest that an appropriate sample size for Structural Equation Modeling ranges from 100 to 200 respondents. To improve the robustness, statistical power, and accuracy of the analysis, questionnaires were distributed to 400 eligible respondents.

Data were collected using a structured online questionnaire. All measurement items were adapted from previously validated scales reported in the literature to ensure content validity. Gamification was measured using 7 items adapted from Chang and Yu (2023), live streaming using 6 items adapted from Zheng, at all (2023), social influence was measured using five items adapted from Long et al. (2024), flow experience using 7 items adapted from Liu and Chen (2022), and purchase intention using 4 items adapted from Liu et al. (2022). All constructs were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Examples of the measurement indicators include the perceived enjoyment of gamification features, interactivity during live-streaming sessions, peer influence on purchasing decisions, immersion while shopping online, and the intention to purchase products through e-commerce platforms.

The collected data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS software. The analysis was conducted in two stages. First, the measurement model (outer model) was evaluated by assessing indicator reliability (outer loadings ≥ 0.70), internal consistency reliability using

Cronbach's Alpha and Composite Reliability ($CR \geq 0.70$), convergent validity using Average Variance Extracted ($AVE \geq 0.50$), and discriminant validity using the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio ($HTMT < 0.90$). Second, the structural model (inner model) was evaluated by examining collinearity using the Variance Inflation Factor ($VIF < 5$), the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and hypothesis testing using the bootstrapping procedure with 5,000 resamples. Statistical significance was determined based on t-values greater than 1.96 and p-values less than 0.05.

RESULTS AND DISCUSSION

Measurement Model Evaluation

As presented in Table 2, the measurement model demonstrates satisfactory convergent validity and internal consistency reliability. All indicator loadings exceed the recommended minimum threshold of 0.60, ranging from 0.62 to 0.89. In addition, Composite Reliability (CR) values range from 0.87 to 0.92, indicating strong internal consistency among the measurement items. The Average Variance Extracted (AVE) values, ranging from 0.56 to 0.63, are all greater than the recommended cutoff value of 0.50, confirming that each construct explains more than 50% of the variance in its respective indicators. Therefore, the measurement model satisfies the recommended criteria for convergent validity and reliability, supporting its suitability for structural model evaluation.

Table 2. Convergent Validity and Reliability Results

Construc	Loading Factor	CR	AVE	Value
Gamification	0,62– 0,81	0,87	0,56	Valid & Reliable
Live Streaming	0,65 – 0,88	0,91	0,60	Valid & Reliable
Social Influence	0,68 – 0,84	0,89	0,58	Valid & Reliable
Flow Experience	0,70 – 0,89	0,92	0,63	Valid & Reliable
Purchase Intention	0,66 – 0,86	0,90	0,59	Valid & Reliable

Source: Authors' own calculation based on survey data (2025)

Structural Model Evaluation

The structural model evaluation revealed that gamification, live streaming, and social influence significantly influence flow experience. In addition, flow experience significantly influences purchase intention. The results of the hypothesis testing are presented in the following table:

Table 3. Hypothesis Testing Results

Variable	Estimate	S.E.	C.R.	P
Y ← X1	,374	,048	7,797	***
Y ← X2	,598	,047	12,723	***
Y ← X3	,528	,053	9,969	***
Z ← Y	,725	,062	11,758	***

Source: Authors' own calculation based on survey data (2025)

Based on Table 3, it can be seen that the three stimulus variables, Gamification, Live Streaming, and Social Influence, have a positive and significant effect on Flow Experience. Within the Stimulus–Organism–Response (SOR) framework, these variables function as stimuli (S) that shape users' internal states (organism), namely Flow Experience, which subsequently drives the response (R) in the form of Purchase Intention.

The findings of this study are consistent with Liu et al. (2022), who highlighted that interactivity and authenticity in live streaming enhance consumer engagement and foster a state of flow. Similarly, gamification elements—such as rewards, challenges, and game-like mechanisms—have been shown to increase users' focus, enjoyment, and sense of control in e-commerce environments (Xu et al., 2020; García-Jurado et al., 2021). Furthermore, social influence originating from peers, online communities, or influencers strengthens social connectedness and enhances the relevance of the shopping experience, as evidenced by Álvarez Santamaría et al. (2024). Thus, these digital stimuli effectively create an immersive flow experience, particularly among Generation Z consumers, who tend to be highly responsive to interactivity, entertainment, and social cues within online shopping environments.

Moreover, the indirect effects analysis shows that Flow Experience mediates the influence of Gamification, Live Streaming, and Social Influence on Purchase Intention. This indicates that these digital stimuli contribute to consumers' purchase intention not only directly but also by shaping an immersive and enjoyable internal state that enhances their motivation to buy.

Table 4. Indirect Effects

Indirect Path	Indirect Effect
Gamification (X1) → Flow (Y) → Purchase Intention (Z)	0.240
Live Streaming (X2) → Flow (Y) → Purchase Intention (Z)	0.430
Social Influence (X3) → Flow (Y) → Purchase Intention (Z)	0.341

Source: Authors' own calculation based on survey data (2025)

Table 4 reports the indirect effects of the proposed mediation model. The findings reveal that flow experience mediates the effects of gamification, live streaming, and social influence on purchase intention. Among the three indirect paths, live streaming, flow experience, and purchase intention exhibit the strongest effect ($\beta = 0.430$), followed by social influence ($\beta = 0.341$) and gamification ($\beta = 0.240$). These findings indicate that enhancing consumers' flow experience is an effective mechanism through which digital marketing stimuli influence purchase intention. Consequently, the proposed mediation hypotheses are supported, with live streaming emerging as the most influential antecedent of purchase intention through flow experience.

Overall, these results strengthen the validity of the Stimulus–Organism–Response (S–O–R) model within the digital commerce context, wherein stimuli (gamification, live streaming, and social influence) shape the organism (flow experience), which subsequently generates the behavioral response (purchase intention).

The findings indicate that gamification positively influences flow experience by creating interactive and enjoyable shopping environments. This result is consistent with previous studies demonstrating that gamification enhances user engagement, enjoyment, and immersion during online shopping. Gamified elements such as point systems, achievement badges, reward programs, and interactive challenges encourage consumers to actively participate in shopping activities, thereby increasing their psychological involvement and creating a more enjoyable purchasing experience.

The significant effect of live streaming on flow experience highlights the importance of real-time interaction in fostering immersive online shopping experiences. Consumers become more engaged in the purchasing process when they can directly communicate with sellers, receive immediate responses to inquiries, and observe product demonstrations in real time. The strong indirect effect of live streaming further suggests that it is the most influential digital marketing stimulus in shaping consumers' purchase intention through flow experience. From a managerial perspective, e-

commerce platforms should invest in interactive live-streaming features by collaborating with credible hosts and influencers, incorporating real-time product demonstrations, enabling instant customer interaction, and integrating limited-time promotions or exclusive offers during live broadcasts to maximize consumer engagement and conversion rates.

The results also demonstrate that social influence significantly enhances flow experience. Recommendations from peers, influencers, and online communities strengthen consumers' emotional engagement, trust, and confidence during online shopping. Therefore, practitioners should develop strategies that encourage user-generated content, customer reviews, referral programs, influencer partnerships, and online community engagement to amplify positive social influence and strengthen consumers' shopping experiences.

Furthermore, flow experience positively influences purchase intention. Consumers who experience greater enjoyment, concentration, and immersion while shopping online are more likely to develop stronger purchase intentions. Consequently, e-commerce managers should prioritize designing seamless and engaging user experiences by improving platform usability, personalized recommendations, intuitive navigation, and interactive shopping environments that minimize distractions while maximizing consumer immersion.

Finally, the mediation analysis confirms that flow experience serves as an important psychological mechanism through which gamification, live streaming, and social influence influence purchase intention, thereby supporting the Stimulus–Organism–Response (SOR) framework. These findings extend the application of the SOR model in digital commerce by demonstrating that multiple digital marketing stimuli jointly influence consumers' internal psychological states before shaping behavioral intentions. The results also provide practical guidance for e-commerce practitioners in developing integrated digital marketing strategies that combine gamification features, interactive live-streaming commerce, and social influence mechanisms to enhance customer engagement and stimulate purchase intention among Generation Z consumers.

CONCLUSION

This study demonstrates that gamification, live streaming, and social influence positively influence Generation Z's purchase intention through the mediating role of flow experience within the Stimulus–Organism–Response (SOR) framework. Among the three digital marketing stimuli, live streaming exhibits the strongest indirect effect, highlighting the importance of interactive and immersive shopping experiences in stimulating purchase intention. These findings contribute to the digital marketing literature by integrating three contemporary digital stimuli into a unified SOR model while establishing flow experience as the key psychological mechanism underlying consumers' purchase decisions. Nevertheless, this study has several limitations. First, the cross-sectional research design limits the ability to establish causal relationships among the variables. Second, the sample was restricted to Generation Z consumers in the Eastern Priangan region, which may limit the generalizability of the findings to other geographical and cultural contexts. Third, the study relied on self-reported data, which may be subject to common method bias and social desirability bias. Therefore, future research is encouraged to conduct cross-country comparative studies, perform multi-group analyses across different generations or demographic segments, employ longitudinal or experimental research designs to establish causal relationships, and incorporate emerging variables such as AI-powered personalization, perceived trust, and perceived enjoyment to further extend the explanatory power of the proposed model.

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