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Live Streaming Commerce Interactivity and Social Presence in Driving Impulsive Buying through Perceived Enjoyment among Generation Z Consumers

Elvira Sitna Hajar[1*], Syarif[2], Asep Surya Lesmana[3]
[1-3]Sekolah Tinggi Ilmu Ekonomi Ganesha, Indonesia
Email: elvira@stieganesha.ac.id [1], Syarif@stieganesha.ac.id [2], asepsuryalesmana70@gmail.com [3]
**Corresponding Author: elvira@stieganesha.ac.id*

Abstract. The rapid development of live streaming commerce has transformed online shopping behavior by integrating real-time interaction, social engagement, and entertainment into a single digital shopping environment. This study aims to examine the influence of live streaming commerce interactivity and social presence on impulsive buying through the mediating role of perceived enjoyment among Generation Z consumers. This research employed a quantitative approach with an explanatory research design. Data were collected through questionnaires distributed to 120 Generation Z consumers who had watched and purchased products through live-shopping features. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) by evaluating the measurement model and structural model. The results indicate that live streaming commerce interactivity and social presence positively and significantly influence perceived enjoyment. Furthermore, both variables also have a direct positive effect on impulsive buying, while perceived enjoyment demonstrates the strongest influence on spontaneous purchasing behavior. The mediation analysis confirms that perceived enjoyment partially mediates the relationship between interactivity and social presence with impulsive buying. These findings support the Stimulus–Organism–Response (S-O-R) framework by demonstrating that technological and social stimuli within live-commerce environments shape consumers' emotional experiences, which subsequently influence purchasing responses. This study provides practical implications for live-commerce platforms and sellers to enhance interactive features, social engagement, and enjoyable shopping experiences to encourage consumer involvement and purchasing decisions.

Keywords: Generation Z; Impulsive Buying; Live Streaming Commerce; Perceived Enjoyment; Social Presence.

1. INTRODUCTION

The rapid transformation of digital commerce has accelerated the development of *social commerce*, which integrates commercial transactions with social interactions across digital platforms. Unlike conventional *e-commerce*, *social commerce* enables consumers to communicate with sellers, exchange experiences, obtain recommendations, and use social support when making purchase decisions. Ho and Cheng (2020) demonstrated that social support and relationship quality play important roles in shaping user behavior on social media. In commercial contexts, social support can also strengthen consumer trust and subsequently influence purchase decisions (Chanadya et al., 2020). Consequently, *social commerce* has transformed consumers from passive information recipients into active participants who contribute to increasingly interactive and socially connected digital shopping environments.

The evolution of *social commerce* has subsequently encouraged the emergence of *live streaming commerce* (LSC), which integrates live video broadcasting, product presentation, entertainment, real-time communication, and purchasing transactions within a single digital environment. Nuraisah et al. (2024) describe LSC as a form of *shoppertainment* because it combines commercial activities with entertaining experiences that enhance consumer

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engagement. Through this format, consumers can observe product demonstrations, ask questions, and immediately receive responses from streamers. The quality of the LSC experience is also influenced by interface design and the ability of platforms to facilitate effective interactions between users and commercial content (Shin et al., 2024). These characteristics distinguish LSC from conventional online shopping by creating a more dynamic, immersive, and socially interactive purchasing experience.

The growing prominence of LSC is particularly relevant to Generation Z, a consumer group that has grown up alongside the expansion of the internet, social media, and digital technologies. Their familiarity with technology encourages them to search for information, compare products, interact with digital content, and consider social influences before making purchasing decisions. Kahawandala et al. (2020) demonstrated that Generation Z's purchasing behavior is closely associated with the characteristics of contemporary digital environments. More recent evidence indicates that their online purchasing decisions are influenced by various technological, social, and behavioral factors (Ridwan et al., 2025). Within *social commerce*, *live streaming* has therefore become particularly relevant because its interactive features can influence the purchase intentions of Generation Z consumers (Fairistha et al., 2023).

A distinguishing characteristic of LSC is *interactivity*, which enables reciprocal communication among streamers, consumers, and other viewers during a live session. Consumers can ask questions, request additional product information, respond to content, and receive immediate feedback, creating an experience that differs substantially from static online shopping. Such interaction can strengthen consumer involvement and generate a deeper sense of immersion during shopping activities. Joo and Yang (2023) demonstrated that *perceived interactivity* affects consumers' shopping intentions through psychological mechanisms such as immersion and user gratification. Consequently, *live streaming commerce interactivity* can function as an important environmental stimulus that encourages consumers to become more emotionally engaged and responsive to products, promotions, and recommendations presented during live-streaming sessions.

Another important psychological mechanism in LSC is *social presence*, referring to consumers' perception of the presence, closeness, and interpersonal warmth of others within technology-mediated environments. Real-time communication allows viewers to experience streamers and other consumers as socially present, thereby reducing the psychological distance commonly associated with online transactions. Ming et al. (2021) demonstrated that *social presence* represents an important stimulus influencing psychological responses and impulsive buying behavior in LSC. A stronger perception of interpersonal connection can therefore

increase engagement and create a socially immersive shopping atmosphere. More recent findings also indicate that *social presence*, together with streamer characteristics, contributes to consumers' impulsive purchasing tendencies in live-commerce environments (Dang & Hoang, 2025).

Beyond interactivity and *social presence*, *perceived enjoyment* provides an important emotional mechanism through which LSC experiences may encourage *impulsive buying*. Enjoyment emerges when consumers perceive live-shopping activities as entertaining, pleasurable, and intrinsically satisfying. The characterization of LSC as *shoppertainment* demonstrates that entertainment value has become an integral component of contemporary live-shopping experiences (Nuraisah et al., 2024). Interactivity can further generate gratification and immersive experiences that encourage consumers to remain involved in shopping activities (Joo & Yang, 2023). As positive emotional experiences intensify, consumers may become increasingly responsive to situational purchasing stimuli. Such conditions can facilitate spontaneous purchasing decisions because enjoyable and immersive shopping experiences may increase consumers' susceptibility to impulsive responses during live-streaming sessions (Zhang et al., 2023).

Previous studies have identified several mechanisms underlying consumer behavior in LSC, although these relationships have generally been examined through different conceptual configurations. Ming et al. (2021) emphasized *social presence* in explaining impulsive buying through the S-O-R framework, whereas Joo and Yang (2023) examined *perceived interactivity* through immersion, user gratification, and product involvement. Dang and Hoang (2025) subsequently investigated streamer characteristics and *social presence* by incorporating self-efficacy as a moderator. These different perspectives leave room for an integrated explanation of how LSC interactivity and *social presence* stimulate *impulsive buying* through the emotional mechanism of *perceived enjoyment*, particularly among Generation Z consumers. Accordingly, this study examines the effects of *live streaming commerce interactivity* and *social presence* on *impulsive buying*, with *perceived enjoyment* serving as a mediating variable among Generation Z consumers.

2. LITERATURE REVIEW

Generation Z and Live Streaming Commerce

Generation Z represents an important consumer segment whose purchasing behavior is closely associated with digital technologies, social media, and interactive online environments. Having grown up with extensive access to digital platforms, these consumers are accustomed

to searching for information, interacting with brands, and evaluating products through digitally mediated experiences. Their preferences also tend to emphasize emotional and experiential elements rather than relying exclusively on conventional brand attributes. Jiang et al. (2021) demonstrate that nostalgia-oriented digital design can attract Generation Z consumers, indicating the relevance of emotional experiences in shaping their responses. These characteristics make Generation Z particularly relevant for examining consumer behavior within interactive digital commerce environments.

The development of social commerce has facilitated the emergence of live streaming commerce (LSC), which combines real-time broadcasting, product demonstrations, social interaction, entertainment, and purchasing activities. Unlike conventional e-commerce, LSC allows consumers to communicate directly with streamers while simultaneously observing products and interacting with other viewers. Li et al. (2023) found that characteristics of live-streaming environments influence purchase intentions through psychological mechanisms involving presence and perceived trust. Streamer communication is also important because different interaction styles can produce different consumer responses (Zhang et al., 2024). Therefore, LSC provides a highly interactive environment in which technological, social, and emotional experiences collectively influence consumer decision-making.

Live Streaming Commerce Interactivity

Live streaming commerce interactivity refers to the extent to which consumers can participate in reciprocal and immediate communication during live-shopping sessions. Consumers can ask questions, submit comments, request demonstrations, and obtain real-time responses from streamers. These mechanisms transform viewers from passive recipients into active participants and can strengthen their involvement in shopping activities. Zhang et al. (2024) demonstrate that streamer interaction styles significantly influence consumer responses in live-streaming e-commerce. Consequently, higher levels of interactivity may create a more personalized and responsive shopping environment, increasing consumers' psychological involvement and encouraging them to remain engaged with products, streamers, and promotional messages presented throughout the live session.

Interactivity can also generate positive emotional experiences because immediate communication provides consumers with greater involvement and responsiveness during shopping. When streamers respond directly to viewers, consumers may perceive the activity as more enjoyable, entertaining, and personally meaningful. Such emotional stimulation may subsequently increase consumers' responsiveness to purchasing opportunities. Simanjuntak et al. (2023) demonstrate that characteristics of live-streaming e-commerce environments

contribute to impulse buying behavior. Therefore, LSC interactivity can be conceptualized as an environmental stimulus capable of influencing both emotional and behavioral responses. In this study, interactivity is expected to encourage impulsive buying directly and indirectly through the positive emotional experience represented by perceived enjoyment.

Social Presence

Social presence refers to consumers' perception that other individuals are socially and psychologically present within technology-mediated interactions. LSC can create this perception through streamers' visual presence, voice, immediate responses, and interactions among viewers. These characteristics reduce the psychological distance commonly experienced in conventional online shopping and create a stronger sense of interpersonal connection. Li and Hua (2022) demonstrate that social presence contributes to consumer purchase intentions by strengthening social learning processes. Similarly, presence constitutes an important psychological mechanism through which characteristics of live-streaming environments influence purchasing decisions (Li et al., 2023). Thus, social presence transforms digital shopping into a more socially engaging experience.

The influence of social presence may also extend to spontaneous purchasing decisions. Consumers who perceive greater interpersonal closeness may become more emotionally engaged with streamers and more responsive to recommendations or promotional stimuli during live sessions. Zhang and Shi (2022) demonstrate that social presence influences impulsive buying behavior in online shopping, suggesting that socially rich environments can encourage unplanned purchases. Within LSC, this mechanism may become stronger because social interaction and commercial stimuli occur simultaneously. Accordingly, social presence is positioned as an environmental stimulus that can directly encourage impulsive buying while also generating positive emotional experiences that may increase perceived enjoyment during live-shopping activities.

Perceived Enjoyment

Perceived enjoyment reflects the pleasure, entertainment, and intrinsic satisfaction experienced by consumers while participating in digital shopping activities. In LSC, enjoyment may arise from entertaining presentations, product demonstrations, real-time communication, and social interactions. These elements transform shopping from a purely functional activity into an engaging experience that provides emotional gratification. Evangelin et al. (2021) demonstrate that hedonic motivation contributes to online impulsive buying behavior, highlighting the importance of pleasurable experiences in spontaneous consumption. Therefore, consumers who perceive live-streaming sessions as enjoyable may become more

engaged with the shopping process and increasingly receptive to commercial stimuli presented during the broadcast. In this study, perceived enjoyment is positioned as an emotional mechanism connecting LSC interactivity and social presence with impulsive buying. Interactive communication may generate enjoyment by making consumers feel actively involved, while social presence may enhance enjoyment through feelings of interpersonal connection. Positive emotional experiences can subsequently encourage consumers to prioritize immediate gratification over extensive purchase deliberation. Cuong (2023) indicates that psychological and contextual mechanisms are important determinants of online impulsive buying behavior. Therefore, perceived enjoyment provides an appropriate mechanism for explaining how technological and social characteristics of live-streaming environments can be translated into spontaneous purchasing responses among Generation Z consumers.

Impulsive Buying

Impulsive buying refers to spontaneous purchasing behavior characterized by an immediate desire to acquire a product without extensive prior planning or deliberate evaluation. Online shopping environments facilitate this behavior because consumers can rapidly access product information and complete transactions with minimal effort. In LSC, the potential for impulsive purchasing may become greater because product demonstrations, promotions, streamer recommendations, and social interactions are simultaneously presented to consumers. Simanjuntak et al. (2023) identify several factors within live-streaming e-commerce platforms that contribute to impulse buying behavior, demonstrating that the characteristics of this environment can stimulate consumers to make rapid and unplanned purchasing decisions.

Emotional processes are particularly important in explaining impulsive buying because spontaneous decisions frequently occur when consumers experience heightened positive affect. Hedonic motivation has been shown to contribute to online impulsive purchasing, indicating that pleasurable experiences can stimulate immediate consumption (Evangelin et al., 2021). Social presence also influences consumers' impulsive buying behavior by strengthening the social dimension of online shopping (Zhang & Shi, 2022). These findings suggest that impulsive purchasing in LSC should not be explained solely by promotional incentives. Instead, it can emerge through the combined influence of interactive environmental stimuli, social experiences, and positive emotional responses generated during live-shopping sessions.

Stimulus–Organism–Response Framework and Research Positioning

The Stimulus–Organism–Response (S-O-R) framework explains how environmental stimuli influence individuals' internal psychological conditions and subsequently produce behavioral responses. The framework distinguishes external environmental characteristics as

stimuli, cognitive or emotional states as the organism, and resulting behavior as the response. Manthiou et al. (2017) demonstrate the applicability of the extended Mehrabian–Russell perspective for explaining relationships between environmental experiences and consumer responses. Applied to this study, LSC interactivity and social presence represent the stimulus components, while perceived enjoyment represents the organism because it reflects consumers' positive emotional experiences. Finally, impulsive buying represents the behavioral response generated by these environmental and psychological mechanisms.

Previous studies have separately demonstrated the importance of live-streaming environmental characteristics, social experiences, and emotional mechanisms in consumer behavior. Li et al. (2023) emphasize presence and trust in explaining purchase intentions, whereas Zhang et al. (2024) highlight the importance of streamer interaction styles. Research on spontaneous consumption further demonstrates that live-streaming environments can stimulate impulse buying (Simanjuntak et al., 2023). Building on these findings, this study integrates LSC interactivity and social presence as stimuli and perceived enjoyment as a mediating organism that leads to impulsive buying. This framework provides a more integrated explanation of spontaneous purchasing behavior among Generation Z consumers within contemporary live-streaming commerce environments.

3. RESEARCH METHODS

This study employed a quantitative approach with an explanatory research design to examine the relationships among live streaming commerce interactivity, social presence, perceived enjoyment, and impulsive buying. The population consisted of Generation Z consumers with experience in live streaming commerce. A total of 120 respondents were selected using purposive sampling. Eligible respondents were required to belong to Generation Z, have watched live-shopping sessions, and have previously purchased products through live shopping features. Primary data were collected using a structured questionnaire with a Likert scale. The instrument measured LSC interactivity, social presence, perceived enjoyment, and impulsive buying based on respondents' experiences during live-shopping activities.

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The measurement model (outer model) was evaluated to establish validity and reliability through outer loadings, Average Variance Extracted (AVE), discriminant validity, Cronbach's alpha, and composite reliability. Subsequently, the structural model (inner model) was assessed using the coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2). Hypotheses were tested using a bootstrapping procedure by examining path coefficients, t-

statistics, and p-values. The analysis examined direct and indirect relationships among the constructs. Mediation testing was performed to determine whether perceived enjoyment mediates the effects of LSC interactivity and social presence on impulsive buying among Generation Z consumers.

4. RESULTS AND DISCUSSION

Results

The study involved 120 Generation Z consumers who had experience watching *live streaming commerce* and purchasing products through live-shopping features. The results are presented by first describing respondents' live-commerce usage patterns, followed by descriptive statistics of the research constructs. The PLS-SEM analysis was then conducted through measurement model (*outer model*) and structural model (*inner model*) assessments. The measurement model evaluated convergent validity, discriminant validity, and construct reliability, while the structural model examined explanatory power, predictive relevance, effect sizes, and relationships among the constructs. Finally, direct and indirect effects were evaluated to determine the mediating role of *perceived enjoyment*.

Table 1. Characteristics of Live Commerce Usage.

Characteristic	Category	Frequency	Percentage (%)
Platform	TikTok Shop	66	55.0
	Shopee Live	39	32.5
	Tokopedia Play	9	7.5
	Others	6	5.0
Viewing frequency	1–2 times/week	38	31.7
	3–5 times/week	48	40.0
	>5 times/week	22	18.3
	Occasionally	12	10.0
Transaction frequency	1–2 times/month	52	43.3
	3–5 times/month	41	34.2
	>5 times/month	27	22.5

Table 1 shows that TikTok Shop was the most frequently used platform, accounting for 55.0% of respondents, followed by Shopee Live at 32.5%. Regarding viewing frequency, 40.0% of respondents watched live-shopping sessions three to five times per week, while 18.3% watched more than five times weekly. In terms of purchasing frequency, 43.3% completed one or two transactions per month, while 34.2% purchased three to five times. These findings indicate that the respondents had substantial exposure to live-commerce activities and sufficient experience with live-shopping transactions, making them appropriate for evaluating the constructs examined in this study. Product categories were subsequently examined to identify respondents' purchasing patterns within live-commerce environments. Product characteristics are relevant because live streaming allows consumers to observe

demonstrations, receive explanations, and interact directly with streamers before completing transactions. Products that depend strongly on visual appearance and demonstrations may therefore receive greater consumer attention. Figure 1 presents the categories most frequently purchased by respondents through live-shopping features.

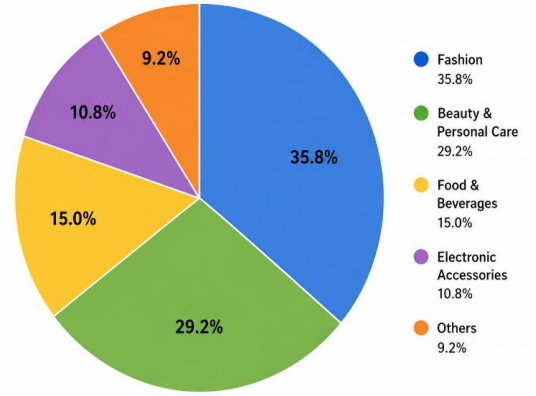


Figure 1. Product Categories Most Frequently Purchased through Live Commerce.

Figure 1 shows that fashion represented the largest product category at 35.8%, followed by beauty and personal care at 29.2%. Food and beverages accounted for 15.0%, electronic accessories represented 10.8%, and other products accounted for 9.2%. Fashion and beauty products therefore represented approximately two-thirds of respondents' most frequently purchased categories. This distribution indicates the prominence of visually demonstrable products within Generation Z's live-shopping activities. Such products can be presented dynamically through live demonstrations, enabling consumers to observe product appearance and usage while simultaneously interacting with streamers before making purchasing decisions.

Descriptive Statistics

Descriptive analysis was conducted to provide an overview of respondents' evaluations of LSC interactivity, social presence, perceived enjoyment, and impulsive buying. Mean values were used to identify the general tendency of responses, while standard deviations reflected variation in respondents' evaluations. These results provide preliminary information regarding consumers' perceptions and behavioral tendencies before evaluating the measurement and structural models. Table 2 presents the descriptive statistics for the four research constructs.

Table 2. Descriptive Statistics of Research Constructs.

Construct	Mean	Standard Deviation	Interpretation
LSC Interactivity	4.08	0.61	High
Social Presence	3.96	0.65	High
Perceived Enjoyment	4.15	0.58	High
Impulsive Buying	3.87	0.69	High

Table 2 demonstrates that all constructs obtained relatively high mean scores. Perceived enjoyment recorded the highest mean (M = 4.15), followed by LSC interactivity (M = 4.08), social presence (M = 3.96), and impulsive buying (M = 3.87). These findings indicate that respondents generally perceived live-shopping activities as interactive, socially engaging, and enjoyable. The relatively high level of impulsive buying also indicates that respondents exhibited tendencies toward spontaneous purchasing during live-commerce activities. The particularly high perceived enjoyment score suggests that emotional pleasure constitutes a prominent component of Generation Z consumers' experiences within live-shopping environments.

Outer Model Evaluation

The measurement model was evaluated to determine whether the indicators appropriately measured their respective constructs. Convergent validity was assessed using outer loading and Average Variance Extracted (AVE), while internal consistency reliability was evaluated using Cronbach's alpha and composite reliability. Indicator loading values above 0.70 and AVE values above 0.50 indicate satisfactory convergent validity. Cronbach's alpha and composite reliability values above 0.70 indicate adequate internal consistency. The results of the measurement model evaluation are presented in Table 3.

Table 3. Convergent Validity and Construct Reliability.

Construct	Loading Range	Cronbach's Alpha	Composite Reliability	AVE	Result
LSC Interactivity	0.742–0.876	0.821	0.881	0.649	Valid and reliable
Social Presence	0.731–0.864	0.808	0.868	0.621	Valid and reliable
Perceived Enjoyment	0.769–0.891	0.849	0.897	0.686	Valid and reliable
Impulsive Buying	0.718–0.887	0.836	0.892	0.674	Valid and reliable

Table 3 shows that all indicator loading values exceeded 0.70, ranging between 0.718 and 0.891. The AVE values ranged from 0.621 to 0.686 and therefore exceeded the minimum criterion of 0.50. Cronbach's alpha values ranged from 0.808 to 0.849, while composite reliability values ranged from 0.868 to 0.897. These results demonstrate satisfactory convergent validity and internal consistency reliability for all constructs. Therefore, the indicators used to measure LSC interactivity, social presence, perceived enjoyment, and impulsive buying were considered appropriate for further structural model analysis. Discriminant validity was additionally evaluated using the Heterotrait-Monotrait ratio (HTMT) to determine whether each construct represented a concept empirically distinct from the other constructs. HTMT values below 0.90 indicate satisfactory discriminant validity. This assessment is particularly important because several constructs in the proposed model describe

related aspects of consumers' live-shopping experiences. Table 4 presents the HTMT values obtained for the research constructs.

Table 4. Discriminant Validity Using HTMT.

Construct	LSC Interactivity	Social Presence	Perceived Enjoyment	Impulsive Buying
LSC Interactivity	—			
Social Presence	0.712	—		
Perceived Enjoyment	0.781	0.754	—	
Impulsive Buying	0.694	0.681	0.806	—

Table 4 indicates that all HTMT values were below 0.90, ranging from 0.681 to 0.806. The highest value was observed between perceived enjoyment and impulsive buying (0.806), whereas the lowest was found between social presence and impulsive buying (0.681). Therefore, satisfactory discriminant validity was established for all constructs. Combined with the convergent validity and reliability results, the findings confirm that the measurement model fulfilled the required assessment criteria and that each construct represented a sufficiently distinct dimension of consumers' live-commerce experiences.

Inner Model Evaluation

After confirming the adequacy of the measurement model, the structural model was evaluated using the coefficient of determination (R^2), predictive relevance (Q^2), and effect size (f^2). R^2 indicates the proportion of variance in an endogenous construct explained by its predictors, whereas Q^2 evaluates the model's predictive relevance. The f^2 value indicates the relative contribution of individual predictor variables to endogenous constructs. Table 5 presents the R^2 and Q^2 values obtained from the structural model assessment.

Table 5. Coefficient of Determination and Predictive Relevance.

Endogenous Construct	R^2	Q^2	Interpretation
Perceived Enjoyment	0.584	0.391	Moderate explanatory power; predictive relevance
Impulsive Buying	0.637	0.418	Moderate explanatory power; predictive relevance

Table 5 demonstrates that LSC interactivity and social presence jointly explained 58.4% of the variance in perceived enjoyment. Meanwhile, LSC interactivity, social presence, and perceived enjoyment collectively explained 63.7% of the variance in impulsive buying. These values demonstrate moderate explanatory capability for both endogenous constructs. Furthermore, Q^2 values of 0.391 for perceived enjoyment and 0.418 for impulsive buying were greater than zero, indicating predictive relevance. Overall, the results demonstrate that the proposed model provides adequate explanatory and predictive capability for understanding Generation Z consumers' emotional experiences and impulsive purchasing behavior within live-commerce environments.

Table 6. Effect Size (f^2).

Relationship	f^2	Interpretation
LSC Interactivity → Perceived Enjoyment	0.248	Medium
Social Presence → Perceived Enjoyment	0.207	Medium
LSC Interactivity → Impulsive Buying	0.071	Small
Social Presence → Impulsive Buying	0.058	Small
Perceived Enjoyment → Impulsive Buying	0.263	Medium

Table 6 indicates that LSC interactivity and social presence produced medium effects on perceived enjoyment, with f^2 values of 0.248 and 0.207, respectively. In contrast, their direct effects on impulsive buying were relatively small, with values of 0.071 and 0.058. Perceived enjoyment produced the largest effect size on impulsive buying at 0.263, categorized as medium. These findings indicate that interactivity and interpersonal closeness contribute more strongly to consumers' emotional experiences than directly to spontaneous purchasing. In turn, enjoyment represents an important explanatory factor for Generation Z consumers' impulsive purchasing tendencies.

Direct Effect Analysis

The direct relationships among the research constructs were evaluated using a bootstrapping procedure. Path coefficients were used to determine the direction and magnitude of each relationship, while t-statistics and p-values were examined to determine statistical significance. The analysis focused on the effects of LSC interactivity and social presence on perceived enjoyment and impulsive buying, as well as the relationship between perceived enjoyment and impulsive buying. The results are presented in Table 7.

Table 7. Direct Effect Analysis.

Relationship	β	*t-statistics*	*p-values*	Result
LSC Interactivity → Perceived Enjoyment	0.421	5.287	< .001	Positive and significant
Social Presence → Perceived Enjoyment	0.386	4.731	< .001	Positive and significant
LSC Interactivity → Impulsive Buying	0.218	2.684	.008	Positive and significant
Social Presence → Impulsive Buying	0.194	2.451	.015	Positive and significant
Perceived Enjoyment → Impulsive Buying	0.437	5.612	< .001	Positive and significant

Table 7 demonstrates that all direct relationships were positive and statistically significant. LSC interactivity positively influenced perceived enjoyment ($\beta = 0.421$), while social presence also produced a positive effect ($\beta = 0.386$). Both LSC interactivity and social presence directly influenced impulsive buying, although their coefficients were comparatively smaller at 0.218 and 0.194, respectively. The strongest direct relationship was observed between perceived enjoyment and impulsive buying ($\beta = 0.437$). The results therefore indicate that consumers' emotional enjoyment represents a particularly important factor in explaining spontaneous purchasing behavior.

The structural relationships are presented graphically to illustrate how technological and social characteristics of live commerce are connected to consumers' emotional and behavioral responses. The diagram presents LSC interactivity and social presence as antecedent constructs, perceived enjoyment as an intervening emotional construct, and impulsive buying as the final behavioral outcome. Figure 2 also presents the standardized path coefficients and R^2 values of the endogenous constructs.

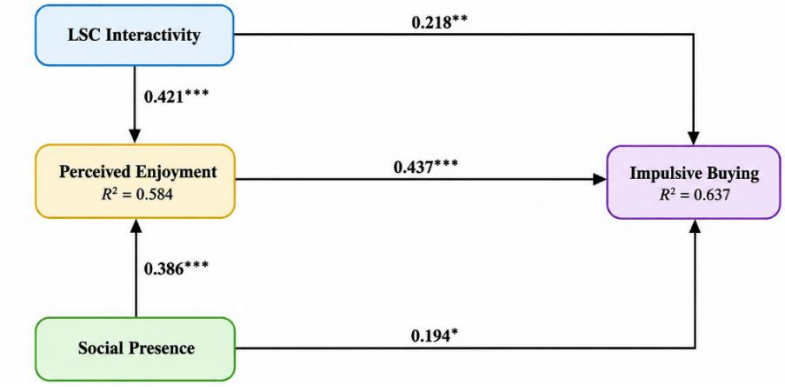


Figure 2. Structural Model and Path Coefficients.

Note: $p < 0.05$, $p < 0.01$, $p < 0.001$

LSC Interactivity ⟶ 0.218** ⟶ Impulsive Buying

Social Presence ⟶ 0.194* ⟶ Impulsive Buying

Figure 2 demonstrates two pathways through which LSC interactivity and social presence are associated with impulsive buying. Both constructs have direct positive relationships with spontaneous purchasing while simultaneously influencing perceived enjoyment. The strongest structural coefficient occurs between perceived enjoyment and impulsive buying (β = 0.437). Furthermore, LSC interactivity demonstrates a slightly stronger relationship with perceived enjoyment than social presence. These structural patterns indicate that technological interactivity and social connection contribute to purchasing behavior both independently and through the emotional experiences generated during live-shopping sessions.

Mediation Analysis

The mediation analysis examined whether perceived enjoyment transmits the effects of LSC interactivity and social presence on impulsive buying. Specific indirect effects were evaluated using the bootstrapping procedure through path coefficients, t-statistics, and p-values. The nature of mediation was determined by considering the statistical significance and direction of both direct and indirect relationships. Table 8 presents the indirect effect analysis.

Table 8. Indirect Effects and Mediation Analysis.

Indirect Relationship	β	*t-statistics*	*p-values*	Mediation
LSC Interactivity → Perceived Enjoyment → Impulsive Buying	0.184	4.109	< .001	Partial mediation
Social Presence → Perceived Enjoyment → Impulsive Buying	0.169	3.876	< .001	Partial mediation

Table 8 shows that perceived enjoyment significantly mediated both relationships. The indirect effect of LSC interactivity on impulsive buying through perceived enjoyment was positive and significant ($\beta = 0.184$, $p < .001$). Similarly, the indirect effect of social presence through perceived enjoyment was positive and significant ($\beta = 0.169$, $p < .001$). Because the corresponding direct effects remained statistically significant, perceived enjoyment functioned as a partial mediator in both relationships. Thus, technological interactivity and interpersonal connection influence spontaneous purchasing directly while simultaneously operating through consumers' pleasurable emotional experiences.

Discussion

The results demonstrate that LSC interactivity and social presence significantly enhance perceived enjoyment among Generation Z consumers. Interactivity enables consumers to participate actively through real-time communication, questions, responses, and product demonstrations, thereby creating a more engaging shopping experience. Similarly, social presence reduces psychological distance between consumers and streamers by creating a sense of interpersonal closeness during live-shopping sessions. The medium effect sizes of both relationships indicate that technological interaction and social connection are important determinants of consumers' emotional experiences. Thus, Generation Z consumers tend to experience greater enjoyment when live commerce provides both responsive communication and meaningful social interaction.

The findings also show that LSC interactivity, social presence, and perceived enjoyment positively influence impulsive buying. However, perceived enjoyment demonstrates the strongest direct effect, indicating that emotional pleasure plays a central role in stimulating spontaneous purchasing. Consumers who perceive live-shopping activities as enjoyable and entertaining may become more immersed in the shopping experience and more responsive to immediate purchasing opportunities. In contrast, the relatively smaller direct effects of interactivity and social presence suggest that technological and social characteristics alone are not the primary drivers of impulsive purchasing. Their influence becomes more substantial when they contribute to positive emotional experiences. The mediation analysis strengthens this interpretation by demonstrating that perceived enjoyment partially mediates the effects of both LSC interactivity and social presence on impulsive buying. This pattern is

consistent with the Stimulus–Organism–Response framework, where LSC interactivity and social presence function as environmental stimuli, perceived enjoyment represents the consumer's internal emotional state, and impulsive buying represents the behavioral response. The findings therefore indicate that interactive and socially engaging live-shopping environments stimulate spontaneous purchasing both directly and through the enjoyment experienced by consumers. This mechanism provides an integrated explanation of Generation Z's purchasing behavior within live-commerce environments.

From a practical perspective, live-commerce strategies targeting Generation Z should emphasize interactive, socially engaging, and enjoyable shopping experiences rather than relying exclusively on promotional incentives. Streamers can strengthen interactivity through immediate responses, interactive product demonstrations, and active audience participation, while social presence can be enhanced through natural communication and personalized engagement. These elements should be integrated with entertaining content to increase perceived enjoyment. By combining technological responsiveness, interpersonal connection, and emotional gratification, sellers and platforms can create more compelling live-shopping experiences that increase consumer engagement and encourage purchasing responses among Generation Z consumers.

5. CONCLUSION

This study concludes that LSC interactivity and social presence play important roles in shaping impulsive buying among Generation Z consumers, both directly and through perceived enjoyment. Interactive communication and a stronger sense of social connection enhance consumers' enjoyment during live-shopping activities, while perceived enjoyment emerges as the strongest factor influencing spontaneous purchasing behavior. Furthermore, perceived enjoyment partially mediates the effects of LSC interactivity and social presence on impulsive buying, supporting the Stimulus–Organism–Response framework in explaining consumer behavior within live-commerce environments. Therefore, live-commerce platforms, sellers, and streamers are recommended to strengthen real-time interaction, personalized communication, audience engagement, and entertaining product presentations to create more enjoyable shopping experiences. Future research should consider broader samples, different consumer generations, and additional variables such as trust, scarcity, streamer credibility, and fear of missing out to provide a more comprehensive understanding of impulsive purchasing behavior in live commerce.

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