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Immersed to buy: The mediating effect of flow experience on impulsive buying in TikTok live streaming

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ABSTRACT

Impulsive purchasing tendencies among Generation Z are increasingly shaped by live streaming commerce, which combines promotional incentives, entertainment, and real-time interaction into a digital shopping experience. This study examines the psychological mechanisms underlying impulsive buying behavior among Gen Z consumers in the context of TikTok Live. Using a quantitative survey approach, data were collected through purposive sampling from Generation Z consumers in Salatiga and Semarang who actively watch and shop through TikTok Live. Primary data were gathered using a digital survey and analyzed using PLS-SEM to test the structural relationships in the research model. The findings show that social presence does not directly influence impulsive buying behavior, whereas sales promotion has a significant, direct, and positive effect. However, both social presence and sales promotion significantly affect impulsive buying through the flow experience. Flow experience fully mediated the relationship between social presence and impulsive buying and partially mediated the relationship between sales promotion and impulsive buying. This indicates that immersion, enjoyment, and focused attention during live-streaming sessions increase consumers' tendency to make spontaneous purchases. This study highlights flow experience as a critical mediating mechanism in Gen Z's impulsive buying behavior on TikTok Live. The findings suggest that experiential immersion matters more than social cues alone, while sales promotion continues to exert a direct persuasive influence beyond its experiential effect. The main contribution of this study lies in showing that social and promotional stimuli influence impulsive buying differently: social presence requires full experiential mediation, whereas sales promotion retains an independent and direct pathway. These findings enrich the consumer behavior literature by clarifying the conditions under which flow mediates impulsive buying in live streaming commerce. Practically, sellers and content creators should prioritize immersive and engaging live-streaming experiences, while policymakers and researchers should consider experiential factors when examining consumer behavior on emerging social commerce platforms.

Keywords: TikTok live streaming, social presence, sales promotion, flow experience, impulsive buying

1. INTRODUCTION

Digital marketing strategies have been fundamentally reshaped by rapid technological progress, particularly through the integration of live streaming as a core commercial medium. Social media platforms such as TikTok not only function as entertainment media but have also evolved into interactive commercial channels that enable consumers to watch, interact with, and purchase products in real time via mobile devices. TikTok Live offers a shopping experience that integrates visual elements, social interaction, and entertainment, thereby attracting consumers' attention. TikTok is a highly popular social media platform in Indonesia that offers engaging, interactive, and visually appealing content, making it widely used by younger users as a medium for communication, information sharing, and brand exposure (Meliawati et al., 2023). Marketers perceive this phenomenon as an opportunity to improve their sales performance (Hung et al., 2022; Lee & Chen, 2021). This trend is increasingly relevant among Generation Z, a digital-native cohort that dominates TikTok users and demonstrates strong preferences for fast, interactive, and enjoyable shopping experiences.

Buying and selling through live streaming not only brings consumers closer to the products they view but also encourages them to purchase these products during the live commerce event. The enthusiastic atmosphere and active audience involvement during live sessions serve to stimulate impulsive buying. Impulsive buying is an emotional consumer behavior that has been measured and examined since the era of offline purchasing and has continued into online purchasing owing to technological advancements (Luo et al., 2023; Lia & Natswa, 2021). The term impulsive buying describes a behavior in which consumers complete purchases without prior intent, typically prompted by external influences or sensory inputs, leading them to make immediate purchase decisions (Li et al., 2022). The interactive nature of live streaming distinguishes it from conventional e-commerce by fostering real-time social exchanges. Such a dynamic environment is instrumental in stimulating unplanned consumer acquisition as it facilitates a more immersive shopping experience than static web-based interfaces.

During live streaming sales, a live streamer who promotes a product can make viewers feel closer, more connected, and more influenced by their social presence. Social presence represents the level of human-ness or personal contact felt by users when they engage with others through a communication medium (Short et al., 1976). A strong social presence can enhance the streamer's charm (charisma), leading the viewers to perceive them as authentic, friendly, and trustworthy figures. This condition not only builds trust but also influences viewers' feelings. The social presence inherent in live streaming has been empirically proven to influence consumers' impulsive buying behavior (Ming et al., 2021; Zhang et al., 2022).

The strategic use of diverse promotional tools, ranging from instantaneous rewards to flash discounts, complements social presence in the live commerce environment, effectively driving consumer engagement by fostering a time-pressured atmosphere. For consumers, instant and interactive sales promotion strategies have been shown to effectively trigger quick purchase decisions with minimal consideration, thereby increasing the likelihood of impulsive buying behavior. Sales promotions and discounts have also been proven to encourage impulsive buying among consumers (Huo et al., 2023).

Social presence and sales promotion can influence the formation of consumers' flow experiences. Flow experience is defined as a state of intense involvement in which the consumer becomes so engrossed in the shopping process that they lose temporal awareness and find the activity rewarding (Huo et al., 2023). In live-streaming e-commerce, flow experience can be created through engaging interactions with streamers, entertaining content presentation, and promotional incentives that draw consumers into the shopping process. This flow condition has a strong potential to stimulate impulsive buying behavior. Flow experience has been recognized as a critical determinant of consumer engagement with electronic commerce platforms (Huo et al., 2023; Hyun et al., 2022).

In the current era of digital commerce, live streaming has emerged as a transformative retail force; however, the literature explaining its impact remains fragmented. Current studies predominantly analyze social presence, sales promotions, and flow experience in isolation, obscuring the complex psychological processes underlying consumer purchase decisions. This fragmentation leaves a critical gap in our

understanding of how marketing stimuli collectively facilitate the transition into a flow state, which is a prerequisite for spontaneous consumption. Furthermore, empirical evidence identifying flow as a central mediator between these stimuli and impulsive buying remains limited. This lack of theoretical integration is especially problematic when examining Generation Z, as their unique susceptibility to real-time digital triggers necessitates a more integrated investigation into how immersive environments drive impulsive purchasing behavior. The contribution of this study lies in its integrated examination of how promotional incentives and social presence interact with flow experience to produce impulsive buying, and in its particular focus on whether flow mediates these antecedents uniformly or differentially. Prior studies have confirmed that flow matters in live streaming commerce; however, the precise pattern of mediation across different types of stimuli remains less specified. By testing these distinctions simultaneously in a Gen Z TikTok Live context, this study extends existing frameworks rather than claiming to comprehensively resolve the psychology of impulsive buying in live commerce (Nasution et al., 2025).

Based on the research background and identified gap, the research problem of this study aims to determine whether social presence and sales promotion positively influence flow experience, whether flow experience affects impulsive buying, and whether flow experience acts as a mediating variable. Therefore, this study is expected to enrich the theoretical perspectives of digital marketing, consumer behavior, and shopping psychology. This research provides both theoretical and practical contributions that may serve as strategic references for business practitioners, particularly SMEs and large brands utilizing live streaming e-commerce targeting Generation Z. Currently, Generation Z dominates the consumer market, particularly in the Central Java region; therefore, this study is expected to enrich the theoretical perspectives in digital marketing, consumer behavior, and shopping psychology.

2. LITERATURE REVIEW

2.1. Live Streaming E-Commerce

Live-streaming commerce represents an innovative retail paradigm that facilitates instantaneous engagement between shoppers and broadcasters. According to Kang et al. (2021), the multifaceted product demonstrations provided by streamers are a powerful catalyst for consumer purchasing. The hallmark of this medium is its high level of interactivity, which plays a fundamental role in shaping proactive user engagement and transactional behavior. Consequently, live streaming commerce can be defined as a real-time promotional strategy in which broadcasters leverage mobile or desktop technology to market goods. By integrating immediate checkout links, this medium streamlines the transactional process, offering consumers both functional convenience and the opportunity to cultivate social rapport with streamers (Lee & Chen, 2021).

2.2. Impulsive Buying

Initially, the concept of impulse purchasing referred to a consumer's tendency to finalize a transaction spontaneously, bypassing the typical stages of objective evaluation and predetermined need (Stern, 1962). Impulsive buying is a hedonic purchase often driven by sudden, unexpected, strong, persistent, and sometimes, irresistible impulses (Sun, 2020). Impulsive buying among Generation Z is generally characterized as spontaneous, emotionally driven purchasing behavior, where buying decisions are made without prior planning and are strongly influenced by hedonic motives, instant gratification, and emotional states rather than rational evaluation (Tessy & Setiasih, 2024). By disregarding rational analysis, consumers make rapid purchase decisions as they become immersed in the excitement of acquiring a particular product and ignore alternative options because of internal and external influences (Huang & Suo, 2021). Lee and Chen (2021) found that positive affective states, such as pleasure during shopping, are strong predictors of impulsive buying. Live-streamed commerce facilitates these states by offering more transparent product visualizations and exclusive discounts paired with real-time interpersonal cues from streamers that effectively prompt unplanned consumer spending.

2.3. Social Presence

Social presence describes the level of perceived realism of a person's existence during remote communication, making the interaction feel more like a face-to-face encounter (Liu, 2022; Ming et al., 2021; Short et al., 1976). In the realm of e-commerce, where the inability to physically handle products often lowers this sense of connection, live streaming serves as a vital tool for restoring social saliency (Gao et al., 2018). Through these platforms, a high level of interpersonal communication allows consumers to consciously process real-time information as if they were in a physical marketplace (Huo et al., 2023; Ming et al., 2021).

2.4. Sales Promotion

As a pivotal antecedent to consumer engagement, sales promotions in live-streaming contexts function as a dual mechanism: attracting potential buyers and intensifying the likelihood of immediate purchase behavior (Bandyopadhyay et al., 2021; Gao et al., 2018; Huo et al., 2023; Wongsunopparat & Deng, 2021). Sales promotion is a tactical marketing intervention designed to offer immediate functional or financial value to various stakeholders, including distribution channels and final buyers (Joseph et al., 2020). Various incentive-based strategies, ranging from direct financial rebates to gamified rewards, such as lotteries, serve as momentary triggers in the live-streamed marketplace. These efforts effectively shorten the customer deliberation period by offering advantages that are unavailable under normal market conditions (Temel & Armağan, 2022; Wongsunopparat & Deng, 2021). While bonus packages can stimulate impulsive purchases in traditional or offline shopping, price discounts in online shopping can increase purchase intention and stimulate repeat purchases, making discounts a key advantage of livestreaming. However, such stimulation is not solely driven by sales promotion; consumers' psychological conditions also play a role (Huo et al., 2023).

2.5. Flow Experience

Live streaming e-commerce in the modern era is fundamentally intertwined with the experience of flow, which is a state of peak focus and engagement first identified in the psychological literature. Flow represents a dynamic internal process triggered by specific external cues rather than a passive reaction. When shoppers navigate the high-stimulus environment of a livestream, the resulting interaction fosters a profound sense of presence, transforming a routine transaction into an immersive psychological event (Huo et al., 2023). Streamers play a crucial role in enhancing consumers' flow experiences (Li et al., 2024). In live-streaming commerce, the host's ability to entertain acts as a primary driver for an 'optimal experience' or flow, characterized by joy and intense focus. By priming consumers with a pleasurable shopping atmosphere, streamers facilitate a loss of self-consciousness that is intrinsically linked to spontaneous consumption. Numerous empirical studies have substantiated the alignment between psychological immersion and unplanned spending. Previous studies have shown that flow experience is associated with impulsive buying (Huo et al., 2023; Li et al., 2024).

2.6. Relationship between Variables

The intrinsic interactive features of live commerce serve to elevate the social presence felt by Gen Z users, creating a more immersive digital shopping atmosphere. Consequently, this immersion in a socially rich digital environment acts as a catalyst, increasing consumers' overall engagement and interest in the products and marketing strategies being presented (Ma, 2021). During live streaming, viewers can directly observe products and inquire about specifications, discounts, and shipping policies through the comments section. Social presence signals reflect the extent to which live streaming platforms enhance consumer awareness through interaction (Huo et al., 2023). Technological attributes embedded in live streaming facilitate social presence by enabling interactive product experiences and real-time value exchange, thereby alleviating consumers' uncertainty and hesitation in their purchasing decisions (Huo et al., 2023; Zheng et al., 2023). Given that social presence plays a critical role in amplifying consumer involvement and satisfaction during live broadcasts, we propose the following proposition:

H1: Social presence positively influences consumers' flow experience

Sales promotions often contain incentives that are perceived as beneficial and positive, providing additional motivation to purchase (Temel & Armağan, 2022). Sellers can offer discounts, coupons, and other promotional tools to attract consumers' attention. When promotions are offered during live streaming, both new and existing consumers become more engaged, obtain more product information, spend time interacting in the comments section, and become immersed in the live streaming activity. Thus, flow experience as an engaging experience may be influenced by sales promotions during live streaming. Therefore, the following hypothesis is proposed:

H2: Sales promotion positively influences flow experience

During live streaming, consumers' attention is focused on the streamer's appearance. Consequently, many streamers use beauty filters and makeup to create an attractive first impression. An appealing first impression can encourage consumers to trust the promoted products and make unplanned purchases. Zhang and Shi (2022) stated that social presence significantly influences impulsive buying.

Promotional incentives function as psychological motivators that can effectively prompt shoppers to make unplanned purchases. Attractive discounts can change the minds of consumers who are initially uninterested in purchasing. Previous studies have supported the influence of sales promotion on impulsive buying (Bandyopadhyay et al., 2021; Al Mutanafisa & Retnaningsih, 2021; Akram et al., 2018; Temel & Armağan, 2022).

Flow experience represents an "optimal experience" characterized by artistic and entertaining activities that increase consumers' focus and attention (Shahpasandi et al., 2020). According to Sofi and Najar (2018), impulsive buying is an intense and spontaneous decision-making behavior that is difficult to regulate. In live streaming commerce, engaging and interactive content accompanied by attractive offers can enhance the flow experience and trigger unplanned purchases. Live streaming provides a sense of freedom, involvement, and direct interaction between sellers and consumers, thereby strengthening impulsive buying tendencies (Liu et al., 2022). These findings align with those of previous studies, indicating that flow experience significantly influences impulsive buying behavior (Huo et al., 2023; Shahpasandi et al., 2020). Therefore, the following hypotheses are proposed:

H3: Social presence has a positive influence on impulsive buying.

H4: Sales promotions positively influence impulsive buying.

H5: Flow experience positively influences impulsive buying.

This study argues that for social presence and sales incentives to trigger impulsive acquisitions among Generation Z, a flow state must first be established as an essential intermediary. Although an identical conceptual framework has not been previously explored, the extant literature provides a robust foundation by confirming the mediating capacity of the flow state in comparable consumer behavior contexts. For example, Temel and Armağan (2022) found that flow experience mediates the relationship between sales promotions and impulsive buying. Wang et al. (2021) also found that a stronger social presence in live e-commerce triggers a greater flow experience, which positively influences impulsive consumption intentions. Therefore, the following hypotheses are proposed:

H6: Flow experience mediates the relationship between social presence and impulsive buying behavior.

H7: Flow experience mediates the relationship between sales promotions and impulsive buying.

Drawing on the empirical evidence reviewed, this study posits that social presence and sales promotions serve as primary antecedents that shape the consumer's flow experience. This psychological state is expected to act as a significant predictor of impulsive buying behavior within the live-streaming ecosystem. The integrated conceptual framework derived from these relationships is illustrated in Figure 1.

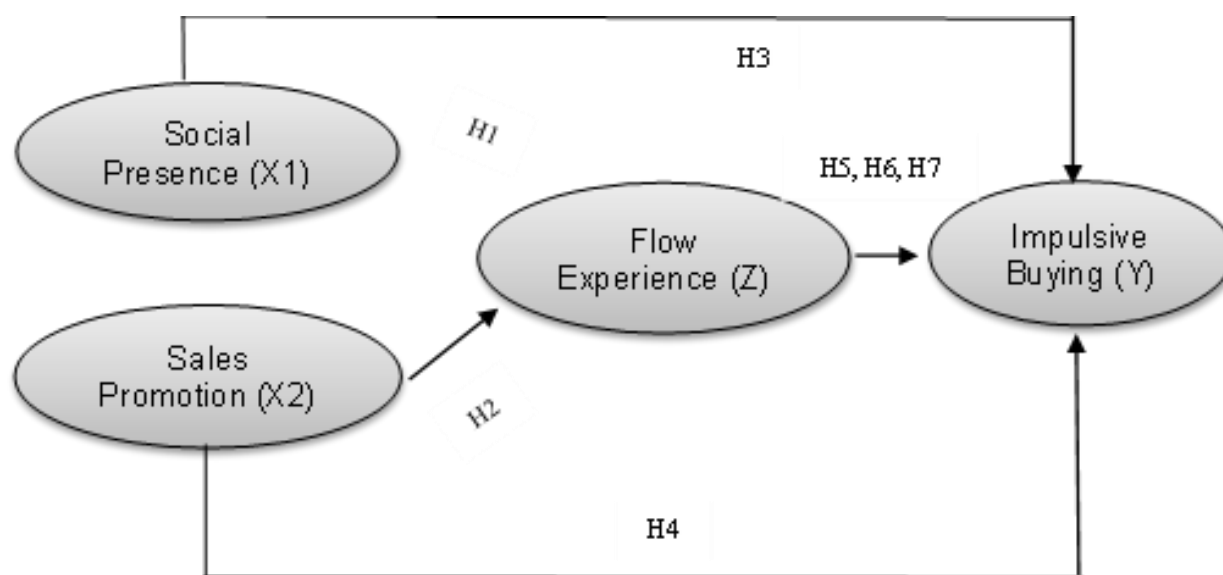


Figure 1. Conceptual Framework of Impulsive Buying Impacted by Social Presence and Sales Promotion, Mediated by Flow Experience

3. METHOD

Factors impacting the impulsive buying tendencies of Generation Z consumers on TikTok live streaming in Salatiga and Semarang, Central Java, Indonesia, were examined through a quantitative survey approach. According to [Hair et al. \(2014\)](#), a quantitative method is well-suited for analyzing the relationships among variables and empirically testing hypotheses using numerical data, particularly in studies involving latent psychological constructs. Respondents were selected using purposive sampling, targeting Generation Z individuals with prior experience watching and purchasing products through TikTok Live to ensure the relevance and validity of the responses. Salatiga and Semarang were chosen as the research locations because they represent two urban settings with different scales but similar digital consumption patterns. It should be noted that the cross-sectional, self-report design of this study supports the identification of associations among variables but does not permit strong causal inferences. A structured online survey served as the primary instrument for gathering information and was specifically developed to quantify the study's core constructs. To maintain conceptual precision within the Indonesian research setting, the study's instruments, which were originally sourced from validated academic scales, underwent a rigorous translation and review process. These items were further adapted to fit the current context and operationalized using a five-point Likert scale to ensure measurement validity. Among them, items of impulsive buying features refers to [Li et al. \(2024\)](#), items of social presence refers to [Ming et al. \(2021\)](#), items of sales promotion refers to [Zheng et al. \(2023\)](#), and items of flow experience refers to [Dong et al. \(2023\)](#). All measurement items were translated into Indonesian and carefully examined to ensure clarity of meaning and suitability for the research context.

The researchers utilized PLS-SEM to process the collected data, allowing for the simultaneous validation of the measurement model and testing of hypothesized paths. To ensure the integrity of the constructs, convergent and discriminant validity analyses were performed. The former was verified by assessing the indicator loadings and AVE values. In accordance with established psychometric standards ([Fornell & Larcker, 1981](#)), an indicator loading surpassing 0.70 and an AVE greater than 0.50 were treated as evidence of adequate variance explanation within the model. Reliability was assessed using Cronbach's alpha (CA), and composite reliability (CR). The results confirmed that all constructs met the required criteria for reliability and validity. After confirming the measurement model's adequacy, the structural framework was analyzed to test the research hypotheses. To facilitate reliable conclusions, the path coefficients and significance levels were derived using a bootstrapping procedure. For a comprehensive overview of the measurement items and their operational definitions, see [Table 1](#).

Table 1. Operational Definition and Indicators

Variables	Operational Definition	Indicators
Impulsive Buying (Li et al., 2024)	any purchase made by consumers without prior planning or rational consideration of their needs.	<ol style="list-style-type: none"> 1. Making unplanned purchases while watching live streams. 2. Buying products that were not previously intended for purchase. 3. Making spontaneous purchase decisions during live streaming with minimal prior consideration.
Social Presence (Ming et al., 2021)	The psychological awareness of others as actual, distinct individuals during a technological exchange, regardless of the medium being used	<ol style="list-style-type: none"> 1. Feeling direct interaction with the streamer during live streaming. 2. Experiencing live streaming as a personal and engaging activity. 3. It is easy to communicate with other viewers during live streaming. 4. Perceiving the live streaming environment as warm and socially inviting. 5. Feeling that the streamer and other viewers are responsive to personal reactions and emotions
Sales Promotion (Zheng et al., 2023)	Short-term incentives are offered during live streaming to stimulate immediate purchasing behavior.	<ol style="list-style-type: none"> 1. Willingness to purchase products during flash sales via live streaming. 2. Increased likelihood of watching and purchasing when exclusive coupons are offered. 3. Willingness to buy products when incentives or free gifts are provided. 4. Motivation to purchase products because of lucky draws or prize-based promotions. 5. Increased purchase interest triggered by limited-time or limited-quantity promotions
Flow Experience (Dong et al., 2023)	A condition of total cognitive absorption, where the individual's focus is so concentrated on their current action that they derive significant gratification while becoming detached from external environmental cues	<ol style="list-style-type: none"> 1. Feeling highly concentrated and immersed while watching live streams. 2. Loss of awareness of the surrounding environment during live streaming. 3. Forgetting other planned activities while engaging in live streaming sessions. 4. Experiencing a sense of control over one's actions during live streaming. 5. Feeling enjoyment while watching live-streaming content.

4. RESULTS AND DISCUSSION

4.1. Results

Data collection will be conducted between October and December 2025. The questionnaire captured information related to respondents' characteristics, including gender, birth year, frequency of watching live streams, and live streaming viewing duration. In addition, the instrument measured respondents' perceptions of social presence, sales promotion, flow experience, and impulsive buying behavior in the context of TikTok Live Streaming Commerce. The final sample consisted of 279 valid responses that met all the screening requirements. The sample was predominantly female (73.5%), with most respondents born between 2006 and 2007 (58.78%), indicating a strong representation of late Generation Z. This demographic composition means that the findings primarily reflect the experiences of younger female Gen Z consumers in Salatiga and Semarang and should not be generalized uncritically to all Gen Z consumers. In terms of behavior, respondents showed high engagement with live streaming, with many watching it at least once a day (34.4%). However, the viewing duration was generally short, as most respondents spent less than 30 minutes per session (80.6%). The descriptive statistics of the survey samples are presented in [Table 2](#).

Table 2. Respondent Characteristics

Characteristics	Frequency (Percentage)
Gender	
Male	74 (26.5)
Female	205 (73.5)
Birth Year	
1999-1999	3 (1.08)
2000-2001	3 (1.08)
2002-2003	23 (8.24)
2004-2005	83 (29.75)
2006-2007	164 (58.78)
2008-2011	3 (1.08)
The intensity of live stream viewership	
1-2 times a week	70 (25.1)
3-4 times a week	49 (17.6)
5-6 times a week	20 (7.2)
Less than once a week	44 (15.8)
At least once a day	96 (34.4)
Livestream viewing duration	
>3 hours	3 (1.1)
1-2 hours	5 (1.8)
30-60 minutes	46 (16.5)
Less than 30 minutes per viewing	225 (80.6)

Source: Processed from primary data (2026)

Several statistical tests were performed using PLS-SEM to ensure the measurement model's integrity. As detailed in Table 3, convergent validity was confirmed, as all factor loadings surpassed the 0.70 benchmark. Reliability was further substantiated by Cronbach's alpha (CA) and composite reliability (CR) scores, which ranged from 0.796 to 0.858 and 0.880 to 0.898, respectively, well above the 0.70 threshold. Additionally, all constructs yielded Average Variance Extracted (AVE) values exceeding 0.50, satisfying the criteria set by Fornell and Larcker (1981) for adequate variance explanation. To satisfy the Fornell-Larcker criterion, discriminant validity was verified by demonstrating that each latent variable shared more variance with its assigned indicators than with any other construct, as evidenced by the square root AVE values that were higher than the inter-construct correlations. Discriminant validity is established when a latent variable exhibits greater variance within its measurement set than other factors. In this study, such a requirement was met, as all square root AVE values were greater than their corresponding correlation coefficients (Chin, 1998), and the results presented in Table 4 confirm satisfactory discriminant validity for all constructs in the proposed research model.

Table 3. Convergent Validity and Reliability

Variable	Loading Factors	Cronbach Alpha	AVE	CR
Impulsive Buying (IB)	0.913	0.796	0.712	0.881
IB1	0.797			
IB2	0.817			
IB3				
Social Presence (SP)		0.831	0.595	0.880
SP1	0.750			
SP2	0.851			
SP3	0.771			
SP4	0.775			
SP5	0.700			
Sales Promotion (PRO)				
PRO1	0.728			
PRO2	0.860			

PRO3	0.824	0.858	0.639	0.898
PRO4	0.818			
PRO5	0.757			
Flow Experience (FE)				
FE1	0.795			
FE2	0.799			
FE3	0.795	0.834	0.595	0.880
FE4	0.719			
FE5	0.746			

Source: Processed from primary data (2026)

Table 4. Discriminant Validity Value

	1	2	3	4
Impulsive Buying	0.844			
Social Presence	0.234	0.771		
Sales Promotion	0.448	0.552	0.799	
Flow Experience	0.390	0.464	0.463	0.772

Source: Processed from primary data (2026)

SmartPLS 3 was used as the primary computational tool to perform partial least squares structural equation modeling (PLS-SEM) on the gathered dataset. Compared to maximum likelihood estimation, the PLS approach offers several advantages, including fewer assumptions regarding measurement scales and greater suitability for studies with relatively small sample sizes. To examine the mediating effect of social presence, sales promotion, and impulsive buying, the bootstrapping technique was employed, as presented in Table 5. The results show that social presence is positively associated with flow experience ($b = 0.300, P < 0.05$), while sales promotion is associated with flow experience ($b = 0.298, P < 0.05$) and impulsive buying ($b = 0.382, P < 0.05$). That is, H1, H2, and H4 are supported in this study. In addition, the results show that social presence value ($b = -0.096, P < 0.05$) does not directly affect impulsive buying; that is, H3 is rejected. The flow experience positively affects impulsive buying ($b = 0.257, P < 0.05$), thus supporting H5. Mediation analysis confirmed H6 and H7: flow experience fully mediated the relationship between social presence and impulsive buying (indirect effect $t = 2.622, p = 0.009, 95\% \text{ CI } [0.022, 0.141]$) and partially mediated the relationship between sales promotion and impulsive buying (indirect effect $t = 2.082, p = 0.038, 95\% \text{ CI } [0.013, 0.154]$), given that the direct effect of sales promotion on impulsive buying remained significant. The research findings highlight that affective responses, both in terms of level and valence, function as a vital intermediary through which social interaction and sales incentives influence the impulsive buying behavior of TikTok viewers (see Table 5, Table 6, and Figure 2).

Table 5. Result of the Structural Model

Path	Coefficient (t value)	p-value	Results
H1: Social Presence → Flow Experience	0.300 (4.177)	0.000	Supported
H2: Sales Promotion → Flow Experience	0.298 (3.732)	0.000	Supported
H3: Social Presence → Impulsive Buying	-0.096 (1.212)	0.819	Rejected
H4: Sales Promotion → Impulsive Buying	0.382 (5.269)	0.000	Supported
H5: Flow Experience → Impulsive Buying	0.257 (2.936)	0.003	Supported

Source: Processed from primary data (2026)

Note: $p < 0.05$

Table 6. Indirect Effects Model Predicting Customer’s Impulsive Buying Behavior

Path	Boot Indirect Effect (t-value)	Confidence Interval	p-value	Results
H6: Social Presence → Flow Experience → Impulsive Buying	2.622	0.022 to 0.141	0.009	Supported
H7: Sales Promotion → Flow Experience → Impulsive Buying	2.082	0.013 to 0.154	0.038	Supported

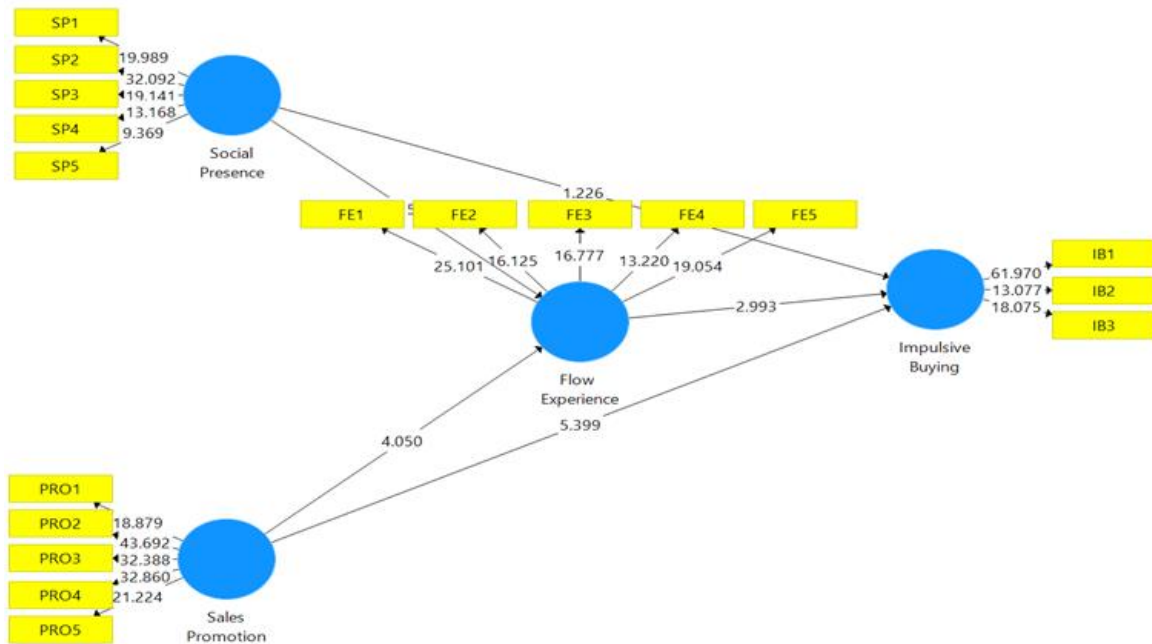


Figure 2. Structural equation model output

4.2. Discussion

The findings confirm that social presence positively influences flow experience, indicating that real-time interaction, perceived responsiveness, and social warmth during TikTok Live Streaming enhance consumers’ psychological immersion. When viewers perceive streamers and other users as socially present, they are more likely to focus their attention, experience enjoyment, and become deeply engaged in the live session. This result supports prior studies suggesting that interactive communication in live commerce environments facilitates flow through the establishment of interpersonal connection and involvement (Ming et al., 2021; Wang et al., 2021)

From a Generation Z perspective, social interaction primarily functions as an experiential catalyst rather than a persuasive force. As digital natives, Generation Z consumers are accustomed to continuous online interaction; therefore, social presence alone does not create novelty but instead strengthens immersion when combined with engaging content. This finding highlights the role of social presence as a mechanism that enhances experiential quality rather than directly driving purchase behavior. Its impact becomes significant when it contributes to immersive and entertaining experiences that foster deeper engagement (Djafarova & Bowes, 2021).

The results show that promotional incentives significantly amplify consumers’ flow experience, suggesting that promotional cues such as flash sales, exclusive vouchers, and limited-time offers increase consumer engagement during live streaming. These promotions generate excitement and urgency, which capture attention and encourage prolonged involvement in live sessions. The current evidence corroborates earlier scholarly investigations, reinforcing the notion that promotional stimuli can intensify

emotional arousal and concentration, thereby facilitating the flow experience (Huo et al., 2023; Temel & Armağan, 2022).

For Generation Z consumers, promotional strategies embedded in live streaming content serve as economic incentives and entertainment elements that enhance the overall shopping experience. The combination of scarcity cues and real-time interaction enhances the experiential value, making consumers more immersed in the shopping process (Akram et al., 2018).

Contrary to the proposed hypothesis, social presence did not directly influence impulsive buying behavior. This finding suggests that, although consumers may feel socially connected to streamers and other viewers, such interactions alone are insufficient to trigger spontaneous purchases. This result supports the view that social presence primarily influences internal psychological states rather than immediate behavioral responses (Wang et al., 2021). Prior studies have similarly reported that social presence tends to influence affective and cognitive responses rather than directly leading to impulsive buying decisions (Ming et al., 2021; Sun et al., 2019; Xu et al., 2020).

One possible explanation is that social presence primarily enhances emotional engagement and perceived enjoyment, which require further psychological processing before being translated into purchasing behavior. In live streaming commerce, consumers may enjoy interacting with streamers and other viewers without immediately feeling compelled to buy, particularly when purchasing decisions involve perceived risk or financial considerations (Wongkitrungrueng & Assarut, 2020). In the context of TikTok Live, Gen Z consumers may perceive social interaction as a normative, expected feature of digital environments rather than as a distinctive stimulus. Having grown up immersed in social media, Gen Z users may experience the presence of streamers and co-viewers as background noise rather than as a novel or compelling trigger for spontaneous purchases. The contrast with sales promotion is instructive: while promotional incentives create economic urgency that operates independently of immersion, social cues require deeper psychological processing before they can influence behavior. This suggests that interaction quality, not mere presence, is the relevant mechanism. As a result, social presence must first translate into genuine psychological engagement, enjoyment, focused attention, and loss of self-consciousness before it can produce the behavioral outcome of impulsive buying. This insight has important practical implications: simply increasing the frequency or intensity of social interactions in live streams is unlikely to drive purchases unless that interaction is designed to create experiential absorption. This suggests that the impact of social presence on consumer acquisition is not immediate; instead, it is channelled through the psychological immersion of the flow experience.

The findings indicate that sales promotions positively affect impulsive buying, confirming that time-sensitive discounts, exclusive offers, and promotional incentives encourage consumers to make unplanned purchases. Promotional tactics reduce deliberation time and increase perceived value, prompting consumers to act quickly and impulsively. These findings resonate with the previous literature, which identifies promotional incentives as powerful extrinsic catalysts that drive impulse buying within digital and real-time commerce environments (Akram et al., 2018; Bandyopadhyay et al., 2021).

In live streaming commerce, promotional strategies are often delivered in a time-pressured and interactive environment, which amplifies their persuasive impact. Research has shown that scarcity cues and temporal pressure heighten consumers' perceived value and fear of missing out (FOMO), leading to immediate purchase decisions without extensive evaluation (Liu et al., 2013). This mechanism is particularly salient in live-streaming settings, where promotions are visually emphasized and reinforced through real-time communication by streamers. Among Generation Z consumers, who tend to value immediacy and instant gratification, promotional cues are particularly effective in stimulating impulsive purchase decisions. The live streaming format further amplifies this effect by combining promotions with real-time interactions and entertainment, creating an environment conducive to spontaneous purchases.

The study validates that a state of flow acts as a precursor to impulsive buying, as consumers who undergo total mental absorption and affective involvement in a livestream are more prone to making immediate, uncalculated transactions. Flow experience reduces cognitive control and increases reliance on affective responses, which accelerates decision-making and encourages impulsive behavior (Shahpasandi et al., 2020). Recent empirical research further supports this mechanism by demonstrating that heightened

flow experiences significantly increase consumers' propensity to act impulsively in online and live-streaming shopping contexts. Studies on live streaming commerce have found that when viewers enter a flow state, they exhibit stronger impulsive buying tendencies due to their intense focus on the shopping environment and diminished awareness of external constraints (Sipur & Amadi, 2025).

In TikTok live streaming, features such as engaging storytelling, interactive communication, and entertaining content facilitate flow experiences that heighten consumers' emotional engagement. This finding reinforces the central role of flow experience as a psychological condition that bridges engagement and impulsive purchasing behaviors. The results also support previous findings, indicating that impulsive buying among Gen Z is strongly influenced by psychological factors. Tessy and Setiasih (2024) found that individual psychological traits significantly shape impulsive buying behavior among Gen Z consumers, reinforcing the importance of internal experiential and emotional states in explaining spontaneous purchasing decisions. When they deeply enjoy and become absorbed in live content, their vigilance decreases and impulsivity increases, thereby converting engagement into spontaneous purchase behavior (Temel & Armağan, 2022).

The data indicate that flow experience acts as a critical intermediary, channeling the impacts of both social presence and promotional activities into impulsive buying. This indicates that social presence and promotional stimuli influence impulsive purchase behavior primarily through psychological immersion rather than direct effects. These findings highlight the central role of flow experience as a mechanistic link between external stimuli and spontaneous consumer behavior. By identifying flow experience as a mediator, this study reinforces the existing consensus that subjective mental states are fundamental to understanding why consumers engage in spontaneous purchases. Martiza and Hadi (2025) demonstrated that psychological states, such as fear of missing out, mediate the relationship between situational cues and impulsive buying, supporting the argument that internal experiential factors play a critical role in translating external stimuli into purchasing behavior. Flow experience functions as a psychological bridge by which environmental cues, whether interpersonal interaction or promotional incentives, are translated into behavioral outcomes. In live streaming and other digital commerce contexts, flow represents a state of deep engagement characterized by high attention focus, heightened enjoyment, and diminished awareness of external distractions (Li & Peng, 2021). Empirical studies in online retailing and social commerce confirm that flow experience mediates the impact of platform interactivity and experiential cues on consumers' impulsive and unplanned buying behaviors (Doan & Lee, 2023; Temel & Armağan, 2022).

Specifically, social presence alone may not directly trigger spontaneous purchases, but it contributes to a heightened sense of involvement and emotional resonance with the content (Sun et al., 2019). When these social cues foster immersive attention (i.e., flow), consumers become less deliberative and more affect-driven, increasing their susceptibility to impulsive buying. This mediating mechanism aligns with the findings of research on live streaming commerce, which shows that parasocial interaction and entertainment value strengthen impulsivity only when users experience flow (Sipur & Amadi, 2025). Thus, the state of flow serves as a psychological conduit through which social cues gain persuasive potency. Similarly, sales promotions, such as limited-time offers, flash deals, and exclusive coupons, work not only as economic incentives but also as attentional triggers that amplify immersion. When promotional stimuli are present within an engaging live stream, they capture attention and sustain focus, contributing to the flow experience. Studies in digital shopping contexts have demonstrated that promotional cues enhance flow states, which in turn fuel impulsive buying behavior (Huo et al., 2023; Liu et al., 2022). This suggests that the influence of sales promotion on impulse purchases is indirect and contingent on consumers entering a flow state.

5. CONCLUSION

This study examines the determinants of impulsive purchasing among Generation Z within the TikTok live-streaming ecosystem, specifically focusing on social presence, sales promotions, and the mediating role of flow experience. The results reveal a nuanced pattern: social presence does not exert a significant direct effect on impulsive buying, meaning that its influence operates entirely through the

psychological immersion of the flow experience (full mediation). By contrast, sales promotion retains a significant direct positive effect on impulsive buying in addition to its indirect effect through flow experience (partial mediation). This distinction is the most theoretically important finding of this study. This suggests that for Gen Z TikTok Live users, social interaction has become a normalized backdrop of digital consumption, requiring deeper psychological absorption before it translates into spontaneous purchasing. Promotional incentives, however, retain their immediate persuasive force by creating economic urgency that is sufficient to prompt impulsive decisions even without deeper immersion.

These results emphasize the central role of flow experience as a psychological mechanism that differentially channels the effects of social presence and sales promotion on impulsive buying behavior. Managerially, brands and streamers should prioritize creating immersive and engaging live-streaming environments, strategically integrate promotions at peak engagement moments, and foster meaningful interactions that deepen psychological absorption. Theoretically, this study extends prior research by specifying the mediation pattern more precisely: flow experience does not uniformly mediate all antecedents equally but acts as a necessary full mediator for social presence while only partially mediating the stronger and more direct influence of promotional incentives. Several limitations should be acknowledged. The sample is heavily skewed toward female respondents (73.5%) and toward those born in 2006–2007, which means the findings reflect a narrower subsection of Gen Z than the label implies; the results should not be generalized uncritically to all Gen Z consumers. The cross-sectional self-report design supports associations between variables but does not permit strong causal inferences. Future studies are encouraged to adopt more representative and gender-balanced samples, longitudinal or experimental designs, and additional psychological moderators such as self-control or hedonic motivation to further enrich the understanding of impulsive buying in live streaming commerce.

Ethical Approval

Not Applicable.

Informed Consent Statement

Not Applicable.

Authors' Contributions

RSQ contributed to the conceptualization, legal and textual analysis, and writing of the original draft. YAN contributed to the literature review, interpretation of the findings, and writing, review, and editing. RS contributed to the data collection and coding. All authors read and approved the final manuscript.

Disclosure Statement

Regarding the subject matter of this paper, the researchers declare that no competing financial or personal interests exist

Data Availability Statement

To uphold participant confidentiality and adhere to data protection standards, the raw datasets from this study are not hosted in public repositories. However, the corresponding author can provide access to the data for legitimate academic purposes.

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