

Influence Flash Sale and Live Streaming to Impulsive Buying through Fear of Missing Out (FOMO) on Tiktok Shop

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Abstract

This study aims to examine the influence of Flash Sale and Live Streaming on Impulsive Buying through Fear of Missing Out (FOMO) among TikTok Shop consumers in Indonesia. A quantitative approach with a causal associative design was employed. Data were collected through an online questionnaire involving 100 TikTok Shop users selected using purposive sampling. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4. The results indicate that Flash Sale positively and significantly affects FOMO ($\beta = 0.499$, $p < 0.001$), while Live Streaming also has a positive and significant effect on FOMO ($\beta = 0.322$, $p = 0.001$). Furthermore, Flash Sale ($\beta = 0.333$, $p < 0.001$), Live Streaming ($\beta = 0.436$, $p < 0.001$), and FOMO ($\beta = 0.226$, $p = 0.009$) significantly influence Impulsive Buying. The mediation analysis further confirms that FOMO significantly mediates the relationship between Flash Sale and Impulsive Buying ($\beta = 0.113$, $p = 0.020$), as well as between Live Streaming and Impulsive Buying ($\beta = 0.073$, $p = 0.048$). These findings suggest that promotional strategies based on limited-time offers and interactive live-streaming activities effectively stimulate impulsive buying behaviour through consumers' fear of missing out on purchasing opportunities.

Keywords: Flash Sale, Live Streaming, FOMO, Impulsive Buying, TikTok Shop

INTRODUCTION

The rapid growth of social commerce has fundamentally reshaped consumer shopping behavior, particularly through platforms that blend entertainment, social interaction, and seamless transaction capabilities within a single digital ecosystem. TikTok Shop has emerged as one of the most prominent examples of this shift, offering an integrated environment where short-form video content, live streaming, and instant purchasing converge. Unlike conventional e-commerce, live streaming commerce enables consumers to engage with sellers in real time, observe product demonstrations, and experience a more immersive form of shopping that extends beyond passive browsing (Q. Sun & Xu, 2019; Y. Sun et al., 2019; Wongkitrungrueng et al., 2020). Consumers are drawn to live streaming not only for its utilitarian value but also for its hedonic qualities, including entertainment, social presence, and the pleasure derived from interactive engagement with hosts and other viewers (Cai, Wohn, Mittal, & Sureshbabu, 2018). This distinctive environment makes TikTok Shop a particularly compelling context for examining impulsive buying behavior, as it simultaneously exposes consumers to time-sensitive promotional stimuli and emotionally engaging live content (Lee & Chen, 2021; Lin et al., 2023; Hartono & Ingriana, 2025).

Among the strategies embedded within this ecosystem, flash sale and live streaming stand out as two powerful mechanisms that shape consumer decision-making. Flash sale operates by offering substantial discounts within an extremely short time window and with limited stock availability, creating a perception of scarcity that compels consumers to act quickly before the opportunity disappears (Hartono & Ingriana, 2025; Gierl, Plantsch, & Schweidler, 2008). Research has shown that time pressure arising from such promotional formats significantly moderates the relationship between perceived value and purchase intention, effectively accelerating the decision-making process in ways that bypass deliberate evaluation (Peng, Zhang,

Wang, & Liang, 2018; Liu, Shi, Xue, & Shen, 2022). Live streaming, on the other hand, introduces a social and hedonic dimension to online shopping, allowing sellers to communicate directly with potential buyers, demonstrate products in real time, and cultivate a vibrant community atmosphere around the purchase experience (Wongkitrungrueng, Dehouche, & Assarut, 2020). The visual richness and personalization embedded in live streaming further amplify consumer engagement by fostering a sense of telepresence and increasing the urge to buy impulsively (Khoi, Le, & Nguyen, 2023). When both elements operate in tandem during a single session, consumers are simultaneously exposed to time pressure and emotional stimulation, a combination that research has consistently linked to heightened psychological vulnerability and spontaneous purchasing decisions (Zhang, Zhang, & Yan, 2024; Rezaldi, 2025).

This convergence also gives rise to Fear of Missing Out (FOMO), a psychological state characterized by anxiety over losing access to desirable offers, trending products, or exclusive moments that are unlikely to recur (Truong, 2025; Zhang & Rosli, 2025). In the context of social commerce, FOMO functions as an internal psychological condition that mediates the relationship between external marketing stimuli and behavioral responses, manifesting as an urgent compulsion to purchase before an opportunity is permanently lost. Rachman et al. (2024) confirm that promotional discounts and live streaming interactions are significant antecedents of FOMO, which in turn drives consumers toward impulsive buying behavior. Impulsive buying itself refers to unplanned, spontaneous purchase decisions triggered by external environmental cues and internal emotional states, often occurring without deliberate consideration of consequences (Abdelsalam et al., 2020). Within the TikTok Shop ecosystem, where flash sale promotions are frequently embedded into live streaming sessions, the conditions for impulsive buying are structurally amplified by the platform's real-time, high-stimulation design.

Despite the growing body of literature on live streaming and impulsive buying, several notable gaps remain. Truong (2025) found that FOMO dimensions explain a substantial proportion of impulsive buying behaviour on TikTok Shop; however, the study focused only on student respondents within a single national context. Zhang & Rosli (2025) demonstrated that FOMO mediates the relationship between live-streaming activities and impulse buying, yet flash sale was not incorporated as a separate marketing stimulus. In addition, Rachman et al. (2024) confirmed that FOMO plays an important role in encouraging impulse purchases among digital consumers, but the study did not simultaneously examine the interaction between flash sale and live streaming within a unified research framework.

These previous studies indicate that the existing literature has generally investigated flash sale, live streaming, and FOMO separately. Limited empirical evidence explains how flash sale and live streaming simultaneously influence impulsive buying through FOMO, particularly among Indonesian TikTok Shop users. Therefore, this study addresses this gap by integrating both marketing stimuli into a single Stimulus–Organism–Response (S–O–R) model.

Accordingly, this study contributes theoretically by extending the application of the S–O–R framework in the context of social commerce, while practically providing insights for sellers and digital marketers regarding the optimisation of flash sale and live-streaming strategies to encourage consumer purchasing behaviour on TikTok Shop.

RESEARCH METHODS

This study uses a quantitative approach combined with a causal associative method. The quantitative approach was used because the focus of this study was to examine the relationship between variables through statistical and measurable analysis. The causal association method

was used to analyze the causal relationship between Flash Sales and Live Streaming as independent variables, FOMO as a mediating variable, and Impulsive Buying as a dependent variable (Sugiyono, 2019). Variable its independence is Flash Sale and Live Streaming, variables mediation is Fear of Missing Out (FOMO), whereas variables dependent is Impulsive Buying .

Population studies This is TikTok Shop users, especially Indonesians who have see or use feature Flash Sale and Live Streaming. Purposive sampling technique was used. For choose appropriate sampling technique with relevant criteria with objective research (Sugiyono, 2019). Respondents in study This determined based on a number of criteria , namely : (1) TikTok Shop users ; (2) watching or participate in Live Streaming TikTok Shop; (3) ever see or utilise TikTok Shop Flash Sale ; and (4) activities purchase via TikTok Shop.

Total certainty population that meets criteria the Not yet can confirmed Because No official data is available showing accumulation TikTok Shop consumers, especially Indonesians who have use feature Flash Sale, following Live Streaming, and do Purchases. Therefore, the size was calculated using the Lemeshow formula with a 10% margin of error (Lemeshow et al., 1991). Based on the calculation results, the minimum sample size was rounded to 100 respondents. This number is also considered appropriate for partial least squares equation modeling (PLS-SEM), as it meets the minimum sample requirements recommended in PLS-SEM (Hair et al., 2019).

The data used in this study are primary data obtained through the distribution of an online questionnaire to respondents who met the research criteria with the help of Google Forms. the covers indicator For variables following : flash sale, recording direct, FOMO, and purchasing impulsive. Response respondents measured on a 5- point Likert scale with option 1 = very much not agree , 2 = no agree , 3 = neutral , 4 = agree , and 5 = strongly agree

Measurement every variables in study This use adapted indicators from study previously. Table 1 presents definition operational code indicators, statements indicators, and sources of each variable study.

Table 1. Definitions Operational and Indicators Variables Study

Variables	Code	Indicator Statement	Source
Flash Sale (X1)	FS1	TikTok Shop Flash Sale offers attractive discounts	Hartono & Ingriana (2025)
	FS2	The limited time Flash Sale made me want to buy it immediately	Babu et al. (2026)
	FS3	Limited stock in Flash Sale makes the product feel more valuable	Gierl et al. (2008)
Live Streaming (X2)	LS1	TikTok Shop Live Streaming makes me feel close to the seller	Wongkitrungrueng et al. (2020)
	LS2	Product demonstration in Live Streaming makes me more confident in buying	Lin et al. (2023)
	LS3	TikTok Shop Live Streaming creates a fun shopping atmosphere	Khoi et al. (2023)
FOMO (M)	FM1	I'm afraid of missing out on the best deals on TikTok Shop	Truong (2025)
	FM2	I feel anxious if I don't participate in Flash Sale or Live Streaming	Rachman et al. (2024)

	FM3	I'm worried someone else will get a better deal if I don't buy soon.	Zhang & Rosli (2025)
Impulsive Buying (Y)	IB1	I bought a product without any prior planning when I saw a Flash Sale on TikTok Shop.	Lee & Chen (2021)
	IB2	I often feel compelled to buy immediately when I see an offer on TikTok Shop.	Lin et al. (2023)
	IB3	I buy more than I planned when there is a Flash Sale or Live Streaming	Li & Deng (2026)

Research Data Analysis Techniques This using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4. PLS-SEM was chosen because it can study the relationship between latent variables while simultaneously testing mediation models (Hair et al., 2019) . analysis covers evaluation of measurement models (outer models) and evaluation of structural models (inner models).

Evaluation of measurement models done for test validity and reliability instrument study. Validity test convergent done with see outer loading value and Average Variance Extracted (AVE). A indicator considered valid if the outer loading value is above 0.70 and the AVE value exceeds 0.50.

Furthermore, the reliability construct measured using Cronbach's Alpha and Composite Reliability. construct considered reliable If Composite Reliability value above 0.70 and Cronbach's Alpha value in range that can accepted (Hair et al., 2019).

Structural model evaluation done for test connection between variables in the research model, namely Flash Sale, Live Streaming, FOMO, and Impulsive Buying . Model testing with inspect R-square value, coefficient path, t- statistic, p- value, and effect No direct. Testing hypothesis use bootstrapping method, with criteria hypothesis accepted If t- statistic value exceed of 1.96 and p -value less of 0.05 (Hair et al., 2019).

RESULTS AND DISCUSSION

Result

Convergent Validity

Validity test convergent done for evaluate to what extent each indicator capable measure variables latent. In study this, validity test convergent seen based on outer loading value. A indicator declared valid if own outer loading value is greater of 0.70 (Hair et al., 2019).

Table 2. Hasil Uji Outer Loading

Variabel	Indikator	Outer Loading	Kriteria
FOMO	FM1	0,773	Valid
FOMO	FM2	0,743	Valid
FOMO	FM3	0,840	Valid
Flash Sale	FS1	0,728	Valid
Flash Sale	FS2	0,727	Valid
Flash Sale	FS3	0,828	Valid
Impulsive Buying	IB1	0,807	Valid
Impulsive Buying	IB2	0,736	Valid
Impulsive Buying	IB3	0,824	Valid
Live Streaming	LS1	0,805	Valid
Live Streaming	LS2	0,758	Valid
Live Streaming	LS3	0,771	Valid

Source : Processed data researchers use SmartPLS 4, 2026.

Based on Table 2, all indicators have outer loading values above 0.70, indicating that all measurement items meet the recommended threshold for convergent validity. Therefore, all indicators were retained for further analysis.

Reliability and Convergent Validity

The reliability test was performed to examine the internal consistency of each construct using Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). The results are presented in Table 3.

Table 3. Results of Reliability and AVE Tests

Variables	Cronbach's Alpha	Composite Reliability	AVE	Information
FOMO	0.692	0.829	0.618	Reliable
Flash Sale	0.638	0.806	0.582	Reliable
Impulsive Buying	0.698	0.832	0.624	Reliable
Live Streaming	0.674	0.822	0.606	Reliable

Source : Processed data researchers use SmartPLS 4, 2026.

Based on Table 3, all constructs have Composite Reliability values above 0.70 and AVE values above 0.50, indicating satisfactory reliability and convergent validity. Therefore, all constructs are suitable for further structural model analysis.

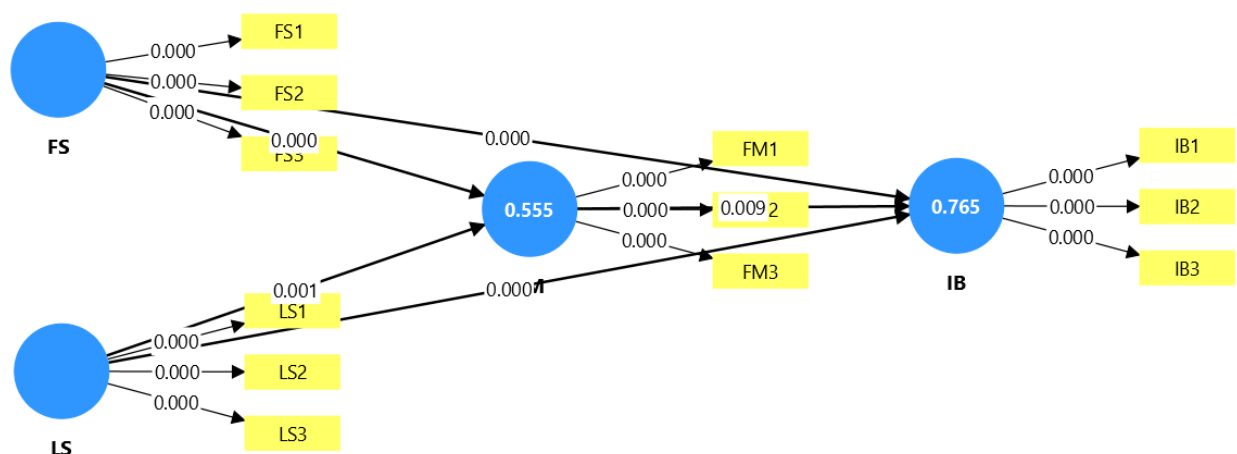
R-Square Test

The coefficient of determination (R^2) was evaluated to determine the explanatory power of the structural model. The R-square values for the endogenous variables are presented in Table 4.

Table 4. R-Square Test Results

Variables	R-square	Information
FOMO	0.555	Currently
Impulsive Buying	0.765	Strong

Source : Data processed by researchers use SmartPLS 4, 2026.



Structural Model (Inner Model)

Source : Data processed by researchers use SmartPLS 4, 2026.

Based on Table 4, the R-square value of FOMO is 0.555, while the R-square value of Impulsive Buying is 0.765. These results indicate that the proposed model has moderate to substantial explanatory power in explaining the endogenous constructs.

Direct Effect

The direct effect analysis was conducted using the bootstrapping procedure to examine the significance of the proposed hypotheses. The results of the direct effect test are presented in Table 5.

Table 5. Hypothesis Test Results Direct

Hypothesis	Connection	Original Sample	T-statistic	P-value	Information
H1	FS → FM	0,499	5,635	0,000	Accepted
H2	LS → FM	0,322	3,391	0,001	Accepted
H3	FS → IB	0,333	3,546	0,000	Accepted
H4	LS → IB	0,436	5,596	0,000	Accepted
H5	FM → IB	0,226	2,595	0,009	Accepted

Source : Processed data use SmartPLS 4 (2026).

Based on Table 5, all direct relationships have t-statistics greater than 1.96 and p-values lower than 0.05. Therefore, hypotheses H1 to H5 are supported, indicating that all proposed direct effects are statistically significant.

Indirect Effect

The indirect effect analysis was performed to examine the mediating role of Fear of Missing Out (FOMO) in the proposed research model. The results are presented in Table 6.

Table 6. Mediation Test Results

Hypothesis	Mediation Relationship	Original Sample	T-statistic	P-value	Information
H6	Flash Sale → FOMO → Impulsive Buying	0.113	2,326	0.020	Accepted
H7	Live Streaming → FOMO → Impulsive Buying	0.073	1,982	0.048	Accepted

Source : Processed data use SmartPLS 4 (2026).

Based on Table 6, the indirect effects of Flash Sale and Live Streaming on Impulsive Buying through FOMO are statistically significant. Therefore, FOMO successfully mediates both relationships, supporting hypotheses H6 and H7. Findings This confirms that FOMO acts as variables mediation in connection Flash Sale and Live Streaming with Impulsive Buying among TikTok Shop users.

Discussion

The findings of this study indicate that Flash Sale positively influences Fear of Missing Out (FOMO). Limited-time discounts and promotional offers encourage consumers to perceive that purchasing opportunities are scarce and may not be available again. As a result, consumers experience a stronger psychological urge to make immediate purchasing decisions to avoid missing attractive offers. This finding supports the Stimulus–Organism–Response (S-O-R) theory, where Flash Sale functions as an external stimulus that triggers consumers' psychological responses. The result is also consistent with Hartono and Ingriana (2025), who stated that flash sale strategies create a sense of urgency that encourages consumers' purchasing behaviour.

Furthermore, Live Streaming was found to have a positive influence on FOMO. Interactive communication, real-time product demonstrations, and exclusive promotional information presented during live streaming sessions increase consumers' emotional engagement and create a feeling that they may lose valuable opportunities if they postpone their purchases. This finding is in line with Truong (2025) and Zhang and Rosli (2025), who reported that live-

streaming activities strengthen consumers' purchasing motivation through psychological mechanisms such as FOMO.

The findings also reveal that Flash Sale and Live Streaming positively affect Impulsive Buying. Attractive discounts, limited purchasing periods, and interactive shopping experiences encourage consumers to make spontaneous purchasing decisions without extensive evaluation. These results indicate that both promotional strategies effectively stimulate impulsive buying behaviour in the context of social commerce. This finding supports previous studies showing that promotional activities and interactive online shopping environments significantly influence consumers' purchase decisions.

In addition, Fear of Missing Out (FOMO) positively influences Impulsive Buying. Consumers with stronger concerns about missing attractive promotions or limited product availability are more likely to make immediate purchasing decisions. This finding demonstrates that psychological factors play an important role in encouraging impulsive buying behaviour in digital commerce. Accordingly, FOMO represents the organism component within the Stimulus–Organism–Response (S-O-R) framework, linking external marketing stimuli with consumers' behavioural responses.

Finally, the mediation analysis confirms that FOMO strengthens the influence of Flash Sale and Live Streaming on Impulsive Buying. This indicates that promotional strategies become more effective when they successfully generate consumers' fear of missing purchasing opportunities. Therefore, Flash Sale and Live Streaming not only directly encourage purchasing behaviour but also indirectly influence consumers through the psychological mechanism of FOMO. Overall, these findings reinforce the applicability of the Stimulus–Organism–Response (S-O-R) theory in explaining consumer behaviour on TikTok Shop and provide practical implications for sellers and digital marketers in designing promotional strategies that increase consumer engagement and purchasing decisions.

CONCLUSION

Based on results research, Flash Sale and Live Streaming proven give influence positive and significant related to FOMO among TikTok Shop consumers. Furthermore, Flash Sales, Live Streaming, and FOMO also have an impact. positive and significant to Impulsive Buying. FOMO is also proven play a role as variables mediation in connection between Flash Sale and Live Streaming to Impulsive Buying. Findings This indicates that promotional strategy limited time and experience shopping interactive in Live Streaming can increase fear left behind offer, so that potential strengthen trend consumer in do Impulsive Buying. In general practical, doer business on TikTok Shop can optimize Flash Sale and Live Streaming For increase interest purchase, but still need guard transparency information, quality products and ethics promotion so as not to cause pressure excessive on consumers. Research furthermore can expand coverage sample as well as enter variables others, such as perceived enjoyment, trust, or price discount, as well as compare several social commerce platforms so that the results study more can generalized.

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