

Financial Literacy, Live Commerce, Scarcity, and Double-Date Discounts: E-Commerce Impulsive Buying in S-O-R

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ABSTRACT

The rapid development of TikTok Live commerce has transformed how consumers interact with sellers and make purchasing decisions. This study examines the effects of TikTok Live commerce, scarcity, and double-date discount campaigns on impulse buying, with financial literacy as a moderating variable. A quantitative cross-sectional survey was conducted with 131 Indonesian TikTok users who had watched TikTok Live selling sessions and purchased products through TikTok Shop. The data were analyzed using partial least squares structural equation modeling (PLS-SEM). The findings show that TikTok Live commerce has a significant negative effect on impulse buying ($b = -0.160$, $p = 0.030$), while double-date discount campaigns also have a significant negative effect ($b = -0.486$, $p < 0.001$). Scarcity has no significant effect ($b = 0.087$, $p = 0.273$). Financial literacy does not significantly moderate the effects of TikTok Live commerce, scarcity, or double-date discount campaigns on impulse buying (all $p > 0.05$). The model explains 29.9% of the adjusted variance in impulse buying. These findings suggest that promotional interactivity, urgency, and scheduled discounts do not necessarily generate unplanned purchases among the respondents. Social commerce businesses should therefore emphasize credible information, product transparency, and engaging customer experiences.

Keywords: Double-Date Discounts; Financial Literacy; Impulsive Buying; Scarcity; Live Commerce

JEL Classification: D11, D91, M31

INTRODUCTION

The rapid development of digital technology and internet penetration has transformed social media platforms into integrated social commerce ecosystems, enabling consumers to explore products, interact with sellers, and make purchases within a single platform. TikTok has become one of the leading social commerce platforms through its TikTok Live feature, which provides real-time product demonstrations, interactive communication, and engaging shopping experiences.

The interactive nature of TikTok Live, combined with marketing strategies such as scarcity and double-date discounts, is considered capable of stimulating impulsive buying behavior. This growth is particularly evident in Indonesia, which was reported as having the largest number of TikTok users in the world in 2025, underscoring the platform's exceptional penetration and relevance as a research context for social commerce behavior (Pau & Sengge, 2025). Scarcity creates a sense of urgency through limited stock or time-limited promotions, while double date campaigns such as 9.9, 10.10, and 11.11 offer attractive price reductions that may encourage spontaneous purchasing decisions.

A growing body of empirical research supports the link between these digital marketing stimuli and impulsive buying. Within the Stimulus–Organism–Response (S-O-R) framework, Feng et al. (2024) surveyed 837 livestreaming shoppers in China and found that scarcity persuasion and price perception moderate the effects of social influence and consumers' cognitive and affective reactions on impulsive buying. In the Indonesian TikTok Shop context, Rasyid and Farida (2023) demonstrated that price discounts and hedonic shopping value significantly drive impulsive purchases. However, evidence on financial literacy as a moderator remains inconsistent: Ningtyas and Vania (2022) found that financial literacy did not moderate the relationship between materialism and online impulsive buying among post-millennial consumers, while Sheruly and Koentary (2023) examined financial literacy alongside self-control as moderators of the effect of parasocial relationships on impulsive buying tendencies among young women. These mixed findings suggest that the role of financial literacy in shaping consumer responses to promotional stimuli is still unsettled, particularly within the interactive, real-time environment of live-streaming commerce, a gap this study seeks to address.

However, the increasing experience and awareness of digital consumers raise questions regarding the effectiveness of these promotional strategies. Consumers today have greater access to product information and better awareness of financial consequences, indicating that financial literacy may play an important role in influencing responses to marketing stimuli.

This study adopts the S-O-R Theory proposed by Mehrabian and Russell (1974), which explains that external stimuli influence individuals' internal cognitive and emotional processes and subsequently determine behavioral responses. In this study, TikTok Live Commerce, scarcity, and double-date discount campaigns represent external stimuli, while financial literacy functions as an internal cognitive factor that may moderate consumers' impulsive buying behavior.

Although previous research has examined the relationship between social commerce features and impulsive buying, studies integrating financial literacy as a moderating variable within the S-O-R framework remain limited, particularly in the context of TikTok Live commerce in Indonesia. Therefore, this study aims to investigate the effects of TikTok Live Commerce, scarcity, and double-date discounts on impulsive buying and to

examine the moderating role of financial literacy. This study offers novelty by simultaneously testing three distinct marketing stimuli, interactive live commerce, scarcity cues, and seasonal double-date discounts, together with financial literacy as a moderator within a single S-O-R model, a combination that has not been jointly examined in prior TikTok Live commerce studies in Indonesia. Theoretically, the findings contribute to the digital consumer behavior literature by clarifying whether financial literacy still functions as a rational safeguard against promotional urgency in an increasingly saturated social commerce environment. Practically, the results are expected to provide actionable insights for social commerce businesses and marketers in designing promotional strategies that align with the behavior of an increasingly experienced and financially aware digital consumer base.

LITERATURE REVIEW

Stimulus–Organism–Response (S-O-R) Theory

The S-O-R Theory proposed by Mehrabian and Russell (1974) provides a comprehensive framework for understanding how environmental stimuli influence individual psychological states and subsequently shape behavioral responses. The model explains that external stimuli (S) affect the internal processes of individuals (O), including cognitive and emotional reactions, which ultimately lead to specific behavioral responses (R).

In digital marketing and social commerce environments, the S-O-R framework has been widely applied to explain online consumer behavior, particularly how technological features, promotional messages, and interactive experiences influence consumers' decision-making processes. The characteristics of social commerce platforms, including real-time interaction, multimedia presentations, and personalized communication, serve as external stimuli that may trigger consumers' psychological responses and purchasing behavior.

Within the context of TikTok Live commerce, live streaming interaction, scarcity messages, and double-date discount campaigns are categorized as marketing stimuli. These stimuli may influence consumers' perceptions, emotions, and decision-making processes when engaging with online shopping activities. Meanwhile, financial literacy represents an individual's cognitive capability in understanding and managing financial resources, which may influence how consumers evaluate marketing information and control purchasing impulses.

The final response in this framework is impulsive buying behavior, which occurs when consumers make spontaneous and unplanned purchasing decisions due to immediate emotional reactions rather than rational evaluation. Therefore, the S-O-R framework provides an appropriate theoretical foundation for examining how TikTok Live marketing strategies affect impulsive buying behavior and whether financial literacy can reduce consumers' vulnerability to persuasive marketing stimuli.

Hypotheses Development

TikTok Live Commerce and Impulsive Buying

Live streaming commerce has transformed conventional online shopping into an interactive and immersive experience by combining entertainment, communication, and purchasing activities within a single digital environment. Unlike traditional e-commerce platforms, live streaming enables real-time interaction between sellers and consumers through product demonstrations, direct communication, and instant feedback.

According to the S-O-R perspective, TikTok Live functions as a powerful external stimulus because it provides visual attractiveness, social interaction, and entertainment value that may influence consumers' psychological responses. Within this framework, TikTok Live Commerce represents the Stimulus (S) component; the resulting sense of engagement, trust, and emotional attachment it generates constitutes the Organism (O) component, reflecting consumers' internal affective and cognitive processing; and impulsive buying behavior represents the behavioral Response (R) that follows once this internal state is activated. The presence of hosts, real-time conversations, and product demonstrations may increase consumer engagement, trust, and emotional attachment, potentially encouraging spontaneous purchasing behavior. The applicability of the S-O-R framework in platform-based impulsive buying has been further confirmed by [Hongsuchon et al. \(2025\)](#), who demonstrated that influencer-driven stimuli on social commerce websites significantly shape consumers' emotional states and subsequent impulsive purchasing behavior.

Previous studies have reported that live streaming features positively influence consumers' purchasing intentions and impulsive buying behavior. [Lin et al. \(2022\)](#) found that interactivity and playfulness in live-streaming shopping increase perceived enjoyment, which subsequently promotes impulsive purchase intention. Similarly, [Wongkitrungrueng and Assarut \(2020\)](#) argued that trust developed between hosts and audiences during live streaming can increase consumers' tendency to make unplanned purchases. In addition, [Zhang et al. \(2023\)](#) highlighted that the combination of entertainment, social interaction, and instant purchasing opportunities in short-video platforms creates a shopping atmosphere that encourages impulsive consumption. This engagement-to-purchase pathway is consistent with the S-O-R logic, in which an emotionally engaging stimulus heightens internal arousal, which in turn manifests as an unplanned behavioral outcome. In the Indonesian context, [Kusumatirta et al. \(2025\)](#) found that shoppable live streams significantly stimulate consumers' purchase intention, reinforcing the relevance of TikTok Live's interactive shopping format in driving unplanned purchasing behavior among Indonesian social commerce users. Based on these theoretical explanations and empirical findings, this study proposes the following hypothesis:

H1: TikTok Live Commerce positively and significantly affects impulsive buying behavior.

Scarcity and Impulsive Buying

Scarcity is a marketing strategy that creates perceptions of limited availability regarding products, promotional periods, or purchasing opportunities. Messages such as "limited stock" and "available only today" are frequently employed in digital marketing to create urgency and encourage consumers to make immediate decisions.

The theoretical foundation of scarcity can be explained through Scarcity Theory proposed by [Cialdini \(2009\)](#), which argues that individuals tend to assign higher value to products perceived as scarce or difficult to obtain. The perception of limited availability generates a fear of missing out (FOMO), which increases consumers' motivation to secure the opportunity before it disappears.

Additionally, Psychological Reactance Theory introduced by [Brehm and Brehm \(2013\)](#) suggests that individuals experience psychological discomfort when they perceive limitations on their freedom of choice. This discomfort motivates them to regain control by taking immediate action, including purchasing limited products. Mapped onto the S-O-R model, the scarcity message itself is the Stimulus (S); the resulting FOMO and psychological reactance represent the Organism (O) state, an emotionally charged,

urgency-driven cognitive process; and the accelerated, unplanned purchase decision constitutes the Response (R).

In digital shopping environments, scarcity messages often reduce consumers' decision-making time and increase emotional responses, making impulsive purchases more likely to occur. Recent evidence from live-stream commerce shows that scarcity-related promotions can activate anticipated emotions and influence scarcity-induced purchase decisions (Qu et al., 2023). Scarcity persuasion has also been found to condition consumers' impulse-buying responses during livestream shopping (Feng et al., 2024). This sequence illustrates how a time- or quantity-based stimulus bypasses deliberate evaluation by intensifying the organism's urgency state, consistent with the core S-O-R proposition that heightened internal arousal shortens the path from stimulus to behavioral response. Therefore, the following hypothesis is proposed:

H2: Scarcity positively and significantly affects impulsive buying behavior.

Double-Date Discounts and Impulsive Buying

Double-date discounts, such as 9.9, 10.10, and 11.11 promotional campaigns, have become one of the most common pricing strategies in digital commerce. These campaigns create a shopping event that combines substantial price reductions, limited promotional periods, and collective excitement among consumers.

From the perspective of Promotion Theory, price discounts function as external marketing stimuli that increase consumers' perceptions of economic benefits and product value (Kotler & Keller, 2016). Consumers may perceive discounted products as opportunities to obtain greater value, which encourages faster purchasing decisions.

Furthermore, Mental Accounting Theory developed by Thaler (1985) explains that consumers categorize financial gains and losses mentally. A discount may be perceived as a financial gain, creating positive emotions and reducing the perceived cost of purchasing. Consequently, consumers may focus more on the perceived savings rather than the actual necessity of the product. In S-O-R terms, the double-date discount campaigns operate as the Stimulus (S); the perception of financial gain and the accompanying positive affect represent the Organism (O) component, as consumers mentally reframe the purchase as a reward rather than an expense; and the resulting spontaneous purchase constitutes the Response (R).

Several studies have confirmed that promotional discounts can stimulate impulsive buying behavior. Xu and Huang (2014) reported that substantial price discounts significantly increase consumers' spontaneous purchases because they perceive a limited opportunity for financial savings. Likewise, Zhang et al. (2023) found that event-based digital promotions strengthen emotional responses and increase impulsive buying tendencies. Therefore, the following hypothesis is proposed:

H3: Double-date discounts positively and significantly affect impulsive buying behavior.

Financial Literacy as a Moderating Variable

Financial literacy refers to individuals' knowledge, skills, and confidence in managing financial resources and making effective economic decisions. Consumers with high financial literacy tend to evaluate purchasing decisions more rationally, consider future financial consequences, and demonstrate better self-control over unnecessary spending.

Within the S-O-R framework, financial literacy is theorized as a boundary condition operating at the Organism (O) stage: rather than acting as a stimulus itself, it shapes how consumers cognitively process and emotionally respond to the marketing stimuli described above. Consumers with higher financial literacy are expected to interpret live streaming engagement, scarcity cues, and discount framing through a more analytical, deliberative lens, thereby dampening the emotional arousal that would otherwise translate stimuli into impulsive Response (R).

The Theory of Planned Behavior explains that individuals with stronger perceived behavioral control are more capable of regulating their actions according to rational considerations (Ajzen, 2020). In the context of consumer behavior, financial literacy can strengthen self-control and reduce the likelihood of impulsive purchasing.

Moreover, Human Capital Theory proposed by Becker (1964) considers financial knowledge as a form of human capital that enhances individuals' decision-making quality. Consumers with greater financial capability are expected to be less influenced by emotional marketing stimuli, such as urgency messages, limited offers, and attractive price promotions.

Previous studies have shown that financial literacy negatively influences impulsive buying behavior and can reduce consumers' susceptibility to persuasive marketing strategies (Lusardi & Mitchell, 2014; Organisation for Economic Co-operation and Development [OECD], 2023). Therefore, financial literacy is expected to weaken the influence of TikTok Live commerce, scarcity, and double-date discounts on impulsive buying. Accordingly, the following hypotheses are proposed:

H4: Financial literacy weakens the positive influence of TikTok Live Commerce on impulsive buying behavior.

H5: Financial literacy weakens the positive influence of scarcity on impulsive buying behavior.

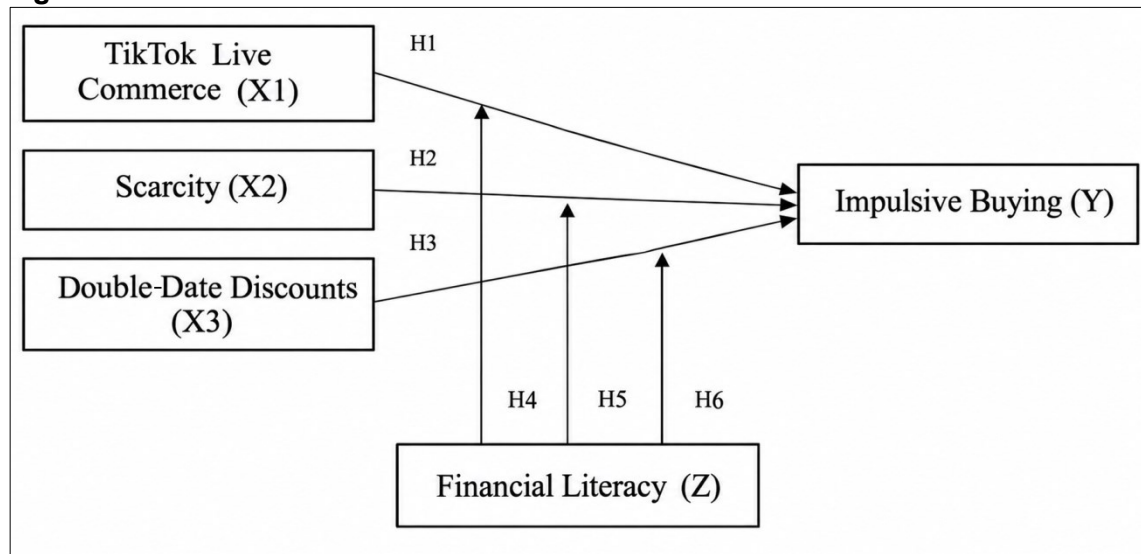
H6: Financial literacy weakens the positive influence of double-date discounts on impulsive buying behavior.

Conceptual Framework

Based on the S-O-R framework, this study positions TikTok Live Commerce, scarcity, and double-date discounts as external stimuli that influence consumers' impulsive buying behavior. Financial literacy functions as an internal cognitive factor that moderates the relationship between these marketing stimuli and consumer responses. The research framework is presented in Figure 1.

The conceptual model proposes that stronger marketing stimuli increase consumers' tendency toward impulsive buying, while higher financial literacy reduces the strength of this relationship by encouraging more rational purchasing decisions.

Figure 1. Research Framework



RESEARCH METHOD

Research Design

This study employed a quantitative explanatory research design with a causal associative approach to investigate the relationships among TikTok Live Commerce, scarcity, double-date discounts, financial literacy, and impulsive buying behavior. A quantitative approach was considered appropriate because the research aims to empirically examine the causal relationships among predefined constructs using statistical analysis.

The theoretical foundation of this research is based on the S-O-R framework, which explains that environmental stimuli influence individuals' internal cognitive and psychological conditions, leading to specific behavioral responses. In the context of this study, TikTok Live Commerce, scarcity, and double-date discount promotions represent external stimuli that may influence consumers' purchasing responses. Financial literacy serves as an internal cognitive capability that may affect consumers' ability to evaluate marketing stimuli and regulate their purchasing behavior, while impulsive buying represents the final behavioral response.

This study adopted a cross-sectional survey design, where data were collected from respondents at a single point in time through an online questionnaire. The cross-sectional approach was selected because it enables researchers to capture consumers' perceptions and behaviors toward TikTok Live shopping experiences efficiently within a specific research period.

Population and Sampling Technique

The population of this study consisted of Indonesian consumers who actively use TikTok and have experience watching TikTok Live Shopping as well as purchasing products through TikTok Shop. Since there is no comprehensive database containing all TikTok Live consumers in Indonesia, the exact population size is considered unknown.

Therefore, this study applied a non-probability sampling approach using purposive sampling combined with snowball sampling techniques. Purposive sampling was employed to ensure that respondents fulfilled the predetermined criteria relevant to the

research objectives, whereas snowball sampling facilitated broader access to the targeted consumer groups through respondents' social networks.

The final sample consisted of 131 respondents who met three eligibility criteria: Indonesian citizenship and a minimum age of 17 years; active TikTok use and exposure to TikTok Live selling sessions at least three times during the previous six months; and at least one purchase through TikTok Shop. These criteria were intended to ensure that respondents possessed sufficient direct experience with TikTok Live shopping to provide meaningful responses to the research constructs.

The sample size was determined using the Margin of Error (MoE) approach due to the unknown population size. This method is commonly used in social science research involving large and undefined populations. The final sample of 131 respondents was considered sufficient for estimating the proposed Partial Least Squares Structural Equation Modeling (PLS-SEM), which included seven paths directed toward the endogenous construct. Nevertheless, the study used the available eligible responses rather than a formal a priori power analysis; therefore, this limitation should be acknowledged when interpreting statistical power, particularly for the interaction effects.

Measurement and Operationalization of Variables

All constructs in this study were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), while demographic variables were measured using categorical scales. The measurement items were adapted from previously validated studies to ensure the validity and reliability of the research instrument. Table 1 shows the operationalization of each research variable, including the dimensions, indicators, and questionnaire items used to measure Financial Literacy (Z), TikTok Live Commerce (X1), Scarcity (X2), Double-Date Discounts (X3), and Impulsive Buying (Y).

Table 1. Operationalization of Research Variables

Variable	Dimension	Indicator	Questionnaire Item
Financial Literacy (Z) (Lusardi & Mitchell, 2014; OECD 2023)	Financial Knowledge	Understanding of needs and wants, interest, inflation, and financial risk	I understand the difference between needs and wants.
			I understand the impact of interest rates on the money I own.
			I understand that inflation can reduce purchasing power.
	Financial Attitude	Financial planning and prudence	I am accustomed to planning my financial expenditures.
			I consider potential risks before making a purchase.
	Financial Behavior	Budgeting and saving	I manage my expenses according to my income.
			I regularly save part of my income.
TikTok Live Commerce (X1) (Hovland & Weiss, 1951; Sun et al., 2019; Wongkitrungrueng & Assarut,	Interactivity	Host responsiveness, speed of chat replies, and opportunities for audience interaction	TikTok Live hosts respond to my questions quickly.
			I can interact directly with the host during the live session.
			Communication during TikTok Live feels interactive and two-way.
	Live Presentation Quality	Video quality, audio quality, and clarity of product demonstration	The video display during TikTok Live is clear.
			The host's voice can be heard clearly during the live session.

2020; Xu et al., 2020)			Products are presented and demonstrated clearly.
	Host Credibility	Host expertise, honesty, and trust in the host's recommendations	TikTok Live hosts have good knowledge of the products they present.
			I trust the explanations provided by the host.
			The host provides honest information about the products.
	Entertainment Value Uses and Gratifications Theory	Enjoyable, non-boring, and interesting live experience	Watching TikTok Live is entertaining.
			TikTok Live does not feel boring.
			I enjoy the atmosphere during the live session.
	Informational Value	Completeness of product information, ease of understanding, and support for purchase decisions	TikTok Live provides complete product information.
			The information presented is easy to understand.
			Information provided during TikTok Live helps me make purchasing decisions.
Scarcity (X2) (Aggarwal et al., 2011; Cialdini, 2009)	Time Scarcity	Limited promotional period	I feel the need to purchase immediately because the promotion has a time limit.
			"Limited time" information encourages me to make an immediate purchase.
	Quantity Scarcity	Limited product availability	I worry that the product will be out of stock if I do not purchase it immediately.
			Information about limited stock makes me want to check out and complete the purchase immediately.
Double-Date Discounts (X3) (Kotler & Keller, 2016; Thaler, 1985)	Perceived Price Saving	Saving money and obtaining greater value	Double-date discounts make products feel cheaper.
			I feel that I gain more benefits when shopping during double date promotions.
	Attractiveness	Appealing and tempting promotions	Double date promotions appear more attractive compared to regular shopping days.
	Urgency Effect	Immediate purchasing encouragement	Discounts offered during specific promotional events (e.g., Super Brand Day) encourage me to purchase products immediately.
			Double date promotions influence my purchasing decisions.
Impulsive Buying (Y) (Rook & Fisher, 1995)	Spontaneity	Unplanned purchases	I often purchase products spontaneously.
			I buy products without prior planning.
	Emotional Impulse	Feeling excited and tempted	I am tempted to buy products due to a sudden impulse.
			I feel happy after making spontaneous purchases.

	Lack of Consideration	Not comparing alternatives	I purchase products suddenly without comparing them with other alternatives.
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Data Collection Procedure

Primary data were collected using an online questionnaire distributed through various social media platforms and online shopping communities. The questionnaire consisted of three sections.

The first section contained screening questions designed to ensure that respondents met the established sample criteria. The second section collected demographic information, including age, gender, and online shopping frequency. The final section consisted of measurement items related to TikTok Live Commerce, scarcity, double-date discounts, financial literacy, and impulsive buying behavior.

Before conducting the full data analysis, the collected responses were reviewed to eliminate incomplete responses and ensure that the dataset fulfilled the requirements for PLS-SEM analysis.

Data Analysis Technique

The collected data were analyzed using PLS-SEM through SmartPLS software. PLS-SEM was selected because it is suitable for analyzing complex causal relationships involving multiple latent constructs, reflective indicators, and moderating effects.

The analysis consisted of two major stages: evaluation of the measurement model (outer model) and evaluation of the structural model (inner model). The outer model assessment examined the validity and reliability of the research instrument. Convergent validity was evaluated through outer loading values above 0.70 and Average Variance Extracted (AVE) values above 0.50. Discriminant validity was assessed using the Fornell–Larcker criterion and cross-loading values. Reliability was evaluated using Composite Reliability and Cronbach's Alpha values, with acceptable values exceeding 0.70.

Table 2. Evaluation of the Measurement Model (Outer Model)

Type of Assessment	Parameter	Description
Convergent Validity	Outer Loading > 0.70	To assess whether the indicators are capable of accurately measuring their respective latent constructs.
	AVE (Average Variance Extracted) > 0.50	
Discriminant Validity	Cross Loading (the loading value of an indicator on its own construct must be higher than its loading values on other constructs)	To examine whether each construct is conceptually distinct and different from other constructs in the research model.
	Fornell–Larcker Criterion or HTMT < 0.90	
Reliability	Composite Reliability (CR) > 0.70	To evaluate the internal consistency and reliability of respondents' answers in the questionnaire.
	Cronbach's Alpha > 0.70	

Table 2 summarizes the type of assessment, parameters, and descriptions used to evaluate the measurement model. After the measurement model fulfilled the required

criteria, the structural model was evaluated by examining the coefficient of determination (R^2), path coefficients, and the significance of the direct and interaction effects.

Hypothesis testing was performed using the bootstrapping procedure. The hypotheses were accepted when the t-statistic exceeded 1.96 and the p-value was below 0.05 at a 5% significance level. Additionally, the moderating effect of financial literacy was examined using the two-stage approach in PLS-SEM. The interaction effects between financial literacy and each independent variable were analyzed to determine whether financial literacy strengthened or weakened the influence of TikTok Live Commerce, scarcity, and double-date discounts on impulsive buying behavior.

RESULT

Respondents' Demographic Profile

This study collected responses from 131 respondents through an online questionnaire. The demographic characteristics of the respondents are described based on age, occupation, monthly income, monthly expenditure, domicile, social media ownership, and e-commerce account ownership.

Table 3. Respondents' Demographic Profile (N= 131)

Category	Description	Frequency (n)	Percentage (%)
Age	18 years old	25	19.1
	19 years old	18	13.7
	20 years old	22	16.8
	21 years old	17	13
	22 years old	23	17.6
	23 years old	16	12.2
	24 years old	5	3.8
	25 years old	5	3.8
Occupation	Student	115	87.8
	Other (private employees and entrepreneurs)	16	12.2
Domicile	Jakarta	38	29
	Bogor	37	28.2
	Depok	31	23.7
	Bekasi	14	10.7
	Tangerang	11	8.4
Monthly Income	Rp1,000,000 – Rp5,000,000	121	92.4
	Rp5,000,000 – Rp10,000,000	10	7.6
Monthly Expenditure	Rp1,000,000 – Rp5,000,000	119	90.8
	Other (below Rp1,000,000 and Rp5,000,000–Rp10,000,000)	12	9.2
Social Media*	WhatsApp	131	100
	Instagram	120	91.6
	TikTok	99	75.6
	X	56	42.7
	Facebook	22	16.8
E-Commerce Platform*	Shopee	111	84.7
	Tokopedia	81	61.8
	Lazada	29	22.1
	Blibli	26	19.8

Note: *Social media and e-commerce platform categories allowed multiple responses.

As presented in Table 3, the majority of respondents were between 18 and 22 years old. Respondents aged 18 accounted for the largest proportion (25 respondents; 19.1%), followed by those aged 22 (23 respondents; 17.6%), 20 (22 respondents; 16.8%), 19 (18 respondents; 13.7%), 21 (17 respondents; 13.0%), and 23 (16 respondents; 12.2%). Respondents aged 24 and 25 each accounted for the smallest share (5 respondents; 3.8% each). This distribution indicates that the sample was dominated by late adolescents and young adults, consistent with the target population of active TikTok Shop users.

Most respondents were students, representing 87.8% of the total sample, while the remainder consisted of private employees and entrepreneurs in smaller proportions. No respondents identified as civil servants/police, freelancers, professionals, or homemakers. Respondents were primarily located in the Greater Jakarta (Jabodetabek) area, with the largest proportions from Jakarta (29%), Bogor (28.2%), and Depok (23.7%), followed by Bekasi (approximately 10.7%) and Tangerang (8.4%).

The majority of respondents (92.4%) reported a monthly income between Rp1,000,000 and Rp5,000,000, while the remaining 7.6% earned between Rp5,000,000 and Rp10,000,000. No respondents reported income below Rp1,000,000. Similarly, monthly expenditure was concentrated in the Rp1,000,000–Rp5,000,000 range (90.8%), with the remaining respondents distributed across the below Rp1,000,000 and Rp5,000,000–Rp10,000,000 categories.

All respondents (100%) owned a WhatsApp account, followed by Instagram (91.6%), TikTok (75.6%), X (42.7%), and Facebook (16.8%). The high ownership of TikTok accounts supports the relevance of the sample for examining TikTok Live Commerce behavior. Shopee was the most widely used e-commerce platform (84.7%), followed by Tokopedia (61.8%), Lazada (22.1%), and Blibli (19.8%).

Overall, the sample predominantly comprised students aged 18–22 who resided in Greater Jakarta and reported monthly income and expenditure within the Rp1,000,000–Rp5,000,000 range. Respondents also reported extensive use of social media and e-commerce platforms, supporting the relevance of the sample to the TikTok Live commerce context.

Measurement Model Evaluation (Outer Model)

The measurement model evaluation was conducted to assess the validity and reliability of the research instrument before testing the proposed structural relationships. In PLS-SEM, the evaluation of the outer model includes convergent validity, discriminant validity, and reliability assessment. Figure 2 presents the PLS algorithm results, showing the outer loading values, path coefficients, and R^2 values used in this evaluation.

Double-Date Discounts (X3)	X3.01.01	0.737	0.700	Valid
	X3.01.02	0.890	0.700	Valid
	X3.02.01	0.757	0.700	Valid
	X3.03.01	0.799	0.700	Valid
	X3.03.02	0.802	0.700	Valid
Impulsive Buying (Y)	Y.01.01	0.801	0.700	Valid
	Y.01.02	0.837	0.700	Valid
	Y.02.01	0.759	0.700	Valid
	Y.02.02	0.751	0.700	Valid
	Y.03.01	0.902	0.700	Valid
Financial Literacy (Z)	Z01.01	0.746	0.700	Valid
	Z01.02	0.813	0.700	Valid
	Z01.03	0.735	0.700	Valid
	Z02.01	0.822	0.700	Valid
	Z02.02	0.860	0.700	Valid
	Z03.01	0.755	0.700	Valid
	Z03.02	0.767	0.700	Valid
LSCT (X1) * LK (Z)		0.882	0.700	Valid
Sy (X2) * LK (Z)		1.107	0.700	Valid
DDD (X3) * LK (Z)		1.021	0.700	Valid

Based on Table 4, the results showed that all indicators achieved outer loading values greater than 0.70, indicating that each indicator adequately represented its respective construct. The lowest loading value was 0.714 for the TikTok Live Commerce indicator, whereas the highest value reached 0.902 for the Impulsive Buying indicator. Therefore, all measurement items fulfilled the convergent validity requirements and were retained for further analysis.

Furthermore, the AVE values of all constructs exceeded the recommended threshold of 0.50. TikTok Live Commerce obtained an AVE value of 0.560, scarcity reached 0.677, double-date discounts achieved 0.638, impulsive buying obtained 0.660, and financial literacy reached 0.619. The interaction constructs representing the moderating effects also demonstrated AVE values of 1.000. These findings confirm that all constructs possess satisfactory convergent validity.

Table 5. Convergent Validity Test Results (AVE)

Construct	AVE	Status
TikTok Live Commerce (X1)	0.560	Valid
Scarcity (X2)	0.677	Valid
Double-Date Discounts (X3)	0.638	Valid
Impulsive Buying (Y)	0.660	Valid
Financial Literacy (Z)	0.619	Valid
Moderation X1 to Y by Z	1.000	Valid
Moderation X2 to Y by Z	1.000	Valid
Moderation X3 to Y by Z	1.000	Valid

Based on the Table 5, the AVE results demonstrate that all constructs have satisfied the convergent validity criterion, with AVE values exceeding the recommended threshold of 0.5. The AVE values for TikTok Live Commerce (X1), Scarcity (X2), Double-Date Discounts (X3), Impulsive Buying (Y), and Financial Literacy (Z) are 0.560, 0.677, 0.638, 0.660, and 0.619, respectively. In addition, the interaction terms representing the moderating effects of Financial Literacy on the relationships between TikTok Live

Commerce, Scarcity, and Double-Date Discounts toward Impulsive Buying each have an AVE value of 1.000.

Reliability Analysis

Reliability assessment was performed using Composite Reliability (CR) and Cronbach's Alpha to determine the internal consistency of the measurement model. A construct is considered reliable when both CR and Cronbach's Alpha values exceed 0.70.

Table 6. Composite Reliability Test Results

Construct	Composite Reliability	Cronbach's Alpha	Status
TikTok Live Commerce (X1)	0.950	0.945	Reliable
Scarcity (X2)	0.913	0.880	Reliable
Double-Date Discounts (X3)	0.898	0.857	Reliable
Impulsive Buying (Y)	0.906	0.871	Reliable
Financial Literacy (Z)	0.919	0.919	Reliable
Moderation X1 to Y by Z	1.000	1.000	Reliable
Moderation X2 to Y by Z	1.000	1.000	Reliable
Moderation X3 to Y by Z	1.000	1.000	Reliable

As presented in Table 6, the findings indicated that all constructs achieved excellent reliability. TikTok Live Commerce recorded a Composite Reliability value of 0.950 and Cronbach's Alpha of 0.945. Scarcity showed CR and Alpha values of 0.913 and 0.880, respectively. Double-date discounts achieved values of 0.898 and 0.857, while impulsive buying demonstrated values of 0.906 and 0.871. Financial literacy also exhibited strong reliability with a Composite Reliability value of 0.919 and Cronbach's Alpha above the acceptable threshold. These results indicate that all measurement items consistently measured their intended constructs.

Discriminant Validity

Discriminant validity was examined using the Fornell–Larcker criterion and cross-loading analysis. The Fornell–Larcker results revealed that the square root of AVE for each construct was greater than its correlations with other constructs. This finding indicates that each latent variable represents a distinct concept and does not overlap substantially with other variables in the model.

Table 7. Fornell Larcker Criterion Test Results

Construct	X3	Y	Z	X1	X1 -> Z -> Y	X2 -> Z -> Y	X3 -> Z -> Y	X2
DDD (X3)	0.799							
IB (Y)	-0.526	0.812						
LK (Z)	-0.124	0.143	0.787					
LSCT (X1)	0.124	-0.269	-0.214	0.748				
ME X1 to Y by Z	0.053	-0.119	0.225	0.102	1.000			
ME X2 to Y by Z	0.064	-0.013	-0.149	0.005	-0.328	1.000		
ME X3 to Y by Z	-0.168	0.020	0.356	0.046	0.333	-0.430	1.000	
Sy (X2)	-0.198	0.234	0.174	-0.264	0.006	-0.085	0.069	0.823

As presented in Table 7, the cross-loading analysis further supported discriminant validity, as each indicator showed a higher loading on its corresponding construct

compared with the loading values on other constructs. Consequently, all constructs in this study demonstrated satisfactory discriminant validity and were appropriate for structural model analysis.

Table 8. Discriminant Validity Test Results (Cross Loading)

Construct	X3	Y	Z	X1	X1 -> Z -> Y	X2 -> Z -> Y	X3 -> Z -> Y	X2
DDD (X3) * LK (Z)	-0.168	0.020	0.356	0.046	0.333	-0.430	1.000	0.069
LSCT (X1) * LK (Z)	0.053	-0.119	0.225	0.102	1.000	-0.328	0.333	0.006
Sy (X2) * LK (Z)	0.064	-0.013	-0.149	0.005	-0.328	1.000	-0.430	-0.085
X1.01.01	0.081	-0.157	-0.113	0.714	0.066	0.042	-0.054	-0.128
X1.01.02	0.156	-0.174	-0.219	0.724	0.086	0.069	-0.053	-0.232
X1.01.03	0.057	-0.182	-0.215	0.728	0.151	-0.046	0.030	-0.173
X1.02.01	0.158	-0.325	-0.206	0.768	0.014	0.005	0.010	-0.220
X1.02.02	0.113	-0.183	-0.141	0.745	-0.051	0.006	0.023	-0.206
X1.02.03	0.067	-0.224	-0.257	0.771	0.004	0.051	-0.022	-0.271
X1.03.01	0.089	-0.218	-0.121	0.754	0.129	0.066	0.053	-0.188
X1.03.02	0.124	-0.261	-0.197	0.854	0.069	0.040	0.112	-0.252
X1.03.03	0.041	-0.129	-0.099	0.721	0.017	0.084	0.031	-0.086
X1.04.01	0.017	-0.181	-0.136	0.748	0.027	0.006	0.012	-0.107
X1.04.02	0.070	-0.089	-0.084	0.717	0.148	-0.091	0.016	-0.078
X1.04.03	-0.024	-0.045	-0.144	0.751	0.152	-0.132	0.084	-0.136
X1.05.01	0.068	-0.208	-0.127	0.746	0.187	-0.118	0.075	-0.188
X1.05.02	0.073	-0.110	-0.025	0.750	0.202	-0.101	0.130	-0.215
X1.05.03	0.136	-0.189	-0.153	0.719	0.123	-0.012	0.103	-0.304
X2.01.01	-0.141	0.180	0.076	-0.158	-0.089	-0.025	-0.051	0.736
X2.01.02	-0.202	0.170	0.072	-0.176	-0.031	-0.125	0.053	0.835
X2.02.01	-0.150	0.171	0.226	-0.269	0.060	-0.059	0.117	0.832
X2.02.02	-0.177	0.195	0.179	-0.256	0.088	-0.068	0.086	0.858
X2.02.03	-0.149	0.232	0.155	-0.224	-0.006	-0.076	0.076	0.847
X3.01.01	0.737	-0.361	-0.193	0.183	0.067	0.055	-0.096	-0.211
X3.01.02	0.890	-0.419	-0.127	0.083	-0.022	0.102	-0.158	-0.211
X3.02.01	0.757	-0.444	-0.120	0.099	0.047	0.035	-0.118	-0.155
X3.03.01	0.799	-0.396	-0.009	0.073	0.036	0.035	-0.143	-0.097
X3.03.02	0.802	-0.462	-0.056	0.072	0.081	0.031	-0.151	-0.123
Y.01.01	-0.424	0.801	0.128	-0.227	-0.142	-0.043	-0.019	0.208
Y.01.02	-0.485	0.837	0.169	-0.218	-0.096	-0.046	-0.013	0.146
Y.02.01	-0.297	0.759	0.076	-0.191	-0.032	0.018	0.049	0.107
Y.02.02	-0.400	0.751	0.080	-0.195	-0.032	-0.009	0.014	0.239
Y.03.01	-0.488	0.902	0.112	-0.255	-0.152	0.031	0.057	0.232
Z01.01	-0.040	0.011	0.746	-0.198	0.116	-0.149	0.333	0.170
Z01.02	-0.060	0.065	0.813	-0.189	0.103	-0.119	0.309	0.201
Z01.03	-0.011	-0.022	0.735	-0.165	0.188	-0.238	0.365	0.161
Z02.01	-0.164	0.140	0.822	-0.143	0.211	-0.089	0.316	0.140

Z02.02	-0.062	0.149	0.860	-0.208	0.187	-0.185	0.299	0.160
Z03.01	-0.066	0.036	0.755	-0.103	0.263	-0.096	0.264	0.070
Z03.02	-0.104	0.053	0.767	-0.204	0.174	-0.100	0.242	0.085

Based on Table 8, the loading values of each indicator on their respective constructs are greater than their loading values on other constructs. This result indicates that all indicators have achieved satisfactory discriminant validity, and no discriminant validity issues were identified.

Structural Model Evaluation (Inner Model)

After confirming that the measurement model satisfied the validity and reliability requirements, the next stage involved evaluating the structural model to determine the predictive capability of the proposed research model.

Coefficient of Determination (R²)

The coefficient of determination (R²) measures the proportion of variance in the endogenous variable explained by the exogenous variables included in the model.

Table 9. R² Value of Endogenous Variables

Endogenous Variable	R Square	R Square Adjusted
Impulsive Buying (Y)	0.337	0.299

As shown in Table 9, the model produced an R² value of 0.337 and an adjusted R² value of 0.299 for impulse buying. Accordingly, the predictors explained 33.7% of the observed variance in impulse buying, while the adjusted explanatory value was 29.9% after accounting for the number of predictors in the model.

Although the explanatory power of the model can be categorized as moderate, the result indicates that digital marketing stimuli and consumers' financial capability contribute to explaining impulsive buying behavior in the social commerce environment.

Goodness of Fit (GoF)

The overall model fit was evaluated using the Goodness of Fit (GoF) index, which reflects the combined performance of the measurement and structural models. Based on the calculation, the GoF value was 0.446.

Goodness of Fit (GoF) Small GoFI = 0.1

Goodness of Fit (GoF) Average = 0.25

Goodness of Fit (GoF) Big = 0.38

Goodness of Fit (GoF) Formula:

$$\begin{aligned}
 \text{GoF (Impulsive Buying Y)} &= \sqrt{AVE \times R^2} \\
 &= \sqrt{0.666 \times 0.299} \\
 &= 0.446
 \end{aligned}$$

According to the recommended criteria, a GoF value above 0.38 indicates a large model fit. Therefore, the obtained value suggests that the proposed model has strong explanatory capability and demonstrates a good level of compatibility between the theoretical framework and the empirical data.

Hypothesis Testing

The hypotheses were examined using the bootstrapping procedure in SmartPLS. The significance of each relationship was evaluated based on the t-statistic and p-value, with

the acceptance criteria of t-statistic > 1.96 and p-value < 0.05. Table 10 presents the results of the direct relationship hypothesis testing, including the path coefficients, t-statistics, p-values, and decisions for each hypothesized relationship.

Table 10. Results of Direct Relationship Hypothesis Testing

	Hypothesis and Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Decision
H1	TikTok Live Commerce (X1) -> Impulsive Buying (Y)	-0.160	-0.180	0.073	2.180	0.030	Significant
H2	Scarcity(X2) -> Impulsive Buying (Y)	0.087	0.095	0.079	1.097	0.273	Not Significant
H3	Double-Date Discounts (X3) -> Impulsive Buying (Y)	-0.486	-0.485	0.068	7.166	0.000	Significant
AP	Financial Literacy (Z) -> Impulsive Buying (Y)	0.072	0.058	0.134	0.536	0.592	Not Significant
H4	Moderation TikTok Live Commerce (X1) to Impulsive Buying (Y) by Financial Literacy (Z) -> Impulsive Buying (Y)	-0.086	-0.069	0.081	1.070	0.285	Not Significant
H5	Moderation Scarcity (X2) to Y by Z -> Impulsive Buying (Y)	-0.016	-0.011	0.078	0.203	0.839	Not Significant
H6	Moderation Double-Date Discounts (X3) to Impulsive Buying (Y) by Financial Literacy (Z) -> Impulsive Buying (Y)	-0.067	-0.061	0.100	0.667	0.505	Not Significant

Note: AP = Additional path included in the structural model but not hypothesized.

As shown in Table 10, the analysis revealed that TikTok Live Commerce had a significant negative effect on impulsive buying ($\beta = -0.160$; $t = 2.180$; $p = 0.030$). This finding indicates that greater exposure to TikTok Live features does not necessarily increase impulsive buying behavior. Instead, consumers may use live streaming sessions as a source of product information and comparison before making more rational purchasing decisions.

The effect of scarcity on impulsive buying was found to be statistically insignificant ($\beta = 0.087$; $t = 1.097$; $p = 0.273$). This result suggests that limited-time offers and limited-stock messages are no longer sufficiently persuasive to trigger impulsive purchasing among contemporary digital consumers.

Furthermore, double-date discounts showed a significant negative influence on impulsive buying ($\beta = -0.486$; $t = 7.166$; $p < 0.001$). This finding indicates that consumers may perceive double date promotional campaigns as planned shopping opportunities rather than emotional triggers for spontaneous purchasing.

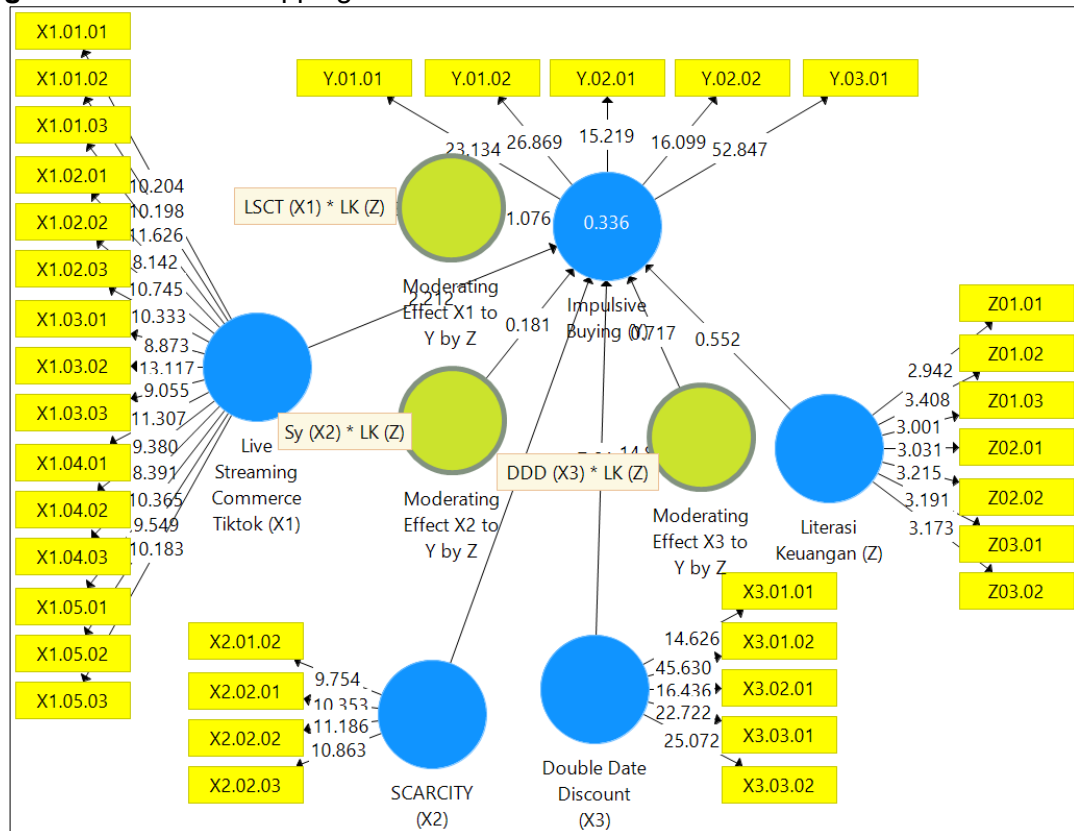
Financial literacy did not significantly influence impulsive buying directly ($\beta = 0.072$; $t = 0.536$; $p = 0.592$). Similarly, the moderating effects of financial literacy on the

relationships between TikTok Live Commerce, scarcity, and double-date discounts toward impulsive buying were statistically insignificant.

Specifically, the interaction between financial literacy and TikTok Live Commerce produced a coefficient of -0.086 ($t = 1.070$; $p = 0.285$). The interaction between financial literacy and scarcity showed a coefficient of -0.016 ($t = 0.203$; $p = 0.839$), while the interaction between financial literacy and double-date discounts produced a coefficient of -0.067 ($t = 0.667$; $p = 0.505$).

Therefore, the findings indicate that financial literacy does not significantly weaken the influence of digital marketing stimuli on impulsive buying behavior among TikTok consumers. Figure 3 illustrates the complete PLS bootstrapping results, visually confirming the path coefficients and significance levels reported in Table 10.

Figure 3. PLS Bootstrapping Results



DISCUSSION

TikTok Live Commerce and Impulsive Buying (H1)

The results show that TikTok Live Commerce has a significant negative effect on impulsive buying ($\beta = -0.160$, $t = 2.180$, $p = 0.030$). H1, which hypothesized a positive effect, is therefore not supported; the relationship is significant, but in the opposite direction from what was proposed.

This finding contrasts with Lin et al. (2022), who found that interactivity and playfulness increase perceived enjoyment and impulsive purchase intention in live-streaming shopping, and with Wongkitrungrueng and Assarut (2020), who argued that host-audience trust built during live streaming increases consumers' tendency toward unplanned purchases. It also differs from recent TikTok-related evidence showing that

platform marketing, influencer credibility, entertainment, and scarcity cues can strengthen impulse-buying tendencies among Generation Z consumers (Gadi et al., 2025).

Substantively, this divergence suggests that TikTok Live audiences in this sample may be using the format differently than the engagement-to-impulse pathway these earlier studies describe. Rather than being swept into spontaneous purchases by real-time interaction, viewers appear to treat live sessions as an information and comparison channel, watching product demonstrations, reading host explanations, and observing other viewers' questions before deciding whether to buy. This is consistent with a more experienced TikTok Shop user base: as live commerce has matured in Indonesia, consumers have had more exposure to the format and more opportunity to learn how to use it evaluatively rather than react to it emotionally. The practical implication is that sellers cannot rely on the interactivity of live streaming alone to convert viewers into impulsive buyers; live sessions may instead need to be designed around building product credibility and answering objections, with conversion happening deliberately rather than spontaneously.

Scarcity and Impulsive Buying (H2)

Scarcity was found to have no significant effect on impulsive buying ($\beta = 0.087$, $t = 1.097$, $p = 0.273$). Therefore, H2 is not supported.

This finding differs from Qu et al. (2023), who showed that anticipated emotions contribute to scarcity-induced purchase decisions in live-stream commerce, and Feng et al. (2024), who identified scarcity persuasion as an important condition shaping livestream impulse buying. The theoretical foundation of scarcity can be explained through Scarcity Theory proposed by Cialdini (2009), which argues that individuals tend to assign higher value to products perceived as scarce or difficult to obtain, thereby generating a FOMO that increases consumers' motivation to secure the opportunity before it disappears. Previous empirical studies have shown that scarcity significantly influences impulsive buying behavior. Aggarwal et al. (2011) demonstrated that limited-time and limited-quantity scarcity messages increase consumers' perceived urgency and significantly heighten their spontaneous purchasing tendencies, particularly when the scarcity cue signals high competitive demand for the product.

Substantively, this non-significant result suggests that scarcity cues, "limited stock," "available only today," and similar urgency messaging, may have lost some of their persuasive force in a platform environment where such messages are now ubiquitous. When scarcity framing appears in nearly every livestream and product listing, consumers may become desensitized to it, treating it as a routine sales tactic rather than a genuine signal of limited availability. This does not mean scarcity is irrelevant to consumer psychology in general; rather, it indicates that in a saturated social commerce environment, urgency messaging alone is no longer sufficient to bypass consumers' evaluative process. For practitioners, this implies that scarcity tactics likely need to be paired with credible, verifiable cues (e.g., visible real-time stock counters, authentic transaction activity) rather than used as a purely rhetorical prompt.

Double-Date Discounts and Impulsive Buying (H3)

Double-Date Discounts has a negative and significant effect on impulsive buying ($\beta = -0.486$, $t = 7.166$, $p < 0.001$). H3, which hypothesized a positive effect, is not supported, and this is the strongest effect in the entire model.

This is further supported by [Imbayani and Gama \(2024\)](#), who applied an S-O-R perspective to demonstrate that discounts significantly heighten consumers' urge to buy impulsively, which in turn translates into actual impulsive buying behavior on e-commerce platforms. This result is at odds with [Xu and Huang \(2014\)](#), who reported that substantial price discounts significantly increase consumers' spontaneous purchases due to perceived limited savings opportunities.

The magnitude and direction of this effect are the most substantively interesting finding of the study. Rather than triggering spontaneous purchases, higher exposure to double-date campaigns (9.9, 10.10, 11.11, and similar) appears to make consumers more calculative: because these campaigns recur predictably on the calendar, consumers may have learned to defer non-urgent purchases until the next scheduled discount event rather than buy on impulse now. In other words, the very periodicity that makes double-date promotions effective as a demand-generation tool may also be training consumers into a planning habit that suppresses impulsive buying in between events. For social commerce businesses, this suggests that double-date campaigns may be more effective at concentrating and timing already-intended purchases than at generating genuinely unplanned ones, which has implications for how their success should be measured (e.g., share-of-wallet capture during the event) rather than assumed to reflect impulsive demand creation.

Financial Literacy as a Moderator (H4–H6)

Financial literacy does not significantly moderate any of the three relationships examined in this study. The interaction between TikTok Live commerce and financial literacy has no significant effect on impulse buying ($\beta = -0.086$, $t = 1.070$, $p = 0.285$); therefore, H4 is not supported. Similarly, the interaction between scarcity and financial literacy is not significant ($\beta = -0.016$, $t = 0.203$, $p = 0.839$), indicating that H5 is not supported. The interaction between double-date discount campaigns and financial literacy is also not significant ($\beta = -0.067$, $t = 0.667$, $p = 0.505$); therefore, H6 is not supported. The additional direct effect of financial literacy on impulse buying is likewise insignificant ($\beta = 0.072$, $t = 0.536$, $p = 0.592$).

These results contrast with the general expectation set out by [Lusardi and Mitchell \(2014\)](#) and [OECD \(2023\)](#), who argue that financial literacy reduces consumers' susceptibility to persuasive marketing strategies by strengthening rational financial decision-making.

Substantively, the absence of a moderating effect across all three stimuli suggests that financial knowledge and financial behavior in the moment of purchase may operate somewhat independently in this context. Knowing how to budget or evaluate financial trade-offs in the abstract does not automatically translate into resistance to marketing stimuli experienced inside a fast-paced, entertainment-driven environment like TikTok Live. This is consistent with a broader pattern already visible in the direct-effect results (H1 and H3): the significant negative effects of TikTok Live Commerce and Double-Date Discounts indicate that consumers in this sample are already behaving cautiously toward these stimuli regardless of their financial literacy level, which may partly explain why financial literacy adds no further moderating power: there may be a floor effect, where the sample's baseline caution leaves little additional impulsive tendency for financial literacy to suppress. For social commerce practitioners, this implies that consumer education campaigns framed purely around financial literacy are unlikely to be an effective lever for managing impulsive buying; behavioral cues embedded directly in the purchase environment likely matter more than a consumer's general financial competence.

CONCLUSION

Based on the results of data analysis using PLS-SEM, the research model satisfied the required validity and reliability criteria, confirming its suitability for examining the proposed relationships. The structural model evaluation revealed that TikTok Live Commerce, scarcity, double-date discounts, and financial literacy jointly explained 29.9% of the variance in impulsive buying behavior, with the remaining variance attributable to factors outside the scope of this study.

The findings indicate that this study's TikTok Shop consumers respond to digital marketing stimuli more rationally and deliberately than the impulsive-buying literature typically assumes for live and social commerce settings. Rather than confirming a straightforward engagement-to-impulse pipeline, the results reframe the theoretical understanding of the S-O-R framework in the TikTok Live commerce context, suggesting boundary conditions under which the Organism stage produces evaluative, rather than impulsive, responses. Financial literacy did not moderate consumers' responses to these marketing stimuli, suggesting that financial knowledge and in-the-moment purchasing behavior operate somewhat independently within the fast-paced, entertainment-driven environment of TikTok Live.

Practically, the results imply that social commerce businesses should not rely on the interactivity of live streaming, scarcity framing, or promotional urgency alone to drive impulsive purchases. Instead, strategies should prioritize product credibility, transparent information, and long-term trust-building, since an increasingly experienced and information-oriented consumer base is likely to evaluate promotional stimuli critically before purchasing, regardless of financial literacy level.

LIMITATION

This study has several limitations that should be acknowledged when interpreting the findings. First, this study employed a cross-sectional design, in which data were collected from respondents at a single point in time. This design limits the ability to capture changes in consumer behavior over time or to establish strict causal ordering among the constructs. Since the negative effects found for TikTok Live Commerce and double-date discounts suggest a learning-based, more calculative consumer response, a longitudinal design would be better suited to observe whether this rational pattern strengthens, weakens, or shifts as consumers gain further experience with TikTok Live commerce.

Second, the sampling technique relied on non-probability purposive and snowball sampling, since no comprehensive sampling frame of Indonesian TikTok Live consumers exists. While this approach was appropriate given the unknown population size, it limits the generalizability of the findings to the broader population of TikTok Shop users, as the sample may over-represent respondents connected through similar social networks rather than reflecting the full diversity of Indonesian digital consumers.

Third, all constructs were measured using self-reported responses on a Likert scale. Self-report measures are susceptible to social desirability bias and may not fully capture actual purchasing behavior, particularly for a construct such as impulsive buying, which by definition involves spontaneous, low-deliberation decisions that respondents may struggle to recall or report accurately after the fact.

Fourth, the model's coefficient of determination ($R^2 = 0.299$) indicates that TikTok Live Commerce, scarcity, double-date discounts, and financial literacy jointly explain only a moderate proportion of the variance in impulsive buying, leaving approximately 70% of

the variance attributable to factors not examined in this study, such as peer influence, platform algorithm exposure, product category, or individual impulsivity traits. The explanatory scope of the present model is therefore limited, and the non-significant and negative findings should be interpreted within this bounded model rather than as a complete account of impulsive buying behavior on TikTok Shop.

Fifth, this study focused exclusively on TikTok Live commerce within the Indonesian context. Consumer responses to live streaming, scarcity, and discount stimuli may differ across platforms (e.g., Shopee Live, Instagram Live Shopping) and across cultural or economic contexts, limiting the extent to which these findings can be generalized beyond the specific platform and population studied.

Finally, financial literacy was examined solely as a moderating variable using a two-stage approach in PLS-SEM. This study did not explore alternative psychological or behavioral moderators such as self-control, impulsivity traits, or parasocial relationships with livestream hosts, that may better explain why financial literacy did not significantly weaken the marketing stimuli's effects. Future research is encouraged to incorporate such variables to test whether the floor effect proposed in the Discussion holds when alternative boundary conditions are considered.

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DECLARATION OF CONFLICTING INTERESTS

The authors have declared no potential conflicts of interest concerning the study, authorship, and/or publication of this article.

REFERENCES

- Aggarwal, P., Jun, S. Y., & Huh, J. H. (2011). Scarcity messages. *Journal of Advertising*, 40(3), 19–30. <https://doi.org/10.2753/JOA0091-3367400302>
- Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human Behavior and Emerging Technologies*, 2(4), 314–324. <https://doi.org/10.1002/hbe2.195>
- Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. University of Chicago Press.
- Brehm, S. S., & Brehm, J. W. (2013). *Psychological Reactance: A Theory of Freedom and Control*. Academic Press.
- Cialdini, R. B. (2009). *Influence: Science and Practice* (5th ed.). Pearson Education.
- Feng, Z., Mamun, A. A., Masukujjaman, M., Wu, M., & Yang, Q. (2024). Impulse buying behavior during livestreaming: Moderating effects of scarcity persuasion and price perception. *Heliyon*, 10(7), e28347. <https://doi.org/10.1016/j.heliyon.2024.e28347>
- Gadi, P. D., Oh, Z. J., Sharma, B., Lee, W. X., Lee, X. Y., Lee, Y. Q., ..., & Kee, D. M. H. (2025). TikTok marketing and impulse buying behavior among Gen Z consumers: A case study of SHEIN Malaysia. *International Journal of Accounting and Finance in Asia Pacific*, 9(1), 121–138. <https://doi.org/10.32535/ijafap.v9i1.4395>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). Sage Publications.
- Hongsuchon, T., Chen, S. C., & Khan, A. (2025). Applying the S-O-R model to explore impulsive buying behaviour driven by influencers on social commerce websites. *PeerJ Computer Science*, 11, e3113. <https://doi.org/10.7717/peerj-cs.3113>

- Hovland, C. I., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, 15(4), 635–650.
<https://doi.org/10.1086/266350>
- Imbayani, I. G. A., & Gama, A. W. S. (2024). The impact of hedonic shopping motivation, discounts, and urge to buy impulsively on impulse buying: S-O-R perspective. *International Journal of Applied Business and International Management*, 9(3), 349–364. <https://doi.org/10.32535/ijabim.v9i3.3438>
- Kotler, P., & Keller, K. L. (2016). *A Framework for Marketing Management* (15th ed.). Pearson Education.
- Kusumatirta, I. W. R., Suardhika, I. N., Atmaja, N. P. C. D., Orlanda, N. P. A., Chandra, I. G. A. A. D. P., Darma, I. W. A. B., & Dewi, A. A. A. P. (2025). The impact of shoppable live streaming and brand trust on purchase decisions: The mediating role of purchase intention in ShopTokopedia platforms. *Journal of International Conference Proceedings*, 8(2), 27–40. <https://doi.org/10.32535/jicp.v8i2.4181>
- Liao, S. L., Shen, Y. C., & Chu, C. H. (2009). The effects of sales promotion strategy, product appeal and consumer traits on reminder impulse buying behaviour. *International Journal of Consumer Studies*, 33(3), 274–284.
<https://doi.org/10.1111/j.1470-6431.2009.00770.x>
- Lin, S.-C., Tseng, H.-T., Shirazi, F., Hajli, N., & Tsai, P.-T. (2022). Exploring factors influencing impulse buying in live streaming shopping: A stimulus–organism–response (S-O-R) perspective. *Asia Pacific Journal of Marketing and Logistics*, 35(6), 1383–1403. <https://doi.org/10.1108/APJML-12-2021-0903>
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44.
<https://doi.org/10.1257/jel.52.1.5>
- Mehrabian, A., & Russell, J. A. (1974). *An Approach to Environmental Psychology*. MIT Press.
- Ningtyas, M. N., & Vania, A. (2022). Materialism, financial literacy, and online impulsive buying: a study on the post millennial generation in a pandemic period. *Journal of Theory and Applied Management*, 15(1), 1–12.
<https://doi.org/10.20473/jmtt.v15i1.33774>
- Organisation for Economic Co-operation and Development (OECD). (2023). *OECD/INFE 2023 International Survey of Adult Financial Literacy* (OECD Business and Finance Policy Papers, No. 39). OECD Publishing.
<https://doi.org/10.1787/56003a32-en>
- Pau, A. I. K., & Sengge, A. (2025, August 9). *Indonesia Puncaki Daftar Pengguna TikTok Terbanyak Dunia 2025*. Radio Republik Indonesia. Retrieved from <https://rri.co.id/hiburan/1757559/indonesia-puncaki-daftar-pengguna-tiktok-terbanyak-dunia-2025>
- Qu, Y., Khan, J., Su, Y., Tong, J., & Zhao, S. (2023). Impulse buying tendency in live-stream commerce: The role of viewing frequency and anticipated emotions influencing scarcity-induced purchase decision. *Journal of Retailing and Consumer Services*, 75, 103534.
<https://doi.org/10.1016/j.jretconser.2023.103534>
- Rasyid, C. N., & Farida, L. (2023). The effect of price discount and hedonic shopping value on impulsive buying at TikTok Shop. *Jurnal Ilmiah Manajemen Ekonomi dan Akuntansi*, 7(3), 245–257. <https://doi.org/10.31955/mea.v7i3.3340>
- Rook, D. W., & Fisher, R. J. (1995). Normative influences on impulsive buying behavior. *Journal of Consumer Research*, 22(3), 305–313. <https://doi.org/10.1086/209452>
- Sheruly, I., & Koentary, A. S. S. (2023). The effect of parasocial relationship on online impulsive buying tendency: Exploring the role of financial literacy and self-control. *TAZKIYA Journal of Psychology*, 11(2), 114–131.
<https://doi.org/10.15408/tazkiya.v11i2.31281>

- Sun, Y., Shao, X., Li, X., Guo, Y., & Nie, K. (2019). How live streaming influences purchase intentions in social commerce: An IT affordance perspective. *Electronic Commerce Research and Applications*, 37, 100886.
- Thaler, R. H. (1985). Mental accounting and consumer choice. *Marketing Science*, 27(1), 15–25. <https://doi.org/10.1287/mksc.4.3.199>
- Wongkitrungrueng, A., & Assarut, N. (2020). The role of live streaming in building consumer trust and engagement with social commerce sellers. *Journal of Business Research*, 117, 543–556. <https://doi.org/10.1016/j.jbusres.2018.08.032>
- Xu, X., Wu, J. H., & Li, Q. (2020). What drives consumer shopping behavior in live streaming commerce? *Journal of Electronic Commerce Research*, 21(3), 144–167.
- Xu, Y., & Huang, J. S. (2014). Effects of price discounts and bonus packs on online impulse buying. *Social Behavior and Personality: An International Journal*, 42(8), 1293–1302. <https://doi.org/10.2224/sbp.2014.42.8.1293>
- Zhang, L., Chen, M., & Zamil, A. M. A. (2023). Live stream marketing and consumers' purchase intention: An IT affordance perspective using the S-O-R paradigm. *Frontiers in Psychology*, 14, 1069050. <https://doi.org/10.3389/fpsyg.2023.1069050>

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