International Journal of Management Science and Information Technology
IJMSIT

E-ISSN: 2774-5694 P-ISSN: 2776-7388 OPEN ACCESS

Volume 6 (2), July-December 2026, 3174-3183
DOI: https://doi.org/10.35870/ijmsit.v6i2.9014

BNPL Ease of Use, Perceived Risk, and Financial Literacy as Predictors of Impulsive Buying among TikTok Shop Users

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Article history:
Received October 17, 2026
Revised November 8, 2026
Accepted November 10, 2026

Abstract

This study examines the effects of BNPL ease of use, perceived risk, and This study examines the effects of BNPL ease of use, perceived risk, and financial literacy on the impulsive-buying behaviour of TikTok Shop users. Social-commerce platforms that integrate live-streaming, promotional content, and embedded Buy Now Pay Later (BNPL) services have intensified unplanned purchasing among young digital consumers in Indonesia, yet the joint role of technology-use perceptions, risk perceptions, and financial literacy remains inconclusive. A quantitative associative design was adopted. Primary data were collected through a self-administered questionnaire using a five-point Likert scale from 74 students at STMB Multismart Medan who are TikTok Shop users, drawn from a population of 288 by applying the Slovin formula with a 10% margin of error and selected via accidental sampling. Data were analysed with Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 4, following a two-step evaluation of the measurement and structural models with 5,000 bootstrap resamples. The results show that BNPL ease of use ($\beta = 0.297$; $p = 0.019$), perceived risk ($\beta = 0.312$; $p = 0.008$), and financial literacy ($\beta = 0.331$; $p = 0.007$) each exhibit a positive and statistically significant association with impulsive buying. Together, the three predictors explain 67.0% of the variance in impulsive buying ($R^2 = 0.670$; adjusted $R^2 = 0.656$), indicating moderate explanatory power. The study contributes to the digital-consumer-behaviour and fintech literatures in three ways: (i) it extends the Technology Acceptance Model (TAM) from adoption intention to a post-adoption consumption outcome (impulsive buying) in a social-commerce setting; (ii) it integrates cognitive, risk, and competence antecedents in a single empirical model; and (iii) it documents counter-conventional positive associations of perceived risk and financial literacy with impulsive buying in a BNPL-enabled environment. The findings offer practical implications for platform managers, BNPL providers, and consumer-education practitioners regarding transparent risk disclosure, responsible BNPL design, and context-sensitive financial-literacy interventions. Given the single-institution, non-probability sample, the findings are indicative rather than generalisable and should be interpreted as statistical associations rather than confirmed causal effects.

Keywords:
BNPL ease of use; Perceived risk; Financial literacy; Impulsive buying; Social commerce; TikTok Shop.

1. INTRODUCTION

The rapid diffusion of mobile internet technology in Indonesia has transformed online shopping from a transactional task into a form of entertainment, interaction, and identity expression. According to the Indonesian Internet Service Providers Association (APJII, 2026), internet penetration in Indonesia reached approximately 81.72% of the population in 2026, with Generation Z representing the largest cohort of active users. Within this environment, social-commerce platforms that blend video content with embedded purchasing have grown faster than conventional marketplaces. TikTok Shop is a prominent example: APJII (2026) reports that TikTok Shop is one of the most frequently accessed online shops in Indonesia, used by more than 33.4% of users in 2026. The platform integrates product discovery, live-streaming entertainment, promotional campaigns, in-app payment, and integrated logistics in a single interface, which lowers the perceived cost of search and transaction and encourages prolonged in-app engagement.

A key enabler of this shopping environment is the proliferation of digital Buy Now Pay Later (BNPL) services, which allow consumers to defer or instalment payments through a few taps in the application. BNPL schemes shift the salience of immediate monetary cost and may thereby weaken the self-regulatory cues that normally restrain spontaneous purchases. The literature on impulsive buying describes it as an unplanned, affect-driven purchase triggered by a strong, immediate urge, with comparatively little deliberation about longer-term consequences (Redine et al., 2023). When combined with the hedonic cues of social commerce—time-limited flash sales, live-streamed product demonstrations, and personalised recommendations—BNPL may further amplify the gap between purchase intention and reflective evaluation.

The Technology Acceptance Model (TAM), originally proposed by Davis (1989), provides a useful lens for understanding how consumer perceptions of digital payment services shape downstream shopping behaviour. In TAM, perceived ease of use denotes the degree to which an individual believes that using a system is free of effort, and perceived usefulness denotes the degree to which it is believed to enhance performance; both constructs jointly determine attitudes toward a technology and, in turn, its actual use (Davis, 1989). While TAM was originally developed to explain technology adoption, subsequent research has extended it to post-adoption behaviours, including continued use, habit formation, and consumption outcomes. In the BNPL context, perceived ease of use corresponds to how effortlessly a consumer can activate, select, and complete a deferred-payment transaction within a social-commerce platform. A high level of ease of use is theorised to reduce transaction friction—the cognitive, procedural, and affective costs that normally stand between a purchase cue and a completed transaction (Redine et al., 2023).

In social-commerce environments such as TikTok Shop, transaction friction is already compressed by in-app checkout, saved payment credentials, and one-tap confirmation. Integrating BNPL into this flow further lowers the salience of the monetary sacrifice at the moment of purchase, because the deferred-payment framing postpones the perceived cost. Under TAM logic, a system that is effortless to use not only increases adoption intention but also increases the frequency with which it is used; in a social-commerce setting rich in persuasive and hedonic cues (live-streaming, limited-time flash sales, influencer endorsements), each additional use occasion is also an additional opportunity for an impulsive purchase. The model therefore provides a plausible mechanism linking BNPL ease of use to impulsive buying: lower transaction friction shortens the deliberation window between the purchase urge and the completed transaction, which is precisely the gap that impulsive-buying theory identifies as the defining feature of unplanned purchases (Redine et al., 2023).

Prior studies in the Indonesian context report that perceived ease of use positively influences attitudes toward PayLater services and the intention to adopt them (Sebayang et al., 2023; Jundiy & Ridanasti, 2024). However, most TAM-based studies stop at behavioural intention and do not extend to post-adoption consumption outcomes such as impulsive buying. Wulandjani (2026) finds that perceived ease of use of BNPL is positively associated with repeated usage and impulsive-buying tendencies among Generation Z, suggesting that the frictionless nature of BNPL may itself encourage unplanned expenditure. Evidence on this downstream link, particularly on TikTok Shop and among student consumers in regional Indonesian cities, remains limited and warrants further empirical scrutiny.

Perceived risk refers to a consumer's subjective expectation of adverse outcomes when using a particular service, encompassing financial, performance, security, social, and psychological dimensions (Kinanthi et al., 2024). In classical consumer-behaviour theory, higher perceived risk is expected to inhibit purchase. Yet, several recent studies in PayLater and BNPL contexts report counter-intuitive patterns in which perceived risk is positively associated with impulsive buying (Rosadi et al., 2024; Nurfaiza & Prayitno, 2023). Possible mechanisms include a bias toward short-term rewards over long-term costs, the salience of promotional cues that override risk considerations, and the way deferred-payment framing shifts risk perception from the moment of purchase to a vague future. Evidence on how perceived risk shapes impulsive buying in BNPL settings is still inconsistent (Wulandjani, 2026; Juita et al., 2023), providing a motivation for further investigation.

Financial literacy comprises knowledge of financial concepts and risks, together with the skills, motivation, and confidence to apply such knowledge in making effective financial decisions and improving financial well-being (OECD, 2023). A conventional reading of the construct would predict a negative relationship between financial literacy and impulsive buying, since financially literate consumers are better positioned to weigh future consequences and manage cash flow. Several studies support this intuition: Putri

and Noorrizki (2024) report that higher financial knowledge is associated with greater self-control and reduced impulsive purchasing. Other work, however, reaches different conclusions. Wahyuandari et al. (2024) find no direct effect of financial literacy on impulsive buying in e-commerce once lifestyle is taken into account, and Widiastuti and Sumastuti (2025) argue that financial literacy, PayLater usage, and shopping habits interact in complex ways. These mixed findings indicate that the relationship between financial literacy and impulsive buying may depend on contextual and behavioural moderators, especially in digital-payment-rich environments where the gap between financial knowledge and financial self-control becomes empirically visible.

Taken together, four literature gaps motivate this study. First, prior research on TAM antecedents of BNPL has focused primarily on adoption and usage intention, rather than on post-adoption consumption outcomes such as impulsive buying, leaving the downstream behavioural implications of a frictionless BNPL interface under-examined. Second, empirical evidence on the direction and strength of the effect of perceived risk on impulsive buying in BNPL and social-commerce contexts remains inconsistent, with recent studies reporting both inhibitory and positive associations. Third, the relationship between financial literacy and impulsive buying in digital-payment-rich environments also displays mixed findings, suggesting that knowledge-based literacy measures may not translate directly into behavioural restraint. Fourth, studies that jointly model BNPL ease of use, perceived risk, and financial literacy as simultaneous predictors of impulsive buying are scarce, particularly in the setting of social-commerce platforms such as TikTok Shop and among student consumers in regional Indonesian cities. This study addresses these gaps by analysing the simultaneous associations of these three antecedents with impulsive buying among TikTok Shop users at STMB Multismart Medan, using PLS-SEM. The study contributes to the digital-consumer-behaviour and fintech literatures by integrating cognitive, risk, and competence antecedents in a single model, and offers practical insights for platform managers, BNPL providers, and financial-education practitioners. Given the non-probability sample drawn from a single institution, the findings are intended as a contextual contribution rather than a basis for broad generalisation. Based on the review above, the study tests the following hypotheses:

H1: BNPL ease of use has a positive and significant association with impulsive buying among TikTok Shop users.
H2: Perceived risk has a positive and significant association with impulsive buying among TikTok Shop users.
H3: Financial literacy has a positive and significant association with impulsive buying among TikTok Shop users.
H4: BNPL ease of use, perceived risk, and financial literacy are simultaneously associated with impulsive buying.

2. RESEARCH METHOD

2.1. Research Design, Location, and Period

This study adopted a quantitative, associative research design intended to examine the relationships between BNPL ease of use, perceived risk, financial literacy, and impulsive buying (Puspitasari & Nurmaning, 2024). The study was conducted at Sekolah Tinggi Manajemen Bisnis (STMB) Multismart Medan, North Sumatra, Indonesia, between August and September 2026. Students enrolled at the institution who had used TikTok Shop constituted the target respondents.

2.2. Population, Sample, and Sampling Technique

The target population comprised 288 students who were identified by the institution as active TikTok Shop users during the research period. The sample size was determined using the Slovin formula with a 10% margin of error:

$$n = N / (1 + N e^2) = 288 / (1 + 288 \times 0.10^2) = 288 / 3.88 \approx 74.23$$

Rounding yielded a sample of 74 respondents. Inclusion criteria were: (i) currently enrolled students at STMB Multismart Medan during the research period; (ii) having completed at least one purchase on TikTok Shop; and (iii) willingness to participate voluntarily. The Slovin formula is used here as a sample-size approximation under non-probability sampling; it should not be interpreted as providing a formal confidence level, since accidental sampling violates the assumption of equal selection probabilities (Hair et al., 2021). Respondents were selected through accidental sampling: students who were present at the institution during the data-collection period and who confirmed the inclusion criteria were invited to complete the questionnaire.

2.3. Data Collection and Instrument

Primary data were collected using a self-administered structured questionnaire. The researchers visited the campus and distributed the questionnaire directly to students who met the inclusion criteria. Participation was voluntary, respondents were informed about the research purpose and their right to withdraw, and the anonymity and confidentiality of their responses were assured. No personally identifying data were collected.

All constructs were measured using multi-item reflective indicators scored on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (Wibowo et al., 2025). The operationalisation of each construct was adapted from established scales in the literature and comprised: BNPL ease of use (four indicators, X1.1–X1.4) adapted from Davis's (1989) perceived ease-of-use scale and from recent BNPL studies (Sebayang et al., 2023; Jundiy & Ridanasti, 2024); perceived risk (five indicators, X2.1–X2.5) adapted from Kinanthi et al. (2024) covering financial, security, performance, social, and psychological dimensions; financial literacy (three indicators, X3.1–X3.3) adapted from the OECD/INFE financial-literacy framework (OECD, 2023); and impulsive buying (three indicators, Y1–Y3) adapted from Redine et al. (2023). The content validity of the adapted items was reviewed by two academic colleagues with expertise in consumer behaviour and digital marketing prior to field administration.

2.4. Data Analysis

The data were analysed with Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 4 (Hair et al., 2021; Sarstedt et al., 2021). PLS-SEM was selected because the study (i) focuses on prediction and explanation of a key target construct, (ii) involves a relatively small sample, and (iii) uses reflective composite constructs. The analysis followed a two-step procedure.

First, the measurement model was evaluated for: indicator reliability (outer loadings ≥ 0.70); internal-consistency reliability (Cronbach's $\alpha \geq 0.70$; reliability coefficients ρ_a and $\rho_c \geq 0.70$); convergent validity (Average Variance Extracted, AVE ≥ 0.50); and discriminant validity via the Heterotrait–Monotrait ratio (HTMT < 0.90), the Fornell–Larcker criterion, and cross-loadings. These are the established thresholds in the PLS-SEM literature (Hair et al., 2021; Sarstedt et al., 2021).

Second, the structural model was examined by inspecting collinearity among predictors (inner VIF < 5.0), path coefficients, their statistical significance, the coefficient of determination (R^2 and adjusted R^2), and effect sizes (Cohen's f^2). Statistical inference for the path coefficients was based on a non-parametric bootstrapping procedure with 5,000 subsamples, from which t-statistics and p-values were derived. Paths with $|t| > 1.96$ and $p < 0.05$ were considered statistically significant at the 5% level. PLS-SEM does not provide a parametric F-test of simultaneous effects; joint explanatory power is evaluated through R^2 and adjusted R^2 for the endogenous construct, in line with Hair et al. (2021).

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Measurement Model Evaluation

The measurement model was evaluated for convergent validity, internal-consistency reliability, and discriminant validity. The estimated outer model with indicator loadings on the four reflective constructs.

Table 1. Convergent Validity (Outer Loadings and AVE)

Construct / Indicator	Outer Loading	AVE	Criterion	Decision
BNPL Ease of Use (X1)		0.726	≥ 0.50	Valid
X1.1	0.866		≥ 0.70	Valid
X1.2	0.828		≥ 0.70	Valid
X1.3	0.845		≥ 0.70	Valid
X1.4	0.869		≥ 0.70	Valid
Perceived Risk (X2)		0.689	≥ 0.50	Valid
X2.1	0.869		≥ 0.70	Valid
X2.2	0.711		≥ 0.70	Valid
X2.3	0.846		≥ 0.70	Valid
X2.4	0.859		≥ 0.70	Valid
X2.5	0.854		≥ 0.70	Valid
Financial Literacy (X3)		0.739	≥ 0.50	Valid
X3.1	0.850		≥ 0.70	Valid
X3.2	0.857		≥ 0.70	Valid
X3.3	0.872		≥ 0.70	Valid
Impulsive Buying (Y)		0.733	≥ 0.50	Valid
Y1	0.853		≥ 0.70	Valid
Y2	0.837		≥ 0.70	Valid
Y3	0.878		≥ 0.70	Valid

Note. AVE values are drawn from the SmartPLS 4 reliability output and are consistent with the squared diagonal of the Fornell–Larcker matrix. Source: Authors' SmartPLS 4 analysis.

All indicator loadings exceed 0.70 and all construct-level AVE values exceed 0.50, satisfying the criteria for indicator reliability and convergent validity (Hair et al., 2021).

Table 2. Internal-Consistency Reliability and AVE

Construct	Cronbach's α	ρ_a	ρ_c	AVE
BNPL Ease of Use (X1)	0.874	0.878	0.914	0.726
Perceived Risk (X2)	0.886	0.896	0.917	0.689
Financial Literacy (X3)	0.824	0.827	0.895	0.739
Impulsive Buying (Y)	0.818	0.818	0.892	0.733

Note. ρ_a = reliability coefficient rho_A; ρ_c = composite reliability (rho_c). All thresholds met: Cronbach's α ≥ 0.70; ρ_a ≥ 0.70; ρ_c ≥ 0.70; AVE ≥ 0.50. Source: Authors' SmartPLS 4 analysis.

Table 2 shows that all four constructs exhibit Cronbach's α, ρ_a, and ρ_c values well above 0.70, indicating adequate internal-consistency reliability.

Table 3. Heterotrait–Monotrait Ratio (HTMT)

Construct	Y	X1	X3	X2
Impulsive Buying (Y)	—			
BNPL Ease of Use (X1)	0.859	—		
Financial Literacy (X3)	0.855	0.771	—	
Perceived Risk (X2)	0.821	0.779	0.662	—

Note. All HTMT values are below the conservative 0.90 threshold recommended by Hair et al. (2021). Source: Authors' SmartPLS 4 analysis.

Table 4. Fornell–Larcker Criterion

Construct	Y	X1	X3	X2
Impulsive Buying (Y)	0.856			
BNPL Ease of Use (X1)	0.730	0.852		
Financial Literacy (X3)	0.705	0.659	0.860	
Perceived Risk (X2)	0.705	0.688	0.570	0.830

Note. Values on the diagonal are the square roots of the AVE for each construct; off-diagonal values are inter-construct correlations. Source: Authors' SmartPLS 4 analysis.

The diagonal values in Table 4 (√AVE) exceed the inter-construct correlations in the corresponding rows and columns, confirming that each construct is empirically distinct. Together with the HTMT results in Table 3 and the cross-loadings reported in Table 5, these outcomes support discriminant validity.

Table 5. Cross-Loadings

Indicator	Impulsive Buying (Y)	BNPL Ease of Use (X1)	Financial Literacy (X3)	Perceived Risk (X2)
X1.1	0.590	0.866	0.534	0.603
X1.2	0.616	0.828	0.541	0.584
X1.3	0.589	0.845	0.553	0.550
X1.4	0.684	0.869	0.611	0.607
X2.1	0.561	0.576	0.433	0.869
X2.2	0.463	0.473	0.400	0.711
X2.3	0.593	0.608	0.468	0.846
X2.4	0.663	0.599	0.525	0.859
X2.5	0.621	0.588	0.525	0.854
X3.1	0.609	0.536	0.850	0.489
X3.2	0.556	0.531	0.857	0.457
X3.3	0.646	0.625	0.872	0.521
Y1	0.853	0.596	0.644	0.552
Y2	0.837	0.655	0.590	0.647
Y3	0.878	0.620	0.575	0.609

Note. The highest loading of each indicator (bold values in the SmartPLS output) occurs on its own construct. Source: Authors' SmartPLS 4 analysis.

Each indicator loads most strongly on its own construct, confirming discriminant validity at the indicator level.

3.1.2. Structural Model Evaluation

3.1.2.1. Collinearity (Inner VIF)

Table 6. Inner Variance Inflation Factor (VIF)

Structural Path	VIF
BNPL Ease of Use (X1) → Impulsive Buying (Y)	2.373

Perceived Risk (X2) → Impulsive Buying (Y)	1.992
Financial Literacy (X3) → Impulsive Buying (Y)	1.851

Note. All inner VIF values are below the conservative 5.0 threshold (Hair et al., 2021). Source: Authors' SmartPLS 4 analysis.

All inner VIF values are below 5.0, indicating no evidence of problematic multicollinearity among the predictors.

3.1.2.2. Path Coefficients and Hypothesis Testing

Table 7. Bootstrapped Path Coefficients

Structural Path	Original Sample (O)	Sample Mean (M)	SD	t-stat	p-value
BNPL Ease of Use (X1) → Impulsive Buying (Y)	0.297	0.292	0.127	2.341	0.019
Perceived Risk (X2) → Impulsive Buying (Y)	0.312	0.320	0.119	2.633	0.008
Financial Literacy (X3) → Impulsive Buying (Y)	0.331	0.327	0.123	2.679	0.007

Note. Statistical inference is based on bootstrapping with 5,000 subsamples. Source: Authors' SmartPLS 4 analysis.

Table 7 shows that all three structural paths are positive and statistically significant at the 5% level: BNPL ease of use ($\beta = 0.297$; $t = 2.341$; $p = 0.019$), perceived risk ($\beta = 0.312$; $t = 2.633$; $p = 0.008$), and financial literacy ($\beta = 0.331$; $t = 2.679$; $p = 0.007$). H1, H2, and H3 are therefore supported.

3.1.2.3. Explanatory Power (R^2)

Table 8. Coefficient of Determination (R^2)

Endogenous Construct	R^2	Adjusted R^2
Impulsive Buying (Y)	0.670	0.656

Note. R^2 values are interpreted as moderate when between 0.50 and 0.75 (Hair et al., 2021). Source: Authors' SmartPLS 4 analysis.

The three predictors together account for 67.0% of the variance in impulsive buying ($R^2 = 0.670$; adjusted $R^2 = 0.656$), which corresponds to a moderate level of explanatory power according to Hair et al. (2021). This provides empirical support for the simultaneous associations hypothesised in H4. Within the PLS-SEM framework, joint explanatory power is evaluated through R^2 rather than through a parametric F-test; the R^2 value should therefore be interpreted as evidence of a joint statistical association rather than as a direct test of simultaneous causal effects.

3.1.2.4. Effect Sizes (f^2)

Table 9. Effect Sizes (f^2)

Structural Path	f^2
BNPL Ease of Use (X1) → Impulsive Buying (Y)	0.113 (small)
Perceived Risk (X2) → Impulsive Buying (Y)	0.148 (small to medium)
Financial Literacy (X3) → Impulsive Buying (Y)	0.179 (medium)

Note. f^2 thresholds: 0.02 small; 0.15 medium; 0.35 large (Cohen, 1988; Hair et al., 2021). Source: Authors' SmartPLS 4 analysis.

Financial literacy contributes the largest effect ($f^2 = 0.179$, approaching the medium threshold), followed by perceived risk ($f^2 = 0.148$) and BNPL ease of use ($f^2 = 0.113$). None of the paths exceeds the 0.35 threshold for a large effect, which is consistent with the moderate overall R^2 reported above.

3.2. Discussion

3.2.1. BNPL Ease of Use and Impulsive Buying (H1)

The positive and significant path from BNPL ease of use to impulsive buying ($\beta = 0.297$; $p = 0.019$; $f^2 = 0.113$) indicates that respondents who find TikTok Shop's BNPL interface easy and frictionless are more likely to report impulsive purchases. Four mechanisms, each grounded in TAM and in the impulsive-buying literature, help interpret this result. First, a seamless BNPL interface reduces the cognitive effort required to complete a transaction (Davis, 1989); by removing procedural barriers such as card-entry and credit-check steps, it shortens the interval between a purchase urge and a completed transaction. Second, this reduction in effort also

compresses the deliberation stage of the purchase decision—precisely the gap in which consumers normally reassess whether a purchase is affordable or necessary (Redine et al., 2023). Third, by deferring the monetary sacrifice to a future instalment, BNPL framing reduces the psychological salience of the immediate cost at the point of purchase, which lowers the restraining effect of financial self-regulation. Fourth, in social-commerce environments in which emotional cues (live-streaming, influencer endorsement) and promotional cues (flash sales, free-shipping windows) are intense, the reduction in friction interacts with these cues: each additional use occasion becomes an additional opportunity for an unplanned purchase. The finding aligns with Jundiy and Ridanasti (2024), who show that perceived ease of use strengthens attitudes and usage intentions for PayLater services, and with Wulandjani (2026), who connects repeated and effortless BNPL usage to impulsive-buying tendencies among Generation Z. The present study extends this line of work by documenting that, in a TikTok Shop context, the association between ease of use and impulsive buying holds even when perceived risk and financial literacy are controlled for jointly in a single structural model.

3.2.2. Perceived Risk and Impulsive Buying (H2)

The study reports a positive and significant association between perceived risk and impulsive buying ($\beta = 0.312$; $p = 0.008$; $f^2 = 0.148$). This result diverges from the conventional expectation that higher perceived risk inhibits purchase, but it is consistent with the pattern recently reported in BNPL settings by Rosadi et al. (2024) and Nurfaiza and Prayitno (2023). Several mechanisms may help interpret this finding without over-attributing causality. First, promotional pressure and time-limited offers in live-streaming environments can activate a short-term reward system that overrides risk considerations, so that respondents who are aware of BNPL risks may nonetheless act on immediate hedonic cues (Juita et al., 2023). Second, deferred-payment framing shifts the mental accounting of risk: the consequences of a risky purchase are postponed to a vague future instalment, which reduces their psychological weight at the moment of purchase. Third, the measurement of perceived risk here combines financial, security, performance, social, and psychological dimensions; a composite that includes performance- and security-related anxieties about missing deals, scarcity, or losing social standing could capture concerns that paradoxically increase, rather than inhibit, immediate purchasing. Fourth, the association is observational rather than causal, and may partly reflect self-selection: consumers who already engage in impulsive buying may also be more sensitised to its risks, which raises their self-reported risk scores. It is therefore important to emphasise that the positive β coefficient documents a statistical association, not evidence that increasing perceived risk causes impulsive buying. These interpretive caveats, together with the single-institution sample, warrant replication with a disaggregated risk measure and a more diverse sample before firm causal claims are made.

3.2.3. Financial Literacy and Impulsive Buying (H3)

A positive and significant association was also observed between financial literacy and impulsive buying ($\beta = 0.331$; $p = 0.007$; $f^2 = 0.179$). On its face, the direction of this effect runs against findings that higher financial literacy supports self-control and reduces impulsive purchases (Putri & Noorrizki, 2024). However, the association is consistent with alternative accounts in which financial literacy, measured as generic knowledge of financial concepts, does not automatically translate into behavioural self-regulation when consumers are exposed to persuasive digital stimuli (Wahyuandari et al., 2024; Widiastuti & Sumastuti, 2025). We advance four interpretive points. First, financial knowledge and financial self-control are conceptually and empirically distinct constructs: a consumer may understand the mechanics of compound interest and still fail to resist a flash sale, especially under live-streaming emotional pressure. Second, respondents who report higher financial literacy may also be those who use digital-payment services more actively and shop on TikTok Shop more intensively, which raises their exposure to impulsive-buying opportunities and could generate a positive observational association through exposure rather than through behavioural causation. Third, the composite measurement of financial literacy at the construct level in this study does not capture dimension-level variation (knowledge, attitudes, behaviour), so any imbalance between knowledge and behaviour is averaged away. Fourth, self-reported knowledge may be inflated among active digital-payment users, generating a spurious positive association. It is therefore important to emphasise that this result should not be read as evidence that financial literacy causes impulsive buying; it should be read as evidence that, in this sample, knowledge-based literacy alone is insufficient to inhibit impulsive purchasing. Future research using behavioural measures of financial literacy, longitudinal designs, and inclusion of self-control or shopping-habit mediators is needed to disentangle these mechanisms (Widiastuti & Sumastuti, 2025).

3.2.4. Joint Association of the Three Predictors (H4)

The three predictors jointly explain 67.0% of the variance in impulsive buying ($R^2 = 0.670$; adjusted $R^2 = 0.656$), which indicates that cognitive, risk, and competence antecedents together provide a substantive account of impulsive buying in a TikTok Shop context. Three observations follow. First, the model integrates three theoretically distinct families of antecedents (technology-use perception, risk perception, and financial competence) in a single structural framework, which is itself a contribution relative to studies that examine these constructs in isolation (Wulandjani, 2026; Putri & Noorrizki, 2024). Second, 33.0% of the variance remains unexplained, pointing to additional determinants that fall outside the present model, including hedonic

shopping motivation, promotional intensity, peer and parasocial influence, self-control, and shopping habits (Widiastuti & Sumastuti, 2025). Third, the R^2 value reflects a joint statistical association within the sample and should not be interpreted as a test of simultaneous causal effects; within the PLS-SEM framework, there is no parametric F-test of simultaneous significance, so H4 is supported as a joint explanatory statement rather than as a confirmed causal claim. Taken together, the joint model supports the view that impulsive buying in social-commerce environments is multiply determined and that single-antecedent models are likely to under-specify the behaviour.

4. CONCLUSION

This study examined the simultaneous associations of BNPL ease of use, perceived risk, and financial literacy with impulsive buying among TikTok Shop users at STMB Multismart Medan. Using PLS-SEM on data from 74 respondents, the analysis finds that all three antecedents are positively and significantly associated with impulsive buying—BNPL ease of use ($\beta = 0.297$; $p = 0.019$), perceived risk ($\beta = 0.312$; $p = 0.008$), and financial literacy ($\beta = 0.331$; $p = 0.007$)—and that together they explain 67.0% of its variance. The joint model therefore provides empirical support for integrating cognitive, risk, and competence antecedents when explaining impulsive buying in a social-commerce context. The counter-conventional positive associations of perceived risk and financial literacy with impulsive buying highlight that awareness of risk and knowledge of financial concepts do not, by themselves, inhibit impulsive purchasing in affect-rich digital environments. These findings should be read as context-specific statistical associations rather than as causal effects, and they should not be interpreted as evidence that financial literacy increases impulsive buying. Given the single-institution, non-probability sample and the cross-sectional design, the findings are indicative rather than broadly generalisable and should be complemented by replication across institutions, regions, and sampling designs.

Theoretically, the study contributes to three streams of literature. First, it extends TAM-based BNPL research beyond behavioural intention to a post-adoption consumption outcome—impulsive buying—in a social-commerce platform, responding to recent calls to examine downstream behavioural implications of effortless digital-payment services (Davis, 1989; Wulandjani, 2026). Second, it contributes to the perceived-risk literature by documenting that, in a BNPL-enabled social-commerce setting, composite perceived risk can exhibit a positive rather than inhibitory association with impulsive buying, which is at odds with the conventional reading of risk as a purchase deterrent but consistent with recent BNPL evidence (Rosadi et al., 2024; Juita et al., 2023). Third, it contributes to the financial-literacy literature by showing that knowledge-based literacy, measured at the composite construct level, does not by itself restrain impulsive purchasing in digital-payment-rich environments, which supports the growing argument that behavioural self-regulation and financial knowledge should be theorised and measured as distinct constructs (Wahyuandari et al., 2024; Widiastuti & Sumastuti, 2025). Collectively, these contributions suggest the need for richer theoretical models that incorporate affective processes, hedonic motivation, and situational cues alongside cognitive and knowledge-based constructs when explaining impulsive buying in social commerce.

The findings carry practical implications for three groups of stakeholders. For TikTok Shop and similar social-commerce platforms, the results suggest that reducing BNPL friction without complementary safeguards may increase, rather than merely facilitate, impulsive buying. Platform managers may consider: (i) deliberate information "speed bumps" at BNPL checkout, such as a one-screen summary of total instalment cost and cumulative outstanding balance before confirmation; (ii) in-app pre-checkout warnings for repeat BNPL use within a short time window or for high-risk product categories; (iii) visible dashboards of cumulative BNPL commitments and upcoming due dates; and (iv) controls on the intensity of promotional stacking (flash sale plus BNPL plus free-shipping) that encourages over-purchasing in live-streaming sessions.

For BNPL providers, the results point to the importance of transparent risk disclosure: (i) clear, up-front statements of total cost of credit including fees and interest; (ii) explicit disclosure of late-payment consequences; (iii) real-time visibility of ongoing instalment obligations across merchants; and (iv) responsible BNPL design features such as spending caps, cooling-off periods, and opt-in reminders, particularly for young and student users. Because the perceived-risk–impulsive-buying association in this study is positive rather than inhibitory, risk disclosure should be paired with behavioural nudges rather than relied upon as a stand-alone restraint.

For educators and policymakers, the finding that knowledge-based financial literacy does not, by itself, restrain impulsive buying reinforces calls to shift financial-literacy interventions beyond concept recall toward behavioural financial literacy and financial self-control. Practical recommendations include: (i) embedding scenario-based exercises on BNPL and social commerce in financial-literacy curricula at secondary and tertiary levels; (ii) teaching behavioural self-regulation skills (e.g., delay-of-gratification practices, pre-commitment devices) tailored to live-streaming and promotional contexts; and (iii) collaboration between regulators, educational institutions, and BNPL providers on responsible-use campaigns targeted at young digital consumers.

Several limitations should be acknowledged. First, the sample is small ($n = 74$) and drawn from a single institution (STMB Multismart Medan), which limits the external validity of the findings. Second, respondents

were selected through accidental sampling, a non-probability procedure; the use of the Slovin formula provides a sample-size approximation but does not confer the formal statistical guarantees of a probability sample (Hair et al., 2021). Third, the study was conducted in a single regional setting (Medan, North Sumatra), so generalisation to other Indonesian cities, demographic groups, or national contexts requires caution. Fourth, the cross-sectional research design captures associations at one point in time and precludes causal claims regarding the direction of effects. Fifth, the data were collected through a self-administered questionnaire using a single instrument administered at a single time point, which may be susceptible to common-method bias. Sixth, both perceived risk and financial literacy were measured at the composite construct level only; disaggregating the sub-dimensions (financial, security, performance, social, and psychological risk; and knowledge, attitudinal, and behavioural literacy) could clarify the mechanisms underlying the counter-conventional positive associations. Seventh, the explanatory variables are limited to three antecedents, and the 33.0% unexplained variance points to additional unmeasured determinants. Eighth, the sample is composed exclusively of university students, so findings may not extend to non-student Generation Z consumers or to older demographic cohorts. Ninth, self-reported measures of financial literacy may be inflated among active digital-payment users, which could bias the observed association.

Future research should address these limitations by (i) replicating the model with larger, probability-based samples drawn from multiple institutions and regions; (ii) adopting longitudinal or experimental designs that can speak to the direction of effects between BNPL ease of use, perceived risk, financial literacy, and impulsive buying; (iii) including potential mediators and moderators such as hedonic shopping motivation, self-control, parasocial engagement with live-streamers, shopping habits, promotion type, product category, and BNPL plan structure (Widiastuti & Sumastuti, 2025); (iv) measuring perceived risk and financial literacy at the dimension level to disentangle the mechanisms behind the positive associations reported here; (v) complementing self-reported measures with behavioural indicators of financial self-control and with transaction-level BNPL data where ethically available; and (vi) extending the sample beyond university students to broader demographic segments of Indonesian social-commerce users.

ACKNOWLEDGEMENTS

The authors thank the students of STMB Multismart Medan who participated in the survey, and the institution for granting access to the research site. The authors also thank the editor and the two anonymous reviewers of the International Journal of Management Science and Information Technology (IJMSIT) for their constructive comments, which substantially improved the quality of this manuscript.

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The data that support the findings of this study are available from the corresponding author upon reasonable request.

The study was conducted in accordance with the ethical guidelines of STMB Multismart Medan. Participation was voluntary and anonymous, and respondents provided informed consent prior to completing the questionnaire. No, personally identifying information was collected.

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