Fintech-Driven Buy Now, Pay Later Factors and Impulse Buying among Generation Z in Malaysia

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ABSTRACT

The rapid growth of fintech-enabled Buy Now, Pay Later (BNPL) services has reshaped consumer payment behaviour, particularly among Generation Z in Malaysia. This study identifies how Generation Z BNPL users in Malaysia perceive three BNPL features, Perceived Ease of Use (PEOU), Perceived Usefulness (PU) and Perceived Risk (PR), and tests their relationship with Impulse Buying (IB), extending the Technology Acceptance Model to a post-adoption behavioural outcome. A structured online questionnaire, adapted from established mobile-payment and e-wallet scales, was administered to 384 Generation Z respondents aged 18–26 using convenience sampling, and data were analysed with descriptive statistics, Pearson correlation and multiple regression in SPSS. Respondents rated BNPL as moderately high in ease of use (M = 3.73) but only moderate in usefulness, risk and impulse buying (M = 3.36–3.42). All three constructs correlated significantly and positively with IB, with PR showing the strongest association ($r = .709$, $p < .001$), followed by PU ($r = .473$, $p < .001$) and PEOU ($r = .388$, $p < .001$). The regression model explained 51.9% of the variance in IB ($R^2 = .519$, $F(3, 380) = 136.933$, $p < .001$): PR was the dominant predictor ($\beta = .640$, $p < .001$), PU retained a small but significant unique contribution ($\beta = .153$, $p < .001$), and PEOU did not contribute significant unique variance once PU and PR were controlled ($\beta = –.017$, $p = .701$). Because the design is cross-sectional, the positive PR–IB association is interpreted with caution as an association rather than as proof that risk perception drives impulsivity. The findings support responsible BNPL design, transparent repayment disclosure, and consumer financial education targeted at digitally native users.

Keywords: Buy Now Pay Later; fintech; impulse buying; Generation Z; Technology Acceptance Model; perceived risk

INTRODUCTION

Financial technology (fintech) has reshaped consumer payment behaviour by embedding credit, budgeting and transaction tools directly into digital commerce. Among the most disruptive fintech innovations is Buy Now, Pay Later (BNPL), a form of short-term digital consumer credit that lets shoppers obtain goods immediately while deferring or instalment-paying the purchase price [1]. Because BNPL is embedded directly in the checkout process, it reduces transactional friction and can weaken the salience of the eventual purchase cost [2].

In Malaysia, BNPL use has become closely associated with Generation Z, a cohort that has grown up with continuous internet access, mobile commerce and social-media-driven shopping [3]. Recent Malaysian evidence links BNPL use among Millennials and Generation Z to changes in spending behaviour, financial strain, anxiety and guilt [4], the BNPL mechanism itself has been identified as a direct trigger of impulsive purchasing among Malaysian Millennials [5], and Generation Z's adoption of BNPL has been shown to extend beyond simple convenience to encompass financial literacy and social influence [6].

Despite this growing evidence base, three gaps remain. Empirically, most BNPL research concentrates on adoption intention rather than on the behavioural consequence of impulse buying that follows adoption [7], [8]. Contextually, evidence from Malaysia that specifically isolates Generation Z BNPL users, rather than Generation Z in general, remains limited [3], [6]. Theoretically, technology-acceptance research still treats perceived risk mainly as an inhibitor of adoption [9], [10], yet its role when the outcome is a post-adoption behaviour such as impulse buying, rather than intention to adopt, is not well established [11]. This study addresses these gaps by examining Perceived Ease of Use (PEOU), Perceived Usefulness (PU) and Perceived Risk (PR) as correlates and predictors of Impulse Buying (IB) among Malaysian Generation Z BNPL users, extending the Technology Acceptance Model [12] beyond adoption to a behavioural outcome.

Guided by this gap, the study sets out to identify the key features of fintech-driven BNPL as perceived by Generation Z, assess how those features relate to impulsive buying, and test their influence on impulsive buying tendencies among Generation Z BNPL users in Malaysia. The scope is deliberately narrow: urban and semi-urban Malaysian respondents aged 18–26 who use at least one fintech BNPL service, whether Atome, Shopee PayLater, Grab PayLater, or a credit-card instalment facility.

The main contribution is extending the Technology Acceptance Model beyond adoption intention to impulse buying, a post-adoption outcome that fintech-credit research has largely left unexamined. A second, more applied contribution is Malaysia-specific evidence on how Perceived Ease of Use, Perceived Usefulness and Perceived Risk relate to Generation Z's impulsive BNPL spending, rather than to whether they adopt BNPL at all. The results also feed directly into recommendations for BNPL providers, platforms, policymakers and financial educators.

The rest of the paper follows a fairly standard structure. Section II reviews the BNPL, Generation Z and TAM literature and develops the study hypotheses, before Section III sets out the research design, sampling, instrument and analysis procedure; Section IV then works through the descriptive, correlational and regression results, and Section V closes with the contributions, limitations and directions for future work this study points to.

LITERATURE REVIEW

A. Buy Now, Pay Later and Fintech

BNPL is commonly embedded directly in the digital checkout process and is designed to reduce transactional friction by simplifying approval and repayment [1]. Its benefits (convenience, payment flexibility and easier access to short-term credit) can also weaken payment salience and widen the psychological distance between acquisition and repayment. Schomburgk and Hoffmann [2] link BNPL usage to broader issues of consumer self-regulation and well-being, while Kumar and Nayak [7] connect BNPL adoption to risky indebtedness and impulse-buying mechanisms. BNPL should therefore not be treated only as a payment technology; it is also a behavioural-finance context in which convenience, perceived value, perceived risk and self-control jointly influence consumer decisions.

In Malaysia, BNPL is particularly relevant to younger digital consumers. Osman et al. [3] report that Generation Z BNPL use is shaped by a combination of psychological, financial and normative factors, while Podin et al. [4] identify perceived accessibility, changes in spending behaviour, financial strain, anxiety and guilt among Malaysian Millennial and Generation Z users. These findings support examining behavioural outcomes after adoption, including impulse buying, rather than adoption intention alone.

B. Generation Z and Impulse Buying

Generation Z has developed within an environment of continuous connectivity, making digital convenience and frictionless interfaces normal rather than novel; the determinants of their technology use may therefore differ from those observed in earlier, less digitally mature populations [6]. Impulse buying refers to a sudden, compelling tendency to make purchases with limited prior planning and reduced deliberation about long-term consequences [13]. A systematic review by Redine et al. [8] confirms that impulse buying is a multidimensional phenomenon shaped by psychological, marketing and technological factors, and that digital commerce is especially relevant because website design, immediacy, promotion and payment technology can shorten the decision process.

BNPL is theoretically relevant to impulse buying because it separates the timing of consumption from the timing of full payment, which can reduce the immediate pain of paying and make a purchase appear more manageable at the point of decision [1]. Kumar and Nayak [7] show that impulse buying is an important mechanism linking risky indebtedness with BNPL-related attitudes and intentions, and in Malaysia, Nik Azmi and Mohsin [5] explicitly frame the BNPL mechanism as a trigger for impulsive purchase behaviour, though financial self-control, debt vulnerability and risk perceptions also shape how consumers respond to BNPL. Also relevant is the broader finding that retail credit can enable overconsumption in online environments [14].

C. Perceived Ease of Use, Usefulness and Risk

Perceived Ease of Use (PEOU) is the degree to which a person believes that using a system will be free of effort [12]. Recent BNPL research suggests that PEOU's influence may weaken among digitally mature users: Hidayat et al. [11] found that PEOU did not significantly predict BNPL-use intention in an Indonesian sample, and Waliszewski et al. [10] report a similarly non-significant direct effect. This suggests that ease of use may increasingly function as a baseline expectation rather than a differentiating benefit.

Perceived Usefulness (PU) reflects the belief that using a technology improves task performance or provides functional value [12]; in BNPL, this can include payment flexibility, spreading expenditure and improved short-term liquidity. Waliszewski et al. [10] identify PU as an important determinant of BNPL-related attitudes, and Raj et al. [9] show that perceived benefits and performance expectancy increase behavioural intention to use BNPL, although Hidayat et al. [11] report a non-significant PU–intention path in their sample, indicating that usefulness effects are context-dependent.

Perceived Risk (PR) refers to consumers' subjective assessment of uncertainty and potential negative consequences, including financial loss, over-indebtedness and privacy or security concerns. Most technology-adoption literature treats risk as an inhibitor: Raj et al. [9] found that PR reduces behavioural intention to use BNPL, and Waliszewski et al. [10] likewise identify risk as a relevant adoption determinant. Kumar and Nayak [7], however, complicate that picture: PR moderates the attitude–intention link while impulse buying sits within the same risky-indebtedness pathway, so its role is not simply inhibitory. A positive PR–IB association could reflect respondents becoming more risk-aware as their impulsive BNPL use increases, rather than risk itself provoking impulsivity, so any such association in a cross-sectional design requires cautious, non-causal interpretation.

D. Synthesis and Positioning of the Present Study

Across the three constructs reviewed above, a consistent pattern emerges: BNPL research has been much more thorough in explaining why Generation Z adopts these services than in explaining what happens to their spending behaviour afterwards. PEOU and PU studies consistently frame their outcome as adoption intention [11], [10], and even PR, despite its documented role in risky-indebtedness pathways [7], is typically modelled as a brake on that same intention rather than as a correlate of a downstream behaviour such as impulse buying. This is precisely the empirical and theoretical gap identified in Section I: the present study repositions PEOU, PU and PR as predictors of Impulse Buying rather than of adoption intention, within a Malaysian Generation Z BNPL-user sample.

E. Theoretical Framework and Hypotheses

The Technology Acceptance Model (TAM) posits that Perceived Usefulness and Perceived Ease of Use are central beliefs that shape the acceptance of information technology [12]. This study does not test the complete TAM sequence of beliefs, attitude, intention and use; instead, it draws on the two core TAM constructs and extends the framework with Perceived Risk to examine a post-adoption outcome, Impulse Buying, consistent with recent BNPL studies that extend technology-acceptance frameworks with risk, trust and financial factors [9], [11], [6], [10]. Fig. 1 presents the conceptual framework used in this study.

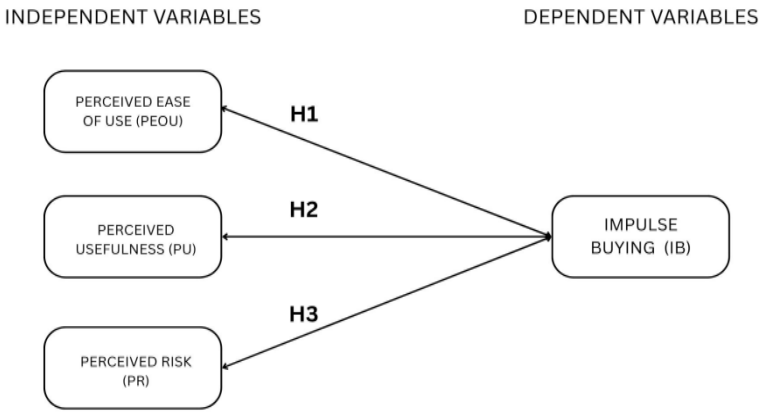


Fig. 1 Conceptual framework of the study

Based on this framework, the following hypotheses are proposed:

H1: Perceived Ease of Use is significantly related to impulse buying among Generation Z BNPL users in Malaysia.

H2: Perceived Usefulness is significantly related to impulse buying among Generation Z BNPL users in Malaysia.

H3: Perceived Risk is significantly related to impulse buying among Generation Z BNPL users in Malaysia.

METHODOLOGY

A. Research Design

This study adopts a positivist, deductive, quantitative research design using a descriptive-correlational approach. We chose a quantitative design, rather than a qualitative or mixed-methods one, because the study tests pre-specified, theory-derived relationships (H1–H3) between three independent variables (PEOU, PU, PR) and one dependent variable (IB) across a large sample, which calls for statistical generalization rather than in-depth exploration of individual experiences [15]. We used a single cross-sectional survey, administered via Google Forms, because the study's time frame did not permit a longitudinal design; this choice is revisited as a limitation in Section V.

B. Population and Sampling

The population comprises Malaysian Generation Z individuals aged 18–26, who make up approximately 29% of Malaysia's population [16]. Using the Krejcie and Morgan [17] table for a population exceeding one million (95% confidence level, 5% margin of error), a minimum sample of 384 respondents was required and achieved. We used convenience sampling, rather than probability sampling, because no sampling frame of Malaysian Generation Z BNPL users exists from which to draw a random sample within the study's time and budget constraints. The survey was distributed via WhatsApp, Instagram, Telegram and Facebook to reach a

geographically and demographically varied pool of respondents, and demographic data (age, gender, ethnicity, employment status, income and education) were tracked to monitor sample composition. Eligible respondents were current users of at least one fintech BNPL facility (Atome, Shopee PayLater, Grab PayLater, or a credit-card installment plan).

C. Instrument and Measures

The structured questionnaire measured PEOU, PU, PR, and Impulse Buying (IB) using 5-point Likert scales (1 = Strongly Disagree to 5 = Strongly Agree). Items were adapted from established fintech and consumer scales (PEOU and PR from Koenig-Lewis et al. [18] and Lien et al. [19]; PU from Lien et al. [19] and Trivedi [20]; IB from Farid and Ali [21]), contextualizing generic e-payment terms specifically to deferred checkout workflows. Negatively phrased items (PEOU2: "complicated to use") and positively worded safety items under risk (PR1: "feel secure") were confirmed as reverse-coded prior to composite index calculation, ensuring high scores uniformly denote greater ease and higher risk perception, respectively. While credit card installment plans offer deferred payment, only respondents who actively utilized dedicated fintech BNPL services (Shopee PayLater, Grab PayLater, Atome) alone or in tandem with cards ($n = 353$, 91.9%) represent pure fintech users; the 31 card-only respondents (8.1%) were evaluated within the sample as credit users operating within e-commerce checkout ecosystems.

D. Data Analysis

We analysed the data in SPSS version 31. Descriptive statistics (means, standard deviations, frequencies) addressed Objective 1, since they summarise the central tendency and spread of perceptions across the sample. Pearson correlation addressed Objective 2, because it quantifies the strength and direction of a linear relationship between two interval-level variables. For Objective 3 we turned to multiple regression: unlike pairwise correlation, it estimates each predictor's unique contribution to Impulse Buying while holding the other two predictors constant, which is what tells us whether PEOU, PU and PR matter independently or only because they overlap with one another. Reliability was assessed using Cronbach's alpha, and normality using skewness and kurtosis, both prerequisites for the parametric tests used.

E. Ethical Considerations

Participation was voluntary and anonymous: no personally identifying information was collected, respondents were informed of the study's academic purpose before starting the questionnaire, and consent was implied by voluntary completion and submission of the Google Form. Respondents could withdraw at any point before submission by simply closing the form.

Methodological note: an independent review of the dataset flagged two checks that should precede any confirmatory replication of these findings. Respondents who selected credit-card-only usage, rather than a dedicated BNPL facility, should not automatically be treated as BNPL users, and the negatively worded PEOU item and the positively worded security item under PR should be verified as correctly reverse-coded prior to composite scoring. Both checks require access to the raw SPSS dataset, so the results reported below reflect the values as recorded in the original analysis and should be read alongside this caveat.

RESULTS AND DISCUSSION

A. Respondent Profile

Ecosystem integration, not brand alone, determined which BNPL facility Generation Z respondents chose. Among the 384 valid responses summarised in Table I, the sample skewed slightly male (54.7%) and clustered in the 21–23 age bracket (52.9%), the stage of early financial independence in which spending habits are actively forming. Fig. 2 sharpens this picture: credit card paired with Shopee PayLater was the single most common combination (20.6%), while a stand-alone Atome account and the Atome–Grab PayLater pairing tied for the least common response (2.1% each).

Table I. Respondent Demographic Profile (N = 384)

Variable	Category	n	%
Gender	Male	210	54.7
	Female	174	45.3
Age	18–20	97	25.3
	21–23	203	52.9
	24–26	84	21.9
Ethnicity	Chinese	203	52.9
	Malay	97	25.3
	Indian	84	21.9
Employment	Student	154	40.1
	Self-employed	124	32.3
	Working (paid)	59	15.4
	Unemployed	47	12.2
Education	Bachelor's degree	171	44.5
	Diploma	96	25
	SPM/STPM/Fdn	44	11.5
	PhD	40	10.4
	Master's	33	8.6

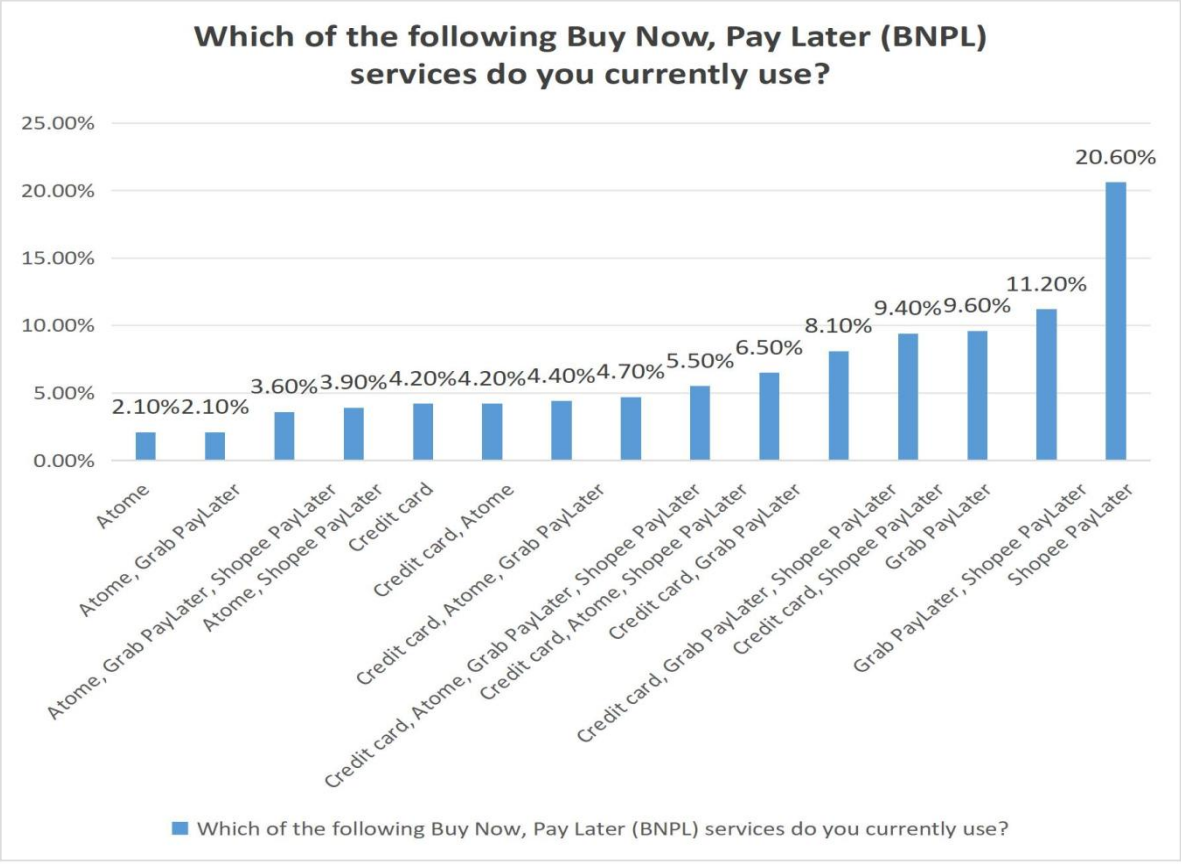


Fig. 2 BNPL services currently used by respondents

This pattern speaks directly to Objective 1: the BNPL facility bundled into an existing e-commerce checkout, Shopee, outcompeted the stand-alone fintech app, Atome, even though both offer the same core deferred-payment mechanic. The practical implication is that the impulse-buying tendencies reported in Sections IV-C

to IV-F are most representative of BNPL as it is actually encountered by Malaysian Generation Z, pre-integrated into a familiar shopping platform, rather than BNPL used as a deliberately sought-out, stand-alone credit product.

B. Descriptive Analysis of BNPL-Related Perceptions (RO1)

Respondents did not rate the three BNPL-perception constructs equally. Table II shows Perceived Ease of Use recording the highest composite mean (M = 3.73, SD = 1.341), moderately high on the five-point scale, while Perceived Usefulness (M = 3.42, SD = 1.413) and Perceived Risk (M = 3.42, SD = 1.389) were rated only moderately, and Impulse Buying itself was reported at a similarly moderate level (M = 3.36, SD = 1.510). The standard deviations, all above 1.3, indicate considerable disagreement within the sample rather than a uniform view.

Table II. Descriptive Statistics Of Study Constructs (Ro1)

Construct	**Mean**	**SD**	**Level**
Perceived Ease of Use	3.73	1.341	Mod. high
Perceived Usefulness	3.42	1.413	Moderate
Perceived Risk	3.42	1.389	Moderate
Impulse Buying	3.36	1.51	Moderate

For RO1, this ordering is itself informative: Generation Z respondents find BNPL easy to use with far more confidence than they find it low-risk or highly useful. That gap foreshadows the regression result in Section IV-E. A service can be rated as effortless without that ease translating into either strong perceived value or a strong sense of safety, and it is the latter two, not ease, that carry the relationship with impulse buying forward.

C. Reliability and Normality

Before any relationship could be trusted, the instrument itself had to hold up. It did: every construct in Table III cleared the 0.70 reliability threshold by a wide margin, from PEOU's .908 to PU's .952, with the full 20-item instrument returning α = .947, comfortably in the "excellent" range and removing measurement unreliability as a rival explanation for the patterns reported next.

Table III. Reliability Analysis

Construct	**Items**	**α**
Perceived Ease of Use	5	0.908
Perceived Usefulness	5	0.952
Perceived Risk	5	0.911
Impulse Buying	5	0.947
Overall (20 items)	**20**	**0.947**

Skewness (PEOU –0.872, PU –0.494, PR –0.465, IB –0.472) and kurtosis (PEOU –0.298, PU –0.938, PR –0.748, IB –1.104) values for all constructs fell within the acceptable ±2 and ±4 thresholds respectively, so the data were treated as suitable for parametric correlation and regression analysis.

D. Correlation Analysis (RO2)

The variable Generation Z respondents rated least favourably turned out to correlate with impulse buying the most strongly. Table IV shows Perceived Risk posting a strong positive relationship with Impulse Buying ($r = .709$, $p < .001$), well above Perceived Usefulness ($r = .473$, $p < .001$) and Perceived Ease of Use ($r = .388$, $p < .001$), and the only one of the three to reach conventional "strong" magnitude ($r \geq .50$).

Table IV. Pearson Correlation Matrix

	PEOU	PU	PR	IB
PEOU	1	.483**	.517**	.388**
PU	.483**	1	.514**	.473**
PR	.517**	.514**	1	.709**
IB	.388**	.473**	.709**	1

** Correlation is significant at the 0.001 level (2-tailed).

For RO2, this already complicates the assumption that a smoother, more useful BNPL experience is what drives impulsive spending: concern about risk moved with impulse buying more closely than either convenience factor did. The 95% confidence intervals around these coefficients (approximately .655–.755 for PR, .391–.547 for PU, and .300–.470 for PEOU) do not overlap, indicating that PR's association with IB is reliably stronger than PU's or PEOU's rather than a rounding artefact. The independent variables were also positively intercorrelated (r = .483 to .517), so some of PEOU's and PU's association with IB may be shared with PR rather than independent of it, a question the correlation matrix alone cannot resolve and the reason the analysis proceeds to multiple regression in Section IV-E.

E. Multiple Regression Analysis (RO3)

Once all three predictors were entered together, Perceived Ease of Use's bivariate correlation all but evaporated. The regression model was statistically significant overall, $R = .721$, $R^2 = .519$, adjusted $R^2 = .516$, $F(3, 380) = 136.933$, $p < .001$; together, the three BNPL-perception variables accounted for 51.9% of the variance in impulse buying. Table V, however, shows that the explanatory weight was borne almost entirely by

two of the three predictors. Multi-collinearity diagnostics confirmed model stability, with tolerance values ranging from .642 to .671 and Variance Inflation Factors (VIF) between 1.489 and 1.559 (Table VI). These values fall well within conservative diagnostic thresholds (VIF < 3.3, tolerance > .20), demonstrating that shared variance among the predictors does not distort the regression estimates.

Table V. Regression Coefficients (Dependent Variable: IB)

Predictor	B	β	t	Sig.
(Constant)	.365	—	1.992	.047
PEOU	–.020	–.017	–.384	.701
PU	.162	.153	3.515	<.001
PR	.736	.640	14.404	<.001

The resulting equation, IB = 0.365 – 0.020(PEOU) + 0.162(PU) + 0.736(PR), shows Perceived Risk as the dominant predictor (β = .640, p < .001), Perceived Usefulness retaining a small but significant unique contribution (β = .153, p < .001), and Perceived Ease of Use dropping to statistical non-significance (β = –.017, p = .701) once PU and PR are controlled. For RO3, this means the feature most strongly linked to impulsive BNPL spending, once other factors are held constant, is not convenience but risk: the opposite of what a straightforward "friction-drives-impulse" account of BNPL would predict.

Because the three predictors were positively intercorrelated (Section IV-D), Table VI reports collinearity diagnostics, tolerance and the variance inflation factor (VIF), reconstructed from the reported predictor correlation matrix, to check whether this overlap distorted the coefficients above. All tolerance values exceeded 0.60 and all VIF values remained below 2, well inside the conventional threshold of 10 (or the stricter 5 sometimes applied), so multicollinearity is not a serious concern for the regression results reported in Table V.

Table VI. Multicollinearity Diagnostics (Reconstructed)

Predictor	Tolerance	VIF
PEOU	0.669	1.496
PU	0.671	1.489
PR	0.642	1.559

Because PEOU correlated significantly with IB at the bivariate level (Table IV) but not once PU and PR were controlled (Table V), the hypotheses are evaluated against the stricter, regression-based criterion: a hypothesis is treated as supported only if the construct's standardised regression coefficient is statistically significant, since this is what establishes an independent, non-redundant contribution rather than one that merely overlaps with the other two predictors. Table VII summarises how this leaves each hypothesis.

Table VII. Summary Of Hypothesis Testing

Hypothesis	Result
H1: PEOU → IB	Rejected
H2: PU → IB	Supported
H3: PR → IB	Supported

F. Discussion

PEOU's non-significant unique beta ($\beta = -.017, p = .701$) alongside a positive bivariate correlation ($r = .388, p < .001$) is best interpreted as a potential ceiling or baseline effect rather than an established structural mechanism. For digitally native Generation Z cohorts, seamless user interfaces may serve as an expected hygiene factor; once usability crosses an acceptable threshold, incremental ease of use exhibits diminishing returns in predicting impulsive spending. In contrast, Perceived Usefulness retained a modest but significant unique association ($\beta = .153, p < .001$), confirming that functional utility—such as payment flexibility and purchase efficiency—continues to reduce deliberative friction at checkout. Practically, utility represents the primary mechanism providers can emphasize to enhance consumer value without stimulating risk-laden overspending.

The prominent positive association between Perceived Risk and Impulse Buying ($r = .709, \beta = .640, p < .001$) must be interpreted strictly in non-causal terms. While contrasting with adoption literature where risk acts as an inhibitor, this aligns with evidence placing risk and impulse buying along a shared risky-indebtedness pathway. In this cross-sectional survey, heightened risk perception cannot be assumed to stimulate impulsivity; rather, it plausibly reflects post-hoc awareness, wherein individuals with higher impulsive spending tendencies exhibit greater retrospective consciousness of financial exposure and privacy vulnerabilities.

Collectively, these results reposition the Technology Acceptance Model (TAM) for post-adoption outcomes: usability functions as a baseline requirement, whereas perceived risk and utility dominate subsequent spending tendencies. Rather than investing solely in interface streamlining, stakeholders should adopt risk-aware interventions. Providers and platforms must prioritize transparent repayment terms, visible spending commitments, and the elimination of manufactured urgency cues at checkout. Concurrently, policymakers and financial educators should monitor cumulative credit exposure and target the psychological triggers of deferred payments to foster responsible consumer behavior.

CONCLUSION

This study set out to identify the key features of fintech-driven BNPL as perceived by Generation Z, and to assess and test their relationship with impulse buying among 384 Malaysian Generation Z BNPL users.

Perceived Risk and Perceived Usefulness were confirmed as significant positive predictors of impulse buying, with Perceived Risk the dominant predictor, while Perceived Ease of Use did not add unique explanatory value once the other two constructs were accounted for. In short, what most strongly accompanies impulsive BNPL spending in this sample is not how easy or how useful the service feels, but how risky users perceive it to be. Given the cross-sectional design, that association is best read as a signal of where BNPL-enabled spending is riskiest, rather than as proof of its cause.

These findings must be evaluated within specific methodological constraints. The use of non-probability convenience sampling across social media platforms restricts statistical generalisability across the broader Malaysian Generation Z demographic, as less digitally active segments were underrepresented. Second, the cross-sectional survey design captures perceptual associations at a single juncture, precluding causal inferences regarding whether risk awareness stimulates or follows impulsive purchasing. Finally, common method variance cannot be entirely ruled out due to single-source self-reported Likert data.

Future research should address these boundaries by employing probability-based stratified sampling across urban and rural cohorts and utilizing multi-wave longitudinal panel designs to track spending and repayment behavior across consecutive billing cycles. Incorporating additional constructs—notably financial literacy, objective credit limits, and social influence—via mixed-method approaches would offer deeper mechanistic insights into whether these relationships remain invariant across distinct BNPL platforms and differing consumer risk profiles.

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