

Beyond Traditional Risk Perception: Understanding BNPL Adoption Through an Extended Risk-Benefit Framework

Gladys Greselda Gosal^{1*}; Deandra Vidyanata²; Wiliam Santoso³; Sista Paramita⁴

^{1,2,3}Universitas Ciputra Surabaya; ⁴Universitas Negeri Surabaya

Abstract – This study examines how perceived risks (financial, performance, privacy) and perceived benefits (functional, financial) affect Buy Now Pay Later (BNPL) usage behavior among Indonesian millennials, with financial attitude as a mediating variable. Data from 274 millennial BNPL users were collected via online surveys and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Results show that all risk types significantly reduce financial attitude, with financial risk having the strongest effect. Notably, financial and privacy risk directly increase usage behavior, indicating that risk-aware consumers may still adopt BNPL out of financial necessity. Functional benefit negatively affects financial attitude, suggesting that recognizing convenience heightens caution, while financial benefit directly increases usage without altering attitude. Financial attitude is the strongest predictor of usage and significantly mediates the risk–behavior relationship, producing suppression effects in which direct and indirect paths operate in opposite directions. This study extends Perceived Risk Theory by revealing dual pathways in BNPL contexts and supports the Theory of Planned Behavior in Indonesian fintech settings. The findings imply that providers and regulators should foster positive financial attitudes through transparent communication and financial education to promote responsible BNPL usage.

Keywords: Buy-Now-Pay-Later (BNPL), perceived risk, perceived benefit, financial attitude, usage behavior, millennials

I. INTRODUCTION

Buy Now Pay Later (BNPL) services have emerged as a popular form of consumer finance, allowing consumers to defer payments through interest-free installments. In Indonesia, the BNPL market is projected to reach USD 8.59 billion in 2025, with a compound annual growth rate (CAGR) of 22.2% between 2021 and 2024, making it one of the fastest-growing BNPL markets in Southeast Asia (Research and Markets, 2025). This growth is driven primarily by a young, digitally native population and low credit card ownership, which together create a favorable environment for alternative payment solutions (Fitrisam et al., 2025).

The scale of the BNPL phenomenon in Indonesia is substantial. Data from the Financial Services Authority (OJK) indicate that outstanding BNPL credit in the banking sector reached IDR 26.20 trillion in November 2025, reflecting a year-on-year growth of 20.34% (Irawati, 2026). BNPL users are predominantly younger individuals, with

Millennials (26–35 years) making up 43.9% of users and Generation Z (18–25 years) accounting for 26.5% (Muhamad, 2024). This indicates that younger consumers increasingly depend on BNPL as their preferred payment option. The Indonesian government, through OJK, has also created detailed guidelines focusing on consumer protection and responsible lending practices (Otoritas Jasa Keuangan, 2024).

Despite this expansion, credit risk remains a concern, as reflected in the Non-Performing Loan (NPL) ratio of BNPL, which stood at 2.04% in November 2025 (Irawati, 2026). These developments suggest that the growing adoption of deferred payment facilities may not always be accompanied by adequate financial capability among users, highlighting the importance of understanding the psychological and behavioral factors that influence consumer decisions in digital financial services.

Concerns go beyond default rates to include problematic usage patterns and system-wide risks. Recent studies show that 61% of BNPL users have subprime or deep subprime credit

scores, and 63% of borrowers have multiple BNPL loans at the same time (Consumer Financial Protection Bureau, 2025), raising serious questions about responsible usage. Moreover, the issue of "phantom debt"—BNPL debts that are not reported to credit bureaus—has become a critical concern for financial stability and consumer protection (Pringle, 2024). This lack of visibility in consumer debt profiles creates system-wide risks and makes it harder for both consumers and financial institutions to make informed decisions. Findings show that BNPL late payments increased significantly from 34% in 2024 to 41% of users by March 2026 (Schulz, 2026).

Current BNPL research can be grouped into three main areas: the first focuses on risk analysis (Kumar & Nayak, 2024; Dehaan et al., 2024); the second uses technology adoption models such as TAM and UTAUT to understand adoption intentions (Hoo et al., 2024; Aisjah, 2024); and the third looks at behavioral economics views, particularly impulse buying and overconsumption patterns (Schomburgk & Hoffmann, 2022; Juita et al., 2023). While these areas offer useful insights, important theoretical and methodological gaps remain, especially about moving from intention to actual usage behavior.

The classic perceived risk theory (Jacoby & Kaplan, 1972) identifies six risk dimensions, but this pre-digital framework does not include modern risks relevant to digital financial services. Researchers have addressed this gap by extending the theory to include privacy risk as a seventh dimension specifically for e-services adoption (Featherman & Pavlou, 2003). Despite this advance, the application of privacy risk in BNPL research remains limited, especially in emerging market contexts where data protection and consumer awareness are still developing. Furthermore, recent research in Indonesia has started exploring behavioral aspects, finding that cognitive biases significantly affect BNPL behavior (Lie et al., 2025), highlighting the importance of understanding psychological processes beyond traditional adoption frameworks.

This study aims to fill these gaps by developing and testing an extended risk-benefit framework to explain BNPL usage behavior among Indonesian digital consumers. The research contributes theoretically by clearly

including privacy risk in the BNPL context, given that providers collect and use extensive personal and financial data. Most importantly, it changes the outcome variable from intention—which only explains part of actual behavior variance (Venkatesh et al., 2012; Tamilmani et al., 2020)—to actual usage behavior, providing more useful insights for policymakers and industry practitioners.

Furthermore, the research contributes methodologically and contextually by examining financial attitude (Xiao, 2008) as a mediating variable. Financial attitude works as a psychological process that handles risk-benefit perceptions and turns them into behavioral outcomes. By placing this construct as a mediator, the study provides deeper insight into the how and why questions that direct effect models cannot answer. Additionally, focusing on Indonesia's BNPL market—the largest economy in Southeast Asia with a young population and low traditional banking coverage—provides a unique context that may produce different findings from developed market studies.

A combination of demographic and technological factors has driven the expansion of Indonesia's BNPL market. Beyond the dominance of young, digitally native consumers and low credit card ownership (Fitrisam et al., 2025), the growth of fintech ecosystems and the integration of deferred payment features into e-commerce platforms have substantially enhanced accessibility and convenience for users (Pertiwi et al., 2025). This momentum has been reinforced by the seamless embedding of BNPL services from major local providers (such as Kredivo and Akulaku) and international players (such as Shopee PayLater) into leading e-commerce platforms (such as Tokopedia and Shopee), accelerating mainstream adoption (Lie et al., 2025). Within this rapidly evolving environment, understanding how consumers perceive and respond to the risks and benefits of BNPL becomes essential.

Perceived risk theory states that consumers evaluate potential negative outcomes when making decisions, seen as subjective expected loss (Jacoby & Kaplan, 1972; Peter & Ryan, 1976). Featherman and Pavlou (2003) extended this framework for digital services by adding privacy risk alongside traditional risk

dimensions. In the BNPL context, this study examines three risk dimensions: financial risk (potential money losses from debt buildup and fees), performance risk (concerns about system reliability and service delivery), and privacy risk (concerns about personal data security and misuse).

Research consistently shows that perceived risk negatively affects consumer attitudes toward financial services. Li et al. (2023) found that multiple risk aspects significantly affect consumer views toward fintech services. Retnaningrum and Sundari (2025) confirmed that perceived risk negatively affects financial attitudes among Indonesian BNPL users. Casado-Aranda et al. (2018) showed through brain imaging studies that financial, performance, and privacy risks activate different negative responses. Based on this theoretical foundation and research evidence:

H1_a: Financial risk has a negative effect on financial attitude toward BNPL services.

H1_b: Performance risk has a negative effect on financial attitude toward BNPL services.

H1_c: Privacy risk has a negative effect on financial attitude toward BNPL services.

Beyond its indirect effect through attitude, the risk-benefit framework suggests that perceived risk may directly affect behavior through avoidance mechanisms (Ajzen, 1991). Raj et al. (2025) showed that perceived risks directly affect BNPL behavioral intentions. Kumar and Nayak (2024) found that perceived risk directly reduces BNPL adoption. Gerrans et al. (2021) documented direct effects of risk awareness on BNPL usage patterns in Australia.

Recent BNPL-specific research confirms these direct relationships. Hidayat et al. (2024) found that perceived risk directly affects BNPL usage intentions among Indonesian consumers. Deshlehra (2025) documented that customer risk perceptions directly shape BNPL service usage in India. Ahmad et al. (2025) showed that multiple risk dimensions directly affect BNPL adoption intentions in Malaysia. Therefore:

H2_a: Financial risk has a negative direct effect on BNPL usage behavior.

H2_b: Performance risk has a negative direct effect on BNPL usage behavior.

H2_c: Privacy risk has a negative direct effect on BNPL usage behavior.

The risk-benefit framework recognizes that consumer decision-making involves weighing both potential risks and benefits (Davis, 1989). Perceived benefits are positive outcomes consumers expect from using a service, including functional benefits (convenience, ease of use, flexibility) and financial benefits (cash flow management, access to products, cost savings). Jain and Raman (2023) showed that perceived benefits significantly affect digital finance adoption attitudes across different age groups.

Recent studies confirm the positive relationship between perceived benefits and attitudes in financial services contexts. Appiah and Agblewornu (2025) found that perceived benefits positively shape attitudes toward fintech adoption. Abdul-Rahim et al. (2022) showed that perceived benefits serve as key drivers of positive attitudes toward financial services. Ejaz et al. (2025) confirmed that perceived financial benefits significantly affect adoption attitudes. Therefore:

H3_a: Functional benefits have a positive effect on financial attitude toward BNPL services.

H3_b: Financial benefits have a positive effect on financial attitude toward BNPL services.

Perceived benefits may directly increase BNPL usage through approach motivation processes. Maesen and Ang (2024), in a study published in the *Journal of Marketing*, showed that BNPL installment payments directly increase customer purchase behavior by reducing perceived payment burden. Kumar et al. (2024), in the *Journal of Retailing*, found that BNPL availability directly affects online purchase behavior through immediate benefit realization.

Hegawan et al. (2023) showed that perceived usefulness and value of PayLater/BNPL directly affect satisfaction and purchase intentions among Indonesian consumers. Hui et al. (2025) found that convenience directly predicts BNPL adoption intentions among youth in Sarawak. Simiyu et al. (2025) showed that facilitating conditions, which increase perceived functional benefits, directly affect actual BNPL borrowing behavior. Therefore:

H4_a: Functional benefits have a positive direct effect on BNPL usage behavior.

H4b: Financial benefits have a positive direct effect on BNPL usage behavior.

Financial attitude represents a person's thinking and feelings about financial matters (Xiao, 2008; Widjayanti et al., 2025). Based on the Theory of Planned Behavior (Ajzen, 1991), attitude serves as a basic factor determining behavior. Venkatesh et al. (2012) confirmed the attitude-behavior relationship in technology adoption contexts through the UTAUT2 framework.

Retnaningrum and Sundari (2025) found that financial attitude significantly predicts financial management behavior among Indonesian BNPL users. Septania and Gosal (2025) showed that financial attitude affects BNPL usage among Generation Z in Indonesia. Jonathan and Bertuah (2025) confirmed that financial attitudes predict financial behaviors among millennial workers. Thus:

H5: Financial attitude has a positive effect on BNPL usage behavior.

Financial attitude is proposed to mediate the relationships between risk-benefit perceptions and usage behavior. According to

Xiao (2008), financial attitudes process information about financial products and turn evaluations into behavioral outcomes. Cervellati et al. (2025) found that consumer credit attitudes mediate BNPL perceptions and financing decisions. Kutbi et al. (2024) confirmed that attitudes mediate effects on BNPL-related consumer behavior. Therefore:

H6a: Financial attitude mediates the relationship between financial risk and BNPL usage behavior.

H6b: Financial attitude mediates the relationship between performance risk and BNPL usage behavior.

H6c: Financial attitude mediates the relationship between privacy risk and BNPL usage behavior.

H7a: Financial attitude mediates the relationship between functional benefits and BNPL usage behavior.

H7b: Financial attitude mediates the relationship between financial benefits and BNPL usage behavior.

Figure 1 presents the conceptual framework developed from the hypotheses above.

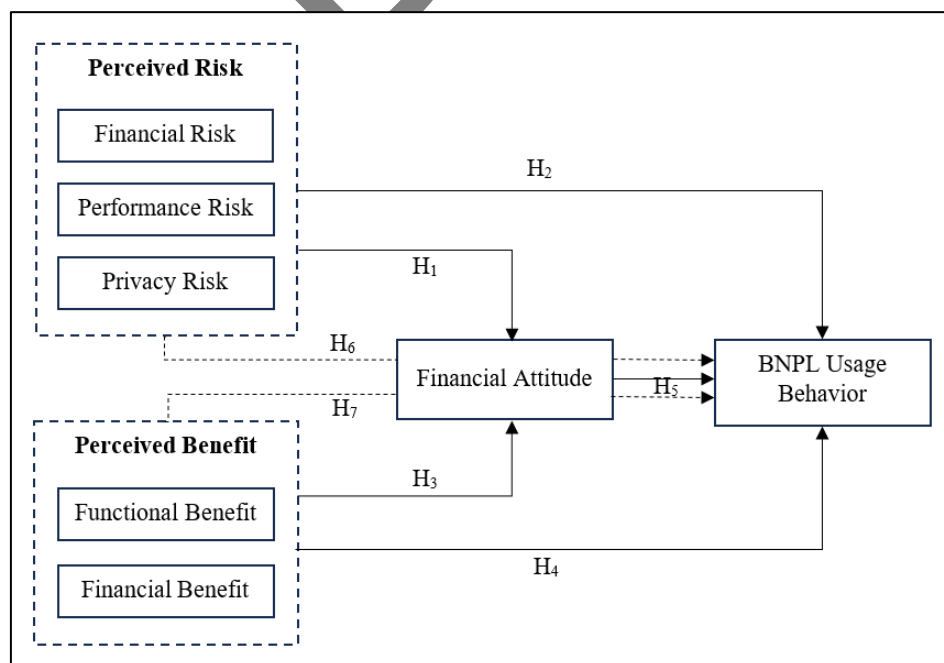


Figure 1 – Conceptual Framework

II. METHODS

This study uses a cross-sectional quantitative research design to examine the relationships between perceived risk, perceived benefits, financial attitude, and BNPL usage behavior among Indonesian consumers. The research model combines an extended risk-benefit framework with financial attitude as a mediating variable to test sixteen hypotheses covering direct effects and mediation effects. Data analysis was performed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0.

The target population includes BNPL service users in Indonesia. Since there is no complete BNPL user database, non-probability snowball sampling was used to select respondents. Sample size was determined using the formula suggested by Hair et al. (2021), which recommends at least 10 observations per indicator for PLS-SEM analysis. With 27 indicators in the research model, the minimum sample size needed is 270 respondents ($27 \times 10 = 270$).

Although snowball sampling was appropriate given the absence of a complete sampling frame for BNPL users in Indonesia, it carries an inherent risk of homogeneity bias, as respondents recruited through referral chains tend to share similar characteristics with those who referred them. Consequently, the sample may not be fully representative of the broader

BNPL user population, limiting the generalizability of the findings. To reduce the risk of homogeneity bias, the initial seeds were diversified across age groups, occupations, and regions. Nevertheless, future studies employing probability-based sampling are encouraged to validate these findings.

Primary data were collected through an online questionnaire distributed via Google Forms. All constructs were measured using validated scales adapted from prior studies to fit the BNPL context. The three risk dimensions—financial risk, performance risk, and privacy risk—were adapted from Featherman and Pavlou (2003), whose e-services risk framework provides the theoretical basis for extending perceived risk to digital financial services. Functional benefit was measured using items adapted from Venkatesh et al. (2012), reflecting the perceived usefulness and convenience dimensions of the UTAUT2 framework, while financial benefit was adapted from Jain and Raman (2023) to capture cost-saving and affordability perceptions. Financial attitude was operationalized using items from Karim et al. (2022), and BNPL usage behavior was measured following Raj et al. (2025), emphasizing actual usage over the preceding six months. Each item was contextualized to the Indonesian BNPL setting and measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Table 1 summarizes the measurement items and their sources.

Table 1 – Measurement Items of Research Variables

Construct	Measurement Items	Source
Financial Risk (FR)	There is a possibility that I may lose money when using BNPL services. Using BNPL services may increase the risk of financial fraud. Using BNPL may cause financial losses for me. Using BNPL involves financial risks in my transactions.	Featherman & Pavlou (2003)
Performance Risk (PeR)	BNPL services might not perform well and could cause problems in my transactions. The security systems of BNPL services may not be strong enough to protect my financial information. There is a possibility that BNPL may not function properly or may have performance issues. Considering the expected performance of BNPL services, using them may still involve certain risks. BNPL systems or servers may not perform well and may process payments incorrectly.	Featherman & Pavlou (2003)
Privacy Risk (PiR)	There is a chance that using BNPL may cause me to lose control over the privacy of my payment information. Using BNPL may lead to a loss of privacy because my personal information could be used without my knowledge.	Featherman & Pavlou (2003)

	Internet hackers (criminals) might gain access to my financial information if I use BNPL services.	
Functional Benefit (FuB)	I found BNPL useful in my online purchases. Using BNPL increases my chance of getting things that are important to me. Using BNPL helps me complete my payment hassle-free. Using BNPL service increased my productivity.	Venkatesh et al. (2012)
Financial Benefit (FiB)	The use of BNPL is cheaper than using traditional financial services I can save money when I use BNPL services I can use various financial services with a low cost when I use BNPL	Jain & Raman (2023)
Financial Attitude (FA)	I am positive about using BNPL services for my financial transactions. Using BNPL services for shopping is a good idea. I believe that using BNPL services for shopping is a low-risk decision. I have a favorable opinion of BNPL services for conducting financial transactions.	Karim et al. (2022)
BNPL Usage Behavior (UB)	I have used BNPL service in the past six months to purchase online. In the past six months, I have used BNPL service to shop from online retailers. I have used BNPL service in the past six months to make personal purchases. I have used different BNPL services in the past six months.	Raj et al. (2025)

III. RESULTS AND DISCUSSION

A total of 274 respondents took part in this study. Table 2 shows the demographic characteristics, revealing more females (61.3%) than males (38.7%). The age distribution indicates that the largest group is in the 25–30 range at 42%, followed by 28.5% in the 31–35 range, and 17.5% aged 18–24, confirming BNPL's popularity among younger people.

Education levels varied, with 46.5% holding bachelor's degrees, 27.7% completing high school, and 20.4% earning diplomas. In terms of employment, 41.2% worked in private companies, 22.3% were government employees, 18.2% owned businesses, 13.9% were students, and 4.4% were housewives. Monthly income was also diverse, with 39.8% earning IDR 5–10 million, 26.6% earning less than IDR 5 million, 20.8% earning IDR 10–15 million, and 12.8% earning above IDR 20 million.

Regional representation showed respondents spread across Indonesian territories, with East Java having the highest share at 24.4%, followed by Central Java at 22.3%, Jakarta at 19%, and Sumatera at 10.2%. Additional participation came from Bali (7.3%), Sulawesi (8.4%), and Kalimantan (8.4%). This geographic spread strengthens the study's applicability across Indonesia's diverse regions.

BNPL platform preferences showed Shopee PayLater as the most widely used (43%), followed by GoPayLater (28.1%),

Kredivo (17.9%), and Akulaku (8.8%), with Shopee PayLater's dominance likely driven by its seamless integration with Indonesia's leading e-commerce platform. In terms of usage duration, 35% had used BNPL services for 6 months to 1 year, 34.7% for 1–2 years, and 16.4% for more than 2 years, indicating stable user retention. Transaction frequency also reflected moderate engagement, with 42.7% making 1–2 BNPL transactions, 41.6% making 3–5 transactions, and 15.7% making more than 5 transactions in the past 6 months.

In summary, the sample mostly consisted of young, educated, and economically active individuals across various employment sectors and income levels, matching typical BNPL user profiles found in existing literature. This demographic diversity provides a strong foundation for examining BNPL usage behaviors.

Table 2 – Respondents' Profile

Characteristics	Frequency	Percentage
Gender		
Male	106	38.7%
Female	168	61.3%
Age		
18-24	48	17.5%
25-30	115	42%
31-35	78	28.5%
36-40	20	7.3%
>40	13	4.7%
Current domicile		
Jakarta	52	19%
Central Java	61	22.3%
East Java	67	24.4%

Bali	20	7.3%
Sulawesi	23	8.4%
Kalimantan	23	8.4%
Sumatera	28	10.2%
Highest level of education		
SMA/SMK	76	27.7%
Diploma	56	20.4%
Bachelor	127	46.5%
Postgraduate	15	5.4%
Employment Status		
Entrepreneur	50	18.2%
Private employee	113	41.2%
Civil servant	61	22.3%
Student	38	13.9%
Housewife	12	4.4%
Average monthly income		
< IDR 5 million	73	26.6%
IDR 5-10 million	109	39.8%
IDR 10-15 million	57	20.8%
> IDR 20 million	35	12.8%
Most frequently used BNPL platform		
Shopee PayLater	118	43%
GoPayLater	77	28.1%
Kredivo	49	17.9%
Akulaku	24	8.8%
Others	6	2.2%
Duration of BNPL usage		
< 6 months	38	13.9%
6 months – 1 year	96	35%
1 – 2 years	95	34.7%
> 2 years	45	16.4%
BNPL usage frequency in the last 6 months		
1 – 2 times	117	42.7%
3 – 5 times	114	41.6%
> 5 times	43	15.7%

The data analysis covered validity, reliability, and hypothesis testing using the bootstrapping approach. Only indicators with factor loadings greater than 0.708 were retained in the measurement model, following Hair et al. (2021) to ensure strong indicator reliability and enhance construct validity. All validity and reliability benchmarks were met, with AVE values above 0.5 and both Cronbach's Alpha and Composite Reliability surpassing 0.7 (Table 3), demonstrating robust internal consistency and construct reliability.

Table 3 – Validity & Reliability Test Result

Indicator	Loading	AVE	CA	CR
FR1	0.893			
FR2	0.882			
FR3	0.891	0.763	0.896	0.928
FR4	0.827			

PeR1	0.897			
PeR2	0.890			
PeR3	0.901	0.744	0.915	0.935
PeR4	0.799			
PeR5	0.819			
PiR1	0.895			
PiR2	0.920	0.830	0.897	0.936
PiR3	0.917			
FuB1	0.647			
FuB2	0.925			
FuB3	0.919	0.745	0.899	0.920
FuB4	0.929			
FiB1	0.598			
FiB2	0.943	0.695	0.838	0.868
FiB3	0.916			
FA1	0.929			
FA2	0.925			
FA3	0.911	0.858	0.945	0.960
FA4	0.940			
UB1	0.833			
UB2	0.864			
UB3	0.843	0.719	0.870	0.911
UB4	0.851			

The discriminant validity check was done using the Heterotrait-Monotrait (HTMT) ratio. Table 4 showed the HTMT values well below the 0.85 threshold, confirming good discriminant validity.

Table 4 – Discriminant Validity Result (HTMT)

	UB	FA	FiB	FR	FuB	PeR
FA	0.501					
FiB	0.173	0.106				
FR	0.132	0.566	0.045			
FuB	0.168	0.163	0.133	0.078		
PeR	0.143	0.355	0.101	0.133	0.083	
PiR	0.086	0.198	0.094	0.134	0.091	0.109

Similarly, the multicollinearity assessment using the Variance Inflation Factor (VIF) indicated satisfactory outcomes, as all VIF scores were below the conservative cutoff of 3.3 (Table 5).

Table 5 – Collinearity Result (VIF)

Variable	BNPL Usage Behavior	Financial Attitude
FA	1.749	
FR	1.440	1.035
PeR	1.199	1.032
PiR	1.088	1.045
FuB	1.108	1.029
FiB	1.041	1.032

Bootstrapping was employed to evaluate the path coefficients and determine their

statistical significance for hypothesis testing, as presented in Table 6.

Table 6 – Hypothesis Test Result

H	Relationship	β	t-value	p-value	Result
H1a	Financial Risk → Financial Attitude	-0.481	11.118	<0.001	Supported
H1b	Performance Risk → Financial Attitude	-0.309	6.360	<0.001	Supported
H1c	Privacy Risk → Financial Attitude	-0.156	2.969	0.003	Supported
H2a	Financial Risk → Usage Behavior	0.148	2.178	0.030	Not Supported*
H2b	Performance Risk → Usage Behavior	0.056	0.937	0.349	Not Supported
H2c	Privacy Risk → Usage Behavior	0.156	2.691	0.007	Not Supported*
H3a	Functional Benefit → Financial Attitude	-0.213	3.346	0.001	Not Supported*
H3b	Financial Benefit → Financial Attitude	0.071	0.689	0.491	Not Supported
H4a	Functional Benefit → Usage Behavior	-0.054	0.960	0.338	Not Supported
H4b	Financial Benefit → Usage Behavior	0.126	2.074	0.039	Supported
H5	Financial Attitude → Usage Behavior	0.558	8.552	<0.001	Supported
H6a	Financial Risk → FA → Usage Behavior	-0.269	7.651	<0.001	Supported
H6b	Performance Risk → FA → Usage Behavior	-0.172	5.247	<0.001	Supported
H6c	Privacy Risk → FA → Usage Behavior	-0.087	2.905	0.004	Supported
H7a	Functional Benefit → FA → Usage Behavior	-0.119	3.241	0.001	Supported*
H7b	Financial Benefit → FA → Usage Behavior	0.040	0.694	0.488	Not Supported

Note: * = significant but in the opposite direction

The results show that all three risk dimensions significantly reduced financial attitude toward BNPL services. Financial risk showed the strongest negative effect ($\beta = -0.481$, $t = 11.118$, $p < 0.001$), showing that concerns about money losses, debt buildup, and hidden costs greatly reduce positive views of BNPL, consistent with the empirical findings of Retnaningrum and Sundari (2025) and Relja et al. (2024), who reported that financial risk concerns significantly shape attitudes toward fintech services. Performance risk also showed a significant negative effect ($\beta = -0.309$, $t = 6.360$, $p < 0.001$), matching Casado-Aranda et al. (2018), who found that service reliability concerns create negative evaluations in digital financial services. Privacy risk showed the smallest but still significant negative effect ($\beta = -0.156$, $t = 2.969$, $p = 0.003$), supporting Li et al. (2023) and Al-Gasawneh et al. (2022), who noted that data security concerns reduce trust in fintech services.

The direct effects of perceived risks on usage behavior reveal unexpected patterns. Financial risk ($\beta = 0.148$, $t = 2.178$, $p = 0.030$) and privacy risk ($\beta = 0.156$, $t = 2.691$, $p = 0.007$) positively influenced usage behavior, contrary to the hypothesized direction. Rather than treating this as an anomaly, the study argue that it reflects the structural conditions of

Indonesia's consumer credit market. With credit card penetration remaining low and a substantial share of the population underbanked, BNPL often functions not as a discretionary convenience but as one of the few accessible forms of short-term credit. Under these conditions, risk perception does not translate into avoidance because consumers lack viable substitutes; the perceived necessity of access outweighs the perceived risk. This interpretation is consistent with the behavioral pattern documented by Gerrans et al. (2021), who found that risk-aware Australian users continued to rely on BNPL when facing immediate financial pressure, and aligns with the constrained-consumer logic discussed by Larrimore et al. (2025) and Kumar and Nayak (2024).

The positive effect of privacy risk warrants a more specific behavioral explanation. The study interpret this through the privacy paradox, in which consumers' stated privacy concerns frequently fail to materialize as protective behavior (Norberg et al., 2007). In the BNPL context, the benefits of access are immediate and concrete, whereas privacy threats are abstract, probabilistic, and temporally distant; consumers therefore discount the latter when making transactional decisions. This suggests that privacy risk operates less as a behavioral

deterrent and more as a background concern that coexists with, rather than constrains, continued usage.

Performance risk demonstrates no significant direct effect ($\beta = 0.056$, $t = 0.937$, $p = 0.349$), indicating that BNPL platforms in Indonesia have likely achieved a stable level of performance. As fintech systems mature and users become more familiar with digital financial services, performance-related risks tend to diminish and lose their influence on usage decisions (Li et al., 2023).

A particularly counterintuitive result is the significant negative effect of functional benefit on financial attitude ($\beta = -0.213$, $t = 3.346$, $p = 0.001$). This finding is theoretically meaningful rather than contradictory. The findings propose that heightened awareness of BNPL's convenience activates a defensive, self-regulatory response: precisely because consumers recognize how effortlessly BNPL enables spending, they become more guarded in their evaluative stance toward it, anticipating the risk of overuse. In other words, the very frictionlessness that makes BNPL functionally attractive simultaneously signals a threat to financial self-control, prompting a more cautious attitude. This mechanism is consistent with self-control and dynamic decision-making perspectives, in which individuals must balance immediate temptations with long-term goals (Stillman et al., 2025), and mirrors the protective attitudinal responses to excessive convenience reported by Relja et al. (2024) and Cervellati et al. (2025). Within the Indonesian context—where debt prudence and caution toward credit remain culturally salient—this defensive reaction may be especially pronounced among consumers who are aware of the financial discipline that deferred-payment schemes demand.

Financial benefit indicates no significant effect on attitude ($\beta = 0.071$, $t = 0.689$, $p = 0.491$), possibly reflecting the standardization of BNPL financial features in Indonesia where multiple providers offer similar interest-free terms (Ejaz et al., 2025; Castro-González et al., 2020).

For direct effects on usage behavior, functional benefit demonstrates no significant effect ($\beta = -0.054$, $t = 0.960$, $p = 0.338$), indicating that convenience alone is not enough to drive actual usage without positive attitudes.

This matches Maesen and Ang (2024) and Kumar et al. (2024), who noted that functional features work mainly through attitude formation. In contrast, financial benefit significantly increased usage behavior ($\beta = 0.126$, $t = 2.074$, $p = 0.039$), suggesting that financial incentives work as immediate behavioral triggers directly motivating BNPL use (Hegawan et al., 2023; Hui et al., 2025; Raj et al., 2025).

Financial attitude emerged as the strongest predictor of BNPL usage behavior ($\beta = 0.558$, $t = 8.552$, $p < 0.001$), providing strong support for the Theory of Planned Behavior (Ajzen, 1991). This large effect size highlights the critical role of attitude in shaping fintech usage. The finding matches Relja et al. (2024) and Retnaningrum and Sundari (2025), who confirmed that attitudes serve as main behavioral drivers in digital payment contexts. This emphasizes that efforts targeting BNPL usage should mainly focus on attitude change strategies.

The mediation analyses reveal that financial attitude significantly mediates risk-behavior relationships. All risk dimensions show significant negative indirect effects on usage behavior through financial attitude: financial risk ($\beta = -0.269$, $t = 7.651$, $p < 0.001$), performance risk ($\beta = -0.172$, $t = 5.247$, $p < 0.001$), and privacy risk ($\beta = -0.087$, $t = 2.905$, $p = 0.004$). The theoretically critical result is that, for financial and privacy risk, the direct effects were positive while the indirect effects through attitude were negative, producing a suppression effect (MacKinnon & Lamp, 2021). The study interprets this not merely as opposing statistical pathways but as evidence of two competing cognitive processes operating within the same consumer. The positive direct path reflects necessity-driven behavior: an immediate, demand-led response in which risk-aware consumers use BNPL because their short-term financial circumstances require it. The negative indirect path reflects deliberative evaluation: when risk perceptions are processed through financial attitude, they appropriately suppress usage, consistent with reasoned, longer-term judgment. The coexistence of these pathways indicates that BNPL decisions are governed simultaneously by impulsive, need-based motivation and by reflective, attitude-based appraisal.

This dual-pathway structure constitutes the study's central theoretical contribution. It extends Perceived Risk Theory by demonstrating that risk awareness does not uniformly deter behavior; rather, its behavioral influence depends on whether it is channeled through deliberative attitudinal processing or bypassed by immediate situational need. This nuance is particularly relevant in emerging-market fintech settings such as Indonesia, where financial necessity and limited credit alternatives can override the protective function that risk perception is conventionally assumed to serve (Raj et al., 2023; Irimia-Diéguez et al., 2023).

For perceived benefits, functional benefit exhibits a significant negative indirect effect on usage behavior through financial attitude ($\beta = -0.119$, $t = 3.241$, $p = 0.001$). This mediated pathway is the behavioral extension of the unexpected negative effect of functional benefit on attitude discussed earlier: because heightened awareness of convenience prompts a more guarded evaluative stance, that cautious attitude in turn dampens actual usage. Functional convenience therefore does not straightforwardly encourage BNPL use; when filtered through deliberative attitudinal processing, it can paradoxically restrain it. This reinforces the broader pattern observed for perceived risks—that financial attitude consistently operates as a reflective, self-regulatory mechanism that can reverse the intuitive direction of an antecedent's influence (Juita et al., 2023). In contrast, financial benefit indicates no significant mediation ($\beta = 0.040$, $t = 0.694$, $p = 0.488$), indicating that financial incentives bypass attitudinal processing and instead act as immediate behavioral triggers that directly motivate usage (Septania & Gosal, 2025; Cervellati et al., 2025). Taken together, the two benefit dimensions operate through fundamentally different routes: functional benefit through a deliberative, attitude-mediated path, and financial benefit through a direct, impulse-like path—mirroring the dual-process structure identified in the risk findings.

Table 7. R-Square Result

Variable	R ²	R ² Adjusted
Financial Attitude	0.428	0.418
BNPL Usage Behavior	0.276	0.260

Based on results shown in Table 7, the model shows good explanatory power with R² values of 0.428 for financial attitude and 0.276 for BNPL usage behavior. The R² of 0.428 means that the perceived risk and benefit variables explain about 42.8% of the variance in financial attitude, which is a large portion given the complexity of attitude formation. An R² value of 0.276 for usage behavior indicates that the model accounts for 27.6% of the variation in BNPL usage. The remaining 72.4% is likely influenced by other factors not captured in the model, such as social influence, facilitating conditions, or habitual behavior (Venkatesh et al., 2012; Ajzen, 1991).

IV. CONCLUSION

This study examined how perceived risk and perceived benefit affect BNPL usage behavior among Indonesian millennials, with financial attitude as a mediating variable. The findings show that all three perceived risk dimensions significantly reduce financial attitude, with financial risk being the strongest negative predictor, followed by performance risk and privacy risk. Contrary to expectations, however, financial risk and privacy risk exhibited significant positive direct effects on usage behavior. These positive associations are empirically supported; the explanations proposed for them, such as necessity-driven usage and privacy trade-offs, are interpretive and would benefit from direct measurement in future studies.

For perceived benefits, the study found contrasting effects on attitude and behavior. Functional benefit had a significant negative effect on financial attitude, while financial benefit had no significant effect on attitude but directly increased usage behavior. The explanation that this negative effect reflects a self-regulatory response to convenience is interpretive and would benefit from direct measurement in future studies. The key outcome of this study is that financial attitude stands out as the most influential predictor of BNPL usage behavior, offering robust support for the Theory of Planned Behavior. In addition, the mediation analysis revealed that financial attitude plays a significant mediating role in the

relationship between perceived risk and usage behavior, with suppression effects identified where direct positive effects exist alongside negative indirect effects, revealing the dual pathways through which risk perceptions affect BNPL usage.

This study makes several theoretical contributions to the BNPL and fintech literature. Its primary contribution is the extension of Perceived Risk Theory through the identification of dual pathways through which risk perceptions affect BNPL usage behavior, indicating that risk awareness does not uniformly reduce usage but may operate through suppression mechanisms. The study further confirms the applicability of the Theory of Planned Behavior in the Indonesian BNPL context, establishing the central mediating role of financial attitude. It also clarifies the distinct mechanisms of perceived benefits—functional benefits operating through attitudinal pathways and financial benefits through direct behavioral reinforcement—and addresses the underexplored role of privacy risk, revealing its significant but nuanced influence on both attitudes and behavior.

From a practical perspective, the findings offer useful insights for BNPL providers, regulators, and financial educators. The principal practical implication is that building positive financial attitudes should be the main strategic focus for providers, given that attitude is the strongest predictor of usage. This can be pursued through clear communication about costs and terms to reduce financial risk perceptions, improved security features and transparent privacy policies to address privacy concerns, and education programs that promote responsible BNPL usage. The negative effect of functional benefit on attitude implies that providers should balance convenience messaging with responsibility education, while the direct positive effect of financial benefit on usage indicates that promotional incentives

effectively drive use but should be paired with responsible-usage guidance. For regulators such as OJK, these findings can inform targeted financial literacy programs addressing the specific risk perceptions that most strongly affect attitudes and behavior.

Despite its valuable contributions, this study has several limitations. Its cross-sectional design restricts the ability to infer causality, as the observed relationships capture a single moment rather than definitive cause-and-effect patterns. The sample was limited to millennials in Indonesia, which may constrain the generalizability of the findings to other age groups or geographic contexts with different fintech environments. In addition, the model explained about 42.8% of the variance in financial attitude and 27.6% in BNPL usage behavior, suggesting that factors not included in the model—such as financial literacy, self-control, social influence, or habit—may also affect these outcomes. Future research should employ longitudinal designs to examine how risk perceptions, attitudes, and usage behavior evolve over time. The unexpected positive effects of financial and privacy risk on usage behavior warrant further investigation through qualitative methods to examine the underlying psychological mechanisms, while comparative studies across consumer segments and countries would help establish the boundaries of the findings.

In summary, by identifying both expected and unexpected relationships, this study advances understanding of consumer decision-making in the fintech sector, with the central mediating role of financial attitude and the identified suppression effects as its key insights. These findings provide actionable direction for BNPL providers, policymakers, and financial educators seeking to foster a more responsible BNPL environment in Indonesia.

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