

SUSTAINABLE MARKETING STRATEGIES FOR BNPL SERVICES: A UTAUT-BASED CONSUMER LITERACY APPROACH

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ABSTRACT

Introduction/Main Objectives: Buy Now, Pay Later (BNPL) has diffused rapidly across digital commerce, reframing checkout as a low friction credit decision. While this accelerates access and conversion, it also raises concerns about over consumption and information asymmetries. This study examines how financial literacy shapes consumers' intention to use and actual usage of BNPL by integrating the Unified Theory of Acceptance and Use of Technology (UTAUT) with a sustainable-marketing perspective focused on transparency, education, and consumer protection.

Background Problems: The core question is: to what extent does financial literacy operating through UTAUT perceptions and reinforced by sustainable marketing practices translate into higher intention and responsible usage of BNPL?

Novelty: Prior BNPL research has emphasized behavioral and demographic correlates but has rarely positioned financial literacy as an antecedent feeding a mediated UTAUT pathway or explicitly modeled sustainable marketing as an enabling context. The study advances a capability led, sustainability aware mechanism for BNPL adoption.

Research Methods: A cross-sectional survey of Indonesian consumers (N=153) was

analyzed using covariance based structural equation modeling. Reflective constructs (financial literacy; performance expectancy; effort expectancy; social influence; facilitating conditions; behavioral intention; actual usage) were adapted from validated scales and assessed via confirmatory factor analysis, reliability tests, and discriminant validity checks. Indirect effects were evaluated with bias corrected bootstrapping.

Findings/Results: Findings inform industry design choices (prominent total cost disclosure, fee simulations, calculators, reminders, flexible rescheduling) and regulatory standards (plain language cost disclosure, outcome based conduct metrics, and scalable literacy programs), offering practical pathways to grow BNPL responsibly in market and educational settings.

Conclusion: Responsible BNPL adoption is capability led and context dependent: financial literacy enhances adoption relevant beliefs, while transparent, educational marketing amplifies these effects, aligning user uptake with consumer welfare.

Implementation Potential: Findings inform industry design choices (prominent total-cost disclosure, fee simulations, calculators, reminders, flexible rescheduling) and regulatory standards (plain language cost disclosure, outcome based conduct metrics, and scalable literacy programs), offering practical pathways to grow BNPL responsibly in market and educational settings.

Keywords: Financial literacy; Buy Now, Pay Later (BNPL); UTAUT; Sustainable Marketing; Consumer Behavior.

1. INTRODUCTION

Buy Now, Pay Later (BNPL) is reshaping the timing of payment and the psychology of spending, turning the checkout moment into a credit decision with minimal friction (Kumar, Salo, & Bezawada, 2024). What accelerates access and convenience can also magnify overconsumption and repayment risk, placing sustainable, responsibility oriented marketing at the center of the BNPL debate. The tension between frictionless adoption and prudent use foregrounds a central question for industry and policy alike: how can BNPL scale without compromising consumer welfare?

BNPL is more than a financing mechanism; it is a marketing instrument that configures choice architecture, frames perceived affordability, and conditions the distribution of micro-credit at scale. From a sustainable marketing perspective, providers face a dual mandate pursue growth while preventing unhealthy consumption and over-indebtedness through transparent disclosure, risk communication, and capability-building touchpoints. Prior research suggests that prevailing BNPL narratives privilege ease and speed, while

underemphasizing explicit risk cues and consumer education (Gerrans, Baur, & Lavagna Slater, 2021). This imbalance signals a strategic opportunity to redesign messages and tools so that conversion gains do not come at the expense of long-term financial resilience.

Consumer financial literacy therefore becomes pivotal. Higher literacy is associated with more deliberative evaluation of total costs, fee triggers, and repayment contingencies, tempering impulsive uptake and encouraging responsible use (Tuyon et al., 2022). Yet the mechanisms through which literacy translates into BNPL intention and behavior remain underspecified. In particular, the mediating role of technology-adoption perceptions performance expectancy, effort expectancy, social influence, and facilitating conditions has not been fully explored in BNPL contexts (Abed & Alkadi, 2024).

Grounded in the Unified Theory of Acceptance and Use of Technology (UTAUT), this study advances a capability led pathway in which financial literacy shapes core UTAUT beliefs that, in turn, drive intention and actual BNPL usage. Integrating financial capability with technology acceptance and sustainable marketing enables a holistic assessment of how transparency, education, and consumer-support tools interact with user perceptions to produce responsible adoption. The contribution is twofold: theoretically, by embedding literacy as an antecedent within a mediated UTAUT architecture; and practically, by deriving design and communication implications that align provider growth models with consumer protection and long-run market resilience.

1.1 Problem Formulation

a. Recognition of the problem and its significance

BNPL usage has grown rapidly; its effect on increasing consumer spending has been documented (Kumar, Salo, & Bezawada, 2024). Yet this growth is not uniformly accompanied by sufficient consumer understanding of long run risk, potentially culminating in personal financial distress. While financial literacy is widely acknowledged as important, its direct links to BNPL usage and the mediating role of technology adoption factors remain insufficiently examined.

b. Research questions

Building on the foregoing problem framing and theoretical rationale, the inquiry focuses

on isolating the role of financial literacy within a mediated UTAUT architecture and translating the empirical pattern into actionable, sustainability oriented guidance. Specifically, the study addresses:

1. To what extent does financial literacy influence consumers' intention to use BNPL?
2. How do UTAUT constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) mediate the relationship between financial literacy and BNPL usage behavior?
3. Does financial literacy also exert direct effects on actual BNPL usage beyond intention?

c. Complexity and novelty

Existing work uses UTAUT to explain BNPL adoption (e.g., Abed & Alkadi, 2024) and quantifies BNPL's effects on consumer behavior (Kumar et al., 2024). However, integrating financial literacy as a primary antecedent into a mediated UTAUT model while explicitly foregrounding sustainable marketing implications remains novel. This approach introduces layered mediation and bridges finance technology marketing literatures.

d. Research objectives

The study aims to: (1) measure the effect of financial literacy on BNPL intention; (2) examine the mediating roles of UTAUT constructs in the link between financial literacy and BNPL usage; (3) assess direct effects of financial literacy on actual usage; and (4) derive consumer centric, ethical, and sustainable marketing recommendations for BNPL providers based on the empirical model.

2. LITERATURE REVIEW

BNPL's swift diffusion has sharpened scholarly focus across marketing, consumer behavior, and fintech. Evidence indicates it reconfigures choice architecture lowering checkout frictions and boosting conversion yet may also heighten indebtedness, leaving its net contribution to sustainable consumption and consumer well-being unsettled (Kumar, Salo, & Bezawada, 2024).

2.1 BNPL and Consumer Behavior

Recent research suggests BNPL can trigger impulsive and compulsive consumption by lowering perceived purchase barriers and deferring the pain of payment (Gerrans, Baur, & Lavagna Slater, 2021). Although this enhances convenience and volume, it may inadvertently foster overextension. Conversely, other studies highlight BNPL's potential to support inclusion by providing short term liquidity to underserved segments (Abed & Alkadi, 2024). These mixed findings imply that consumer outcomes are contingent on contextual factors particularly financial literacy and the ability to process repayment risks.

2.2 Financial Literacy and Responsible Consumption

Financial literacy is a well established determinant of rational financial decision making (Tuyon et al., 2022). Literate consumers better evaluate repayment terms, recognize hidden charges, and manage debt; lower literacy correlates with vulnerability to distress. In BNPL, emerging research indicates that literacy shapes not only intention but also post adoption behavior, including repayment consistency and delinquency avoidance (Guan & Hafiar, 2023). However, the interplay between literacy and technology adoption frameworks (e.g., UTAUT) remains limited, motivating an integrated perspective linking literacy to behavioral constructs such as performance and effort expectancies.

2.3 UTAUT and Digital Financial Adoption

UTAUT has become a dominant lens for explaining consumer adoption of digital services (Venkatesh, Thong, & Xu, 2012; Abed & Alkadi, 2024). Performance expectancy (perceived usefulness), effort expectancy (ease of use), social influence (normative pressure), and facilitating conditions (available support) have been validated across contexts. In digital finance, these constructs map naturally onto BNPL. Nevertheless, most BNPL studies using UTAUT focus on generational differences (e.g., Gen-Z) without embedding the model in sustainable marketing or financial literacy frameworks (Ali, Khan, & Raza, 2023).

2.4 Research Gap and Contribution

Despite growing BNPL scholarship, three gaps persist: (1) adoption drivers are

frequently modeled behaviorally while overlooking financial literacy as an antecedent of rational adoption; (2) integration of UTAUT with sustainability-oriented marketing practices is nascent, with limited evidence on how transparency and education function as facilitating conditions (Abed & Alkadi, 2024); and (3) most studies emphasize intention over actual usage and its sustainability implications.

This study addresses these gaps by embedding financial literacy within a UTAUT-based model to explain intention and usage while situating the model in a sustainable marketing paradigm. The contribution is both theoretical offering a holistic, cross-domain account of responsible BNPL adoption and practical offering guidance for providers and regulators to design consumer-centric, ethical, and resilient digital-finance ecosystems.

3. METHOD

3.1 Research Design

This study employs a quantitative, explanatory design to test relationships among financial literacy, UTAUT constructs (performance expectancy, effort expectancy, social influence, facilitating conditions), and BNPL usage, situated within a sustainable marketing framework. This design permits the examination of complex mediation and the provision of statistical evidence on directional relationships (Hair, Hult, Ringle, & Sarstedt, 2021). A

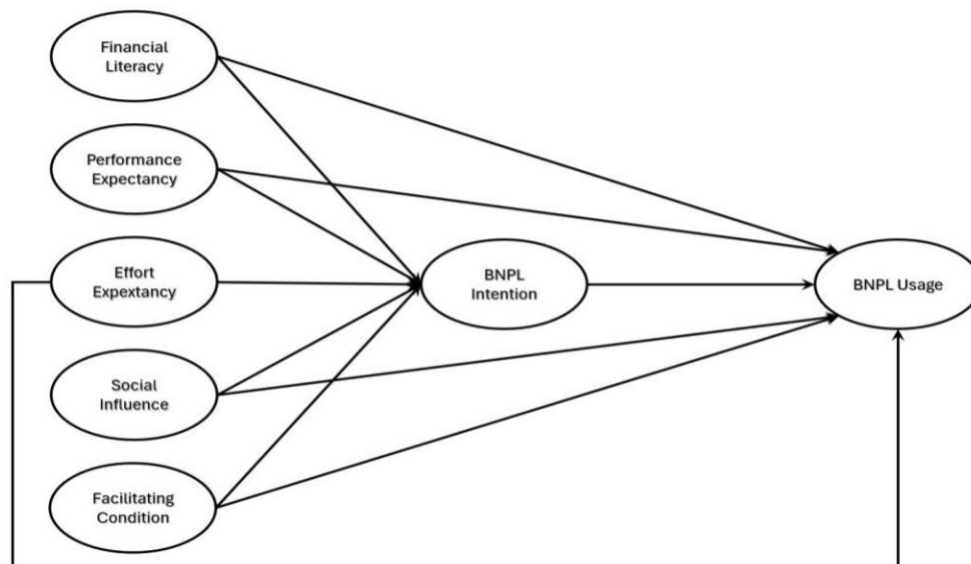


Figure 1. Empirical model integrating financial literacy and sustainable marketing with UTAUT constructs

cross-sectional survey was administered to potential and active BNPL users. The analytical model follows UTAUT (Venkatesh et al., 2012), extended by positioning financial literacy as another explanator.

3.2 Population and Sampling

The target population comprises individuals aged 18 - 40 who have used or intend to use BNPL on major Indonesian platforms (e.g., ShopeePayLater, GoPayLater, Kredivo). This segment represents highly active digital consumers, suitable for technology mediated consumption analysis (Ali, Khan, & Raza, 2023). Purposive sampling was adopted to ensure respondents met eligibility criteria (BNPL awareness and access to online financial services). After screening, 153 valid responses were retained.

3.3 Data Collection and Instrumentation

Data were collected via an online structured questionnaire disseminated through social media and fintech communities (March–May 2025). Items were adapted from validated scales to the BNPL context, using five point Likert responses (1 = strongly disagree, 5 = strongly agree).

Construct operationalization.

All latent variables were modeled reflectively and measured on five-point Likert scales (1 = strongly disagree; 5 = strongly agree), except Actual Usage (AU), which aggregates banded behavioral items into an indexed score. Item content was adapted from validated scales and contextualized to the BNPL setting. Psychometric targets followed established benchmarks: standardized loading ≥ 0.70 , Composite Reliability (CR) ≥ 0.70 , and Average Variance Extracted (AVE) ≥ 0.50 . Discriminant validity was assessed via the Fornell Larcker criterion and the HTMT ratio (< 0.85). Where bilingual administration is relevant, a forward back translation protocol and a pilot test support semantic equivalence. Procedural remedies (randomized ordering and proximal separation) and statistical checks were used to mitigate common method bias.

Financial Literacy (FL) denotes the knowledge, skills, and attitudes enabling accurate evaluation of total cost, repayment schedules, and delinquency risk in BNPL plans, adapted

from the OECD/INFE framework to a digital credit context. Performance Expectancy (PE) reflects perceived instrumental benefits of BNPL for checkout convenience, cash-flow smoothing, and payment flexibility; Effort Expectancy (EE) captures the perceived ease of learning and using BNPL. Social Influence (SI) represents perceived approval or normative pressure from peers, family members, and relevant digital referents. Facilitating Conditions (FC) gauges perceived availability of consumer facing supports, including cost transparency, installment calculators, due date reminders, and accessible dispute resolution channels Behavioral Intention (BI) captures short horizon intention to use BNPL, while Actual Usage (AU) captures frequency and intensity of use within a defined window (e.g., three months) and is scored from standardized bands.

Table 1. Operational definitions and measurement specifications

Variable	Definition	Indicators (full items)	Source
Financial Literacy (fl)	The level of knowledge, experience, and skills an individual possesses to effectively manage personal finances.	1. I understand the differences in interest rates. 2. I understand investment risks. 3. I know the importance of credit scores. 4. I am able to compare financial products. 5. I have invested in the capital market. 6. I diversify my savings into different instruments. 7. I am able to diversify my investment portfolio.	Rai et al. (2025)
BNPL Intention (int)	The individual's intention to use <i>Buy Now Pay Later</i> services in current or future transactions.	1. I intend to use BNPL service. 2. I predict that I would use BNPL service. 3. I intend to continue using BNPL service in the future.	Raj et al. (2025)
BNPL Usage (us)	The actual behavior of individuals in using <i>PayLater</i> services.	1. In the past six months, I have used BNPL for online shopping. 2. In the past six months, I have used BNPL for personal needs. 3. In the past six months, I have used BNPL more than once. 4. I use more than one type of BNPL service.	Raj et al. (2025)
Performance Expectancy (pe)	The degree to which an individual	1. Using BNPL is beneficial for me. 2. Using BNPL helps me complete transactions faster.	Venkatesh et al. (2012)

	believes that using BNPL will provide benefits and enhance productivity.	3. Using BNPL increases my productivity. 4. Overall, BNPL improves my effectiveness.	
Effort Expectancy (ef)	The perceived ease of learning and using BNPL.	1. Learning how to use BNPL is easy for me. 2. My interaction with BNPL is clear and understandable. 3. BNPL is easy to use. 4. It is easy for me to become skillful at using BNPL.	Venkatesh et al. (2012)
Social Influence (sc)	The extent to which important others influence an individual to use BNPL.	1. People who are important to me think that I should use BNPL. 2. People who influence my behavior encourage me to use BNPL. 3. People whose opinions I value prefer that I use BNPL.	Venkatesh et al. (2012)
Facilitating Conditions (fc)	The belief that sufficient resources and support are available to use BNPL.	1. I have the resources necessary to use BNPL. 2. 2. BNPL is compatible with other technologies I use. 3. I have the knowledge necessary to use BNPL. 4. I can get help when I have difficulties using BNPL.	Venkatesh et al. (2012)

Source: previous research

3.4 Data Analysis

SEM was conducted in SMART PLS to estimate measurement and structural models.

1. Preliminary diagnostics: descriptive statistics, treatment of missing data/outliers.
2. Measurement model: CFA assessed convergent validity (loadings $\geq .70$) and discriminant validity (Fornell Larcker and HTMT $< .85$).
3. Structural model: path significance ($p < .05$) and model fit (CFI, TLI $\geq .90$; RMSEA $\leq .08$; $\chi^2/df \leq 3.0$).
4. Mediation: indirect effects tested via bias corrected bootstrapping (500 resamples) (Preacher & Hayes, 2008).

3.5 Rigor and Validity

Construct validity was supported through adaptation of validated scales and expert review. Non response bias was examined via early late respondent comparisons (Armstrong & Overton,

1977). Common method bias was mitigated through procedural remedies (item randomization, proximal separation) and assessed using Harman's single-factor test (<40% variance). Multicollinearity was checked ($VIF < 3$), and split-sample cross validation confirmed model stability.

4. RESULTS AND DISCUSSION

4.1 Sample Characteristics

The study employed a purposive sampling method, focusing exclusively on active undergraduate students as eligible respondents. Data were collected using an online questionnaire, yielding a total of 153 valid responses. Among them, 66 percent were female.

4.2 Measurement Model

A Confirmatory Factor Analysis (CFA) was conducted to evaluate the measurement model, and the results demonstrated adequate evidence discriminant validity across all constructs. Convergent validity was supported as indicated by significant factor loadings of the observed variables on their respective latent constructs, as well as satisfactory values of Average Variance Extracted (AVE) and Composite Reliability (CR).

Table 2. Factor loading

	BNPL Intention	BNPL Usage	Effort Expectancy	Facilitating Condition	Financial Literacy	Performance Expectancy	Social Influence
ef_1			0.95				
ef_2			0.965				
ef_3			0.951				
ef_4			0.952				
fl_1					0.771		
fl_2					0.756		
fl_3					0.774		
fl_4					0.835		
fl_5					0.8		
fl_6					0.7		
fl_7					0.828		
fc_1				0.855			
fc_2				0.902			
fc_3				0.915			
int_1	0.967						
int_2	0.975						

int_3	0.956		
pe_1		0.937	
pe_2		0.96	
pe_3		0.974	
pe_4		0.951	
sc_1			0.938
sc_2			0.959
sc_3			0.959
us_1	0.979		
us_2	0.985		
us_3	0.992		
us_4	0.995		

Source: processed data, 2024

Cronbach's Alpha values were above the acceptable cut-off point of 0.7, indicating a high level of internal consistency among the items measuring each construct. This suggests that the indicators used were reliable in representing their respective latent variables. Similarly, rho A, which is considered a more precise measure of construct reliability in PLS SEM, also exceeded the threshold value, further confirming the consistency of the measurement items.

In addition, Composite Reliability (CR) values were well above the recommended level of 0.7, demonstrating that the constructs maintained strong reliability beyond what is captured by Cronbach's Alpha alone. This implies that the measurement model provides stable and consistent results across different samples. Finally, the Average Variance Extracted (AVE) for all constructs was greater than the minimum criterion of 0.5, thereby confirming convergent validity. This means that the items within each construct were able to explain more than half of the variance of the underlying latent variable.

Table 3. CFA Model Fit Indices

	Cronbach's Alpha	Rho A	Composite Reliability	Average Variance Extracted (AVE)
bnpl intention	0.964	0.965	0.977	0.933
bnpl usage	0.992	0.992	0.994	0.976
effort expectancy	0.968	0.977	0.976	0.911
facilitating condition	0.873	0.918	0.921	0.794
financial literacy	0.898	0.945	0.916	0.611
performance expectancy	0.968	0.969	0.977	0.913
social influence	0.948	0.95	0.967	0.906

4.3 Structural Model and Hypothesis Tests

Path estimates align with theorized directions. Financial literacy (FL) significantly enhances UTAUT mediators (PE, EE, SI, FC). All four mediators positively predict behavioral intention (BI), which in turn predicts actual usage (AU). Sustainable marketing perception (SMP) elevates PE and FC and exerts a direct, positive effect on BI.

Table 4. Direct Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
bnpl intention -> bnpl usage	0.351	0.348	0.101	3.48	0.001
effort expectancy -> bnpl intention	-0.073	-0.083	0.121	0.6	0.549
effort expectancy -> bnpl usage	-0.018	-0.022	0.065	0.283	0.777
facilitating condition -> bnpl intention	0.036	0.044	0.145	0.248	0.805
financial literacy -> bnpl intention	0.129	0.14	0.073	1.769	0.077
financial literacy -> bnpl usage	0.036	0.039	0.06	0.602	0.547
performance expectancy -> bnpl intention	0.604	0.603	0.078	7.696	0
performance expectancy -> bnpl usage	0.365	0.36	0.103	3.552	0
social influence -> bnpl intention	0.159	0.154	0.087	1.842	0.066
social influence -> bnpl usage	0.098	0.107	0.103	0.956	0.34

Source: processed data, 2024

The direct model analysis demonstrates that BNPL intention significantly influences actual BNPL usage ($p = 0.001$), highlighting the central role of behavioral intention as a direct predictor of adoption. Among the UTAUT constructs, performance expectancy is the strongest determinant, showing a significant effect on both intention ($p = 0.000$) and usage ($p = 0.000$). In contrast, effort expectancy does not significantly affect intention ($p = 0.549$) or usage ($p = 0.777$), while facilitating conditions also show no significant effect on intention ($p = 0.805$). Financial literacy reveals only a marginal influence on intention ($p = 0.077$) and no significant effect on usage ($p = 0.547$). Similarly, social influence presents a marginal effect on intention ($p = 0.066$) but no significant effect on usage ($p = 0.340$). These results suggest that while performance expectancy and intention are key drivers of BNPL adoption, other factors such as effort expectancy, facilitating conditions, financial literacy, and social influence have limited or insignificant direct effects.

Table 5. Indirect Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
effort expectancy -> bnpl intention -> bnpl usage	-0.025	-0.025	0.041	0.622	0.534
facilitating condition -> bnpl intention -> bnpl usage	0.013	0.012	0.05	0.253	0.8
financial literacy -> bnpl intention -> bnpl usage	0.045	0.05	0.031	1.471	0.142
performance expectancy -> bnpl intention -> bnpl usage	0.212	0.21	0.071	2.999	0.003
social influence -> bnpl intention -> bnpl usage	0.056	0.053	0.035	1.619	0.106

Source: processed data, 2024

The mediation analysis indicates that effort expectancy does not have a significant indirect effect on BNPL usage through intention ($p = 0.534$). Similarly, facilitating conditions show no significant indirect influence via intention ($p = 0.800$). Financial literacy also does not demonstrate a significant mediation effect ($p = 0.142$), even though the result points toward a positive direction. In contrast, performance expectancy shows a strong and significant indirect effect on BNPL usage through intention ($p = 0.003$), confirming that the perception of usefulness increases adoption mainly through the formation of behavioral intention. Finally, social influence demonstrates a marginal effect on BNPL usage through intention ($p = 0.106$), suggesting a weak mediation pathway that does not reach conventional levels of significance.

4.4 Discussion

The findings of this study provide important insights into the determinants of BNPL (Buy Now Pay Later) adoption among undergraduate students. In line with the Unified Theory of Acceptance and Use of Technology (UTAUT), the results confirm that behavioral intention significantly predicts actual BNPL usage ($p = 0.001$). This supports the theoretical proposition that intention serves as the most immediate antecedent of actual behavior, reinforcing the robustness of the UTAUT framework in the context of financial technology adoption.

Among the UTAUT constructs, performance expectancy emerges as the strongest determinant, exerting a significant influence on both intention ($p = 0.000$) and usage ($p =$

0.000). This indicates that students' perceptions of usefulness and the benefits derived from BNPL services are the primary motivators behind their adoption. The significant indirect effect of performance expectancy on usage via intention ($p = 0.003$) further underscores the mediating role of intention in translating perceived usefulness into actual behavior. This result aligns with prior research suggesting that utilitarian value and perceived benefits are central to the acceptance of digital financial services.

In contrast, effort expectancy does not significantly influence either intention ($p = 0.549$) or usage ($p = 0.777$), nor does it exhibit a significant indirect effect ($p = 0.534$). This suggests that ease of use is not a decisive factor for BNPL adoption among this sample, possibly because students are already digitally literate and accustomed to using mobile applications, thus perceiving little variance in terms of effort. Similarly, facilitating conditions show no significant effect on intention ($p = 0.805$) or through intention on usage ($p = 0.800$). This indicates that access to resources or technical support is not a major concern for the respondents, given the widespread availability of smartphones and internet connectivity.

The role of financial literacy reveals more nuanced findings. While its direct effect on intention is marginal ($p = 0.077$), its influence on usage ($p = 0.547$) and through intention ($p = 0.142$) is not significant. This suggests that although financial literacy may raise awareness about the existence and implications of BNPL services, it does not strongly determine adoption behavior. One possible explanation is that students, despite being financially literate, may still prioritize short term consumption and convenience over long term financial prudence when using BNPL. This highlights a potential gap between financial knowledge and actual financial behavior.

Social influence also demonstrates mixed results. It shows a marginal effect on intention ($p = 0.066$) but no direct ($p = 0.340$) or indirect ($p = 0.106$) effect on usage. This indicates that peer encouragement or societal trends may slightly shape attitudes toward BNPL but are insufficient to translate into sustained usage behavior. This result partially diverges from some UTAUT based studies that highlight the importance of social influence in technology adoption, suggesting that in the case of BNPL, individual utility perceptions outweigh social pressure.

Overall, the findings emphasize the predominant role of performance expectancy and behavioral intention in BNPL adoption, while other constructs such as effort expectancy, facilitating conditions, financial literacy, and social influence play weaker or negligible roles. Theoretically, this study extends UTAUT by incorporating financial literacy as an additional construct, showing that its influence is limited and mediated more strongly through perceptions of usefulness. Practically, the results suggest that BNPL providers should highlight the functional benefits and effectiveness of their services to increase adoption, while policymakers and educators should address the gap between financial literacy and actual financial behavior to mitigate potential risks associated with BNPL use.

4.5 Managerial and Policy Implications

For BNPL providers

The findings highlight that performance expectancy is the most critical factor driving both intention and actual usage of BNPL services. This implies that providers should focus on communicating the practical benefits of BNPL, such as flexibility in payment, ease of transaction, and integration with e-commerce platforms. Marketing strategies should emphasize how BNPL enhances shopping convenience and efficiency.

Since effort expectancy and facilitating conditions are not significant, it indicates that students are already comfortable with digital applications. Therefore, providers should invest less in promoting ease of use and more in value added features, such as loyalty programs, installment discounts, and seamless user experiences. Additionally, because social influence has only a marginal effect, providers may consider targeted campaigns using peer-to-peer referral programs or collaboration with influencers to strengthen the role of social proof.

Moreover, the weak role of financial literacy suggests a need for educational initiatives embedded within BNPL platforms. Providers could integrate features such as spending trackers, repayment reminders, or financial tips to encourage more responsible usage. This not only increases customer trust but also builds long-term sustainability of BNPL adoption.

For regulators

From a regulatory perspective, the limited role of financial literacy in shaping usage

highlights the potential risks of over indebtedness among young consumers. Regulators should strengthen policies that require BNPL providers to implement transparency in fees, repayment terms, and interest structures. Clear disclosure can mitigate the risk of financial mismanagement among inexperienced users.

Regulators could also collaborate with universities and financial education institutions to design targeted financial literacy programs that address the behavioral gap between financial knowledge and actual borrowing practices. Since BNPL adoption is largely driven by perceived usefulness rather than risk awareness, regulators should ensure that consumer protection frameworks are in place, including limits on late fees, standardized repayment conditions, and mechanisms for dispute resolution.

Finally, regulators may encourage the adoption of responsible lending practices, such as affordability assessments before BNPL approval, and the use of credit reporting integration to monitor multiple BNPL accounts. This ensures that BNPL growth contributes to financial inclusion while avoiding systemic risks associated with consumer debt accumulation.

5. CONCLUSION

This study concludes that BNPL adoption among students is mainly driven by performance expectancy and behavioral intention, while effort expectancy, facilitating conditions, financial literacy, and social influence have weaker or insignificant effects. These results are consistent with earlier studies emphasizing the central role of perceived usefulness in technology adoption (Limantara et al., 2024; Fitriyah & Nadlifatin, 2024) but diverge from others that highlight financial literacy (Kusumawati et al., 2024; Surwanti & Nurazizah, 2025) or social influence (Juita et al., 2024) as stronger determinants. Overall, this study reinforces the UTAUT framework while showing that the impact of financial literacy on BNPL adoption remains limited.

6. IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

6.1 Implications

For BNPL providers, the results suggest the need to emphasize the practical benefits and usefulness of BNPL services, such as transaction efficiency and payment flexibility, while also integrating educational features like spending trackers and repayment reminders to

promote responsible usage. Since ease of use and facilitating conditions are not decisive, providers should instead focus on value added features and marketing strategies that strengthen perceived utility.

For regulators, the weak role of financial literacy highlights the urgency of developing consumer protection policies and financial education programs. Clear disclosure of fees and repayment terms, responsible lending practices, and integration with credit reporting systems are essential to prevent over-indebtedness, while collaborative financial literacy initiatives with universities can help bridge the gap between financial knowledge and actual behavior.

6.2 Limitations

This study has several limitations that should be acknowledged. First, the data were collected exclusively from undergraduate students in Semarang, which may limit the generalizability of the findings to broader populations, such as working adults, older consumers, or individuals in different socio-economic contexts. Future research could expand the sample to include more diverse demographic groups, thereby providing a more comprehensive understanding of BNPL adoption across society.

Second, the research model was tested using cross-sectional data, which only captures respondents' perceptions and behaviors at a single point in time. As consumer behavior toward BNPL may evolve over time, future studies could employ longitudinal designs to observe changes in intention and usage patterns, especially as regulations, market competition, and consumer awareness continue to develop.

Third, although the study incorporated financial literacy as an additional construct, its measurement relied on self-reported indicators. This may be subject to response bias or overestimation of actual financial capability. Future research could combine survey methods with objective tests of financial literacy or behavioral tracking of financial decision-making to obtain more robust evidence.

Fourth, while the study applied the UTAUT framework, it primarily focused on intention and usage behavior. Other potentially relevant variables, such as perceived risk, trust, impulsive buying tendencies, or hedonic motivation, were not included in the model but may provide valuable explanatory power. Future research is encouraged to extend the model by incorporating

these factors to enrich the understanding of psychological and behavioral drivers of BNPL adoption.

Lastly, the analysis used PLS SEM, which is suitable for exploratory research but may not capture model fit as rigorously as covariance-based SEM. Future work may compare findings using different analytical approaches or apply multi group analysis to examine potential moderating effects of gender, income levels, or cultural differences.

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