The Psychology of BNPL Repayment Procrastination: Behavioral Insights on Present Bias and Financial Motivation

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Abstract - The rapid growth of Buy Now, Pay Later (BNPL) services have transformed consumer financing, particularly among younger demographics. However, concerns about repayment procrastination have been observed to persist. Unlike traditional credit systems, BNPL offers instant approval, flexible installments, and low entry barriers, creating unique behavioral dynamics that merit dedicated investigation. Therefore, this research aimed to examine BNPL repayment procrastination through the lens of Temporal Motivation Theory (TMT), focusing on three key components, namely present bias, value (reward), and delay (installment period). To achieve the research aim, survey data were collected from 134 active BNPL users in Indonesia and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The obtained results show that present bias significantly increased BNPL repayment procrastination, while perceived value (reward) does not directly reduce it. Furthermore, delay (installment period) is found to positively contribute to procrastination but does not moderate the relationship between present bias and procrastination. The insignificant moderating effects of value and delay suggest that long-term BNPL users may not prioritize rewards when postponing repayments. The results also show that financially stable users with fixed incomes and short-term installment preferences are less likely to procrastinate, while those with high outstanding balances or longer installment plans face greater risks. This research extends the application of TMT in a fintech context and provides practical insights for improving BNPL risk assessments, designing repayment schemes, and promoting financial literacy.

Keywords: Buy Now Pay Later (BNPL), financial procrastination, present bias, Temporal Motivation Theory (TMT), consumer credit behavior

I. INTRODUCTION

BNPL is a model that has become a significant innovation in the global financial technology (fintech) sector. According to a previous study, its increasing adoption is driven by accessibility, low or zero interest rates for timely repayments, and minimal credit checks, making the model particularly attractive to younger consumers and financially underserved populations (Newswire, 2025). The rapid expansion of digital financial services and the integration of BNPL with e-commerce platforms have further accelerated its uptake, specifically in developing markets such as Indonesia (Sanjeev, 2024).

In Indonesia, the BNPL model, which is commonly known as PayLater, has grown significantly since the mid-2010s, fueled by rising digital payment adoption (Sriyono et al., 2023), a large unbanked population (Mahardika, 2025), and evolving consumer preferences that prioritize perceived usefulness, ease of use, and convenience (Hidayat, 2022; Maurizka et al., 2021). Furthermore, due to the low penetration of credit cards in the country, the majority of consumers have turned to BNPL as an alternative credit source

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(Newswire, 2025).

The COVID-19 pandemic in 2020 further accelerated BNPL adoption by significantly increasing digital transactions and e-commerce engagement (O'Brien et al., 2024). Major BNPL providers, such as Shopee PayLater, GoPay Later, Kredivo, and Akulaku PayLater, have since dominated the market through strategic partnerships with e-commerce platforms and retailers (Muhamad, 2023; Sanjeev, 2024). As of November 2024, outstanding BNPL credit in Indonesia reached IDR 21.77 trillion, marking a 42.68% year-on-year increase. Simultaneously, the number of BNPL accounts also rose by 5.32%, from 23.27 million in October 2024 to 24.51 million in November 2024 (OJK, 2025).

Based on previous observations, a substantial portion of BNPL users in Indonesia belongs to younger generations, with 43.9% being millennials aged 26–35 and 26.5% belonging to Generation Z aged 18–25 (Muhamad, 2024). This demographic trend invariably shows a growing reliance by younger consumers on BNPL services as a preferred payment method (Sanjeev, 2024). However, it also raises concerns about financial literacy and repayment behavior, as younger users may be more susceptible to overspending and repayment procrastination (Halim et al., 2024).

Variations in BNPL eligibility criteria among providers have been further observed to contribute significantly to differences in repayment behavior. For instance, some BNPL providers, such as Kredivo, require users to verify their respective monthly income, while others, including Shopee PayLater and Akulaku PayLater, only require a valid National identity card without income verification. This lenient requirement allows broader accessibility, particularly among students and informal workers who may not have a stable income. However, it also raises concerns about repayment risk, as users without a verified source of income may struggle to meet their financial obligations, increasing the probability of delayed or defaulted payments (Muthia, 2022).

Regardless of the fact that BNPL has facilitated financial inclusion, its rapid expansion has also introduced significant financial risks, particularly consumer debt accumulation, repayment procrastination, and credit score deterioration. In a bid to address this issue, the Financial Services Authority of Indonesia (OJK) has integrated BNPL repayment records into the Financial Information Service System (SLIK), meaning that consumer BNPL repayment history now directly affects consumer credit score (OJK, 2024a). Late or missed payments can lower a consumer's credit rating, reducing their eligibility for future financial products such as credit cards, personal loans, and mortgages (Askpert, 2024). As a result, consumers must understand the financial implications of delayed repayments. When users fail to pay outstanding balances in full, interest is added to the remaining debt, which can significantly increase the principal amount over time. As stated in a previous study, this compounding effect may lead to a substantial financial burden (Khan et al., 2024). It is also important to state that failure to meet the minimum repayment requirement can negatively affect a consumer's credit score. As of late 2024, Non-Performing Financing (NPF) rate for BNPL transactions rose from 2.76% in October 2024 to 2.92% in November 2024, reflecting growing BNPL defaults and financial distress (Isaac, 2025).

To mitigate these risks, OJK has introduced stricter regulations, which are effective from January 1, 2027. These regulations require BNPL users to be at least 18 years old and to earn a minimum monthly income of IDR 3 million (OJK, 2024b). Although these measures aim to curb excessive borrowing and promote financial responsibility, the regulations do not directly address the behavioral factors underlying BNPL repayment procrastination. Therefore, a deeper understanding of consumer psychology, decision-making patterns, and financial behavior is essential for developing effective strategies to reduce BNPL-related financial risks.

A significant issue associated with BNPL use is repayment procrastination, in which consumers delay repayments despite being aware of respective financial obligations. Based on the observations, the majority of earlier investigations on procrastination have traditionally focused on financial behaviors related to conventional credit mechanisms, such as credit cards and loans (Barboza, 2017). Unlike credit card or loan repayments, which carry immediate penalties and are viewed as a deliberate financial commitment, BNPL services are integrated into e-commerce transactions. BNPL are often used for small, daily purchases, and marketed as hassle-free and interest-free when repaid on time. These features make spending more impulsive and repayment less consciously managed, thereby diminishing the perceived importance of repayment obligations and motivating consumers to treat BNPL as part of routine consumption rather than debt. Considering these insights, BNPL repayment behavior warrants a distinct behavioral investigation separate from traditional credit contexts.

Procrastination is a well-documented behavioral tendency with significant personal and financial implications. As stated in a previous study, procrastination arises from various psychological factors, including personality traits, cognitive biases, and environmental influences (Ma et al., 2024). In recent years, investigators have increasingly tried to identify the underlying causes of procrastination. For instance, Zhang and Feng (2020) find that the behavior typically occurrs when the aversion to a task outweighs the perceived utility of its future outcomes. Another study elucidated that the behavior can be reinforced by reduced attentional control (Wiwatowska et al., 2024), and individuals often procrastinate despite being aware of potential negative consequences (Le Bouc & Pessiglione, 2022). Procrastination has been positively associated with two aspects of self-assessment, namely a deliberate tendency to postpone planned tasks and a more passive pattern of frequently running out of time

or struggling to meet deadlines (Zuber et al., 2020).

A key theoretical framework frequently applied to understand procrastination is TMT, which identifies procrastination as a primary area of application. TMT explains why individuals postpone tasks despite their initial intentions by emphasizing four key factors, expectancy, value, delay, and impulsiveness (Steel & König, 2006). According to the theory, motivation increases with higher levels of expectancy and value but decreases with greater Impulsiveness and Delay. The constant "1" is included in the model's equation to prevent it from approaching infinity as the delay approaches zero (Steel et al., 2018). This framework provides a structured explanation of how motivation is shaped by these interrelated components and can be mathematically represented through Equation 1.

$$Motivation = \frac{Expectancy \times Value}{1 + Impulsiveness \times Delay} \quad (1)$$

The structural features of BNPL correspond closely with the four constructs of TMT. This is because low entry barriers and the absence of immediate penalties amplify Impulsiveness, extended installment periods reduce sensitivity to Delay, and embedded cashback or discount incentives emphasize the Value dimension. However, few studies have explicitly related BNPL repayment behavior to TMT, leaving a very significant theoretical and practical gap. This behavioral shift suggests that BNPL repayment procrastination is not merely a financial issue but also a psychological phenomenon, which is influenced by convenience and instant gratification. This insight is consistent with the concept of Present Bias, a cognitive tendency where individuals prioritize immediate gratification over long-term financial well-being (Kuchler & Pagel, 2021). Regardless of the fact that previous investigations have explored the role of Present Bias in procrastination, its application to financial procrastination, particularly in BNPL repayment behavior, remains underexplored.

This research aims to examine the psychological and structural determinants of BNPL repayment procrastination in Indonesia through the lens of TMT. Specifically, it investigates the effects of present bias, value (reward), delay (installment period) on repayment procrastination, as well as the moderating roles of value and delay in shaping the relationship between present bias and repayment procrastination. Apart from testing these relationships, this study also aims to extend the application of TMT in BNPL context, which differs significantly from traditional credit mechanisms, and to provide practical insights for BNPL providers, regulators, as well as consumers on mitigating repayment procrastination and its associated financial risks.

Present bias is a cognitive bias that influences decision-making by causing individuals to prioritize immediate rewards over larger future benefits, often due to the uncertainty associated with delayed outcomes (Maji & Prasad, 2025). This bias has been widely adopted in studies examining inconsistent planning behaviors, including procrastination and financial neglect (Fomin et al., 2022). Based on previous research, present-biased individuals tend to favor decisions with immediate and certain consequences (Reddinger, 2024). Numerous studies have shown that these individuals overvalue immediate rewards and underestimate the value of delayed rewards (Xiao & Porto, 2018).

Maji and Prasad (2025) observe that in India, present bias negatively affected financial behavior, as individuals tend to prefer taking loans rather than saving for future needs. Similarly, in Japan, the concept is observed to cause credit card holders to delay bill payments even when those delays result in additional interest charges (Kuramoto et al., 2024). Barboza (2017) further finds that individuals with present-biased preferences and limited self-control are more likely to procrastinate on credit card repayments, leading to increased debt accumulation and a higher probability of rolling over balances from one billing cycle to the next. In this context, Akagi et al. (2024) also state that individuals with strong present bias are more prone to abandoning tasks due to procrastination.

This behavior is evident in BNPL repayment, where consumers may delay payments while underestimating the long-term financial burden of accumulating debt. BNPL services enable users to defer repayments with minimal short-term consequences, thereby reinforcing delayed financial responsibility. As a result, BNPL users with strong present bias may prioritize short-term consumption over future financial obligations, contributing to greater debt accumulation and increased financial distress.

Building on prior research where present bias is linked to financial procrastination, this research examines the influence of present bias on BNPL repayment behavior. Thus, the following hypothesis is proposed.

H1: Present bias has a positive effect on BNPL repayment procrastination.

In TMT, value refers to the reward or benefit an individual gains from completing a task or achieving a goal (Steel & König, 2006). The size and significance of a reward can strongly influence behavior. For instance, studies have shown that rewards enhance both speed and accuracy, as individuals tend to work faster and more precisely when anticipating a reward (Wolf & Lappe, 2023). Similarly, Munir and Krowin (2024) find that implementing a reward-and-punishment system significantly improved employee performance by motivating individuals to achieve their respective objectives. Mamun and Khan (2020) also inferred that high productivity is closely related to a well-structured reward and motivation framework. When rewards are provided immediately rather than delayed until the end of a period, individuals show less tendency to procrastinate, as they are more motivated to act promptly (Chebolu & Dayan, 2024). These

results emphasize the essential role of rewards in shaping desired behaviors.

As stated in previous research, present bias leads individuals to assign greater weight to immediate costs and benefits than to those occurring in the future (Direr, 2020). Moreover, Van den Berg et al. (2010), who develop Reward Responsiveness (RR) scale to measure individual sensitivity to rewards, show that individuals with high reward responsiveness more likely to engage in behaviors that maximize immediate incentives. This suggests that individuals highly sensitive to rewards may be more inclined to repay respective BNPL obligations promptly when attractive incentives are offered. Considering the importance of the value (reward) dimension, this research aims to address the gap in understanding its influence on BNPL repayment procrastination. Thus, the following hypothesis is proposed.

H2: Value (reward) has a negative effect on BNPL repayment procrastination.

Recent studies have consistently emphasized the role of present bias in shaping repayment behavior, particularly within credit and BNPL contexts. Based on previous research, individuals with strong present bias tend to undervalue future consequences, leading to greater procrastination and delayed repayments (Maji & Prasad, 2025; Zhang & Ma, 2024). Reward mechanisms such as cash incentives, interest rate reductions, and prize-based programs have been shown to improve repayment rates, with effects ranging from modest to substantial (Hendy et al., 2020). However, the effectiveness of these rewards largely depends on their design, including factors such as timing, frequency, and framing, all of which are particularly important elements for present-biased individuals (Aggarwal et al., 2020). Adjustments to repayment schedules or reward intervals can help mitigate the cognitive effects of temporal discounting, thereby improving repayment behavior (Aggarwal et al., 2020; Balakrishnan et al., 2020; Bisin & Hyndman, 2020). It has also been reported that appropriate rewards would invariably prevent task abandonment and enhance task persistence (Akagi et al., 2024). Present bias toward monetary outcomes tends to be most pronounced when payments are truly immediate (Balakrishnan et al., 2020). For example, Prize-Linked Debt schemes have been found to increase credit card debt repayments among borrowers who typically make only the minimum payment (Hendy et al., 2020).

These results suggest that the perceived value of rewards can moderate the relationship between present bias and repayment procrastination. When the perceived reward value is high, individuals may be more motivated to make timely repayments, despite their inclination toward immediate gratification. Therefore, value (reward) is conceptualized as an independent variable that directly influences BNPL repayment procrastination and a moderating variable that alters the strength of the relationship between present bias and procrastination, consistent with behavioral finance and TMT frameworks. Based on these insights, the following hypothesis is proposed.

H3: Value (reward) moderates the relationship between present bias and BNPL repayment procrastination.

The term "delay" refers to the amount of time remaining before a deadline. In the context of installment periods, it refers to the period allowed before a financial obligation must be repaid. According to TMT, the longer the delay before a deadline, the lower an individual's motivation to complete tasks promptly. Individuals who heavily discount future outcomes possess a greater tendency to postpone tasks, especially when deadlines are distant, suggesting that extended repayment periods in BNPL arrangements may reduce urgency and lead to delayed payments (Zhang & Ma, 2024).

Previous research has reported that present-biased consumers frequently postpone credit card repayments, even when no interest charges are applied, reflecting a tendency to avoid immediate costs (Kuchler & Pagel, 2021). In the BNPL context, longer or more flexible installment periods have been associated with increased purchase frequency and higher transaction values, but also with greater repayment procrastination. This occurs as reduced perceived financial pressure and lower repayment salience diminish the immediacy of repayment obligations (Jamil et al., 2024; Maesen & Ang, 2024). Empirical evidence has consistently shown that the length of installment periods influences both spending behavior and repayment timeliness. This finding can be primarily attributed to the fact that longer installments are often perceived as less burdensome due to smaller periodic payments, but the feature may increase total costs and promote repayment procrastination (Ashby et al., 2025; Maesen & Ang, 2024; Shin et al., 2020). Regardless of these insights, other previous explorations have reported that even BNPL schemes with shorter installment durations can increase purchase incidence and transaction amounts, while also increasing the risk of repayment procrastination and financial distress (deHaan et al., 2024; Maesen & Ang, 2024).

Knowles et al. (2021), although not conducted in a financial setting, found that a one-month deadline significantly reduced responses compared to a one-week deadline or no deadline at all, as the extended period motivated procrastination and potential forgetting. This result suggests that longer timeframes may reduce attention and motivation, an effect that could similarly influence consumers' repayment behavior under extended installment plans (Maesen & Ang, 2024). Overall, the findings show that extended installment periods may foster repayment procrastination behavior by reducing repayment urgency and salience. Based on the observed insights, the following hypothesis is proposed.

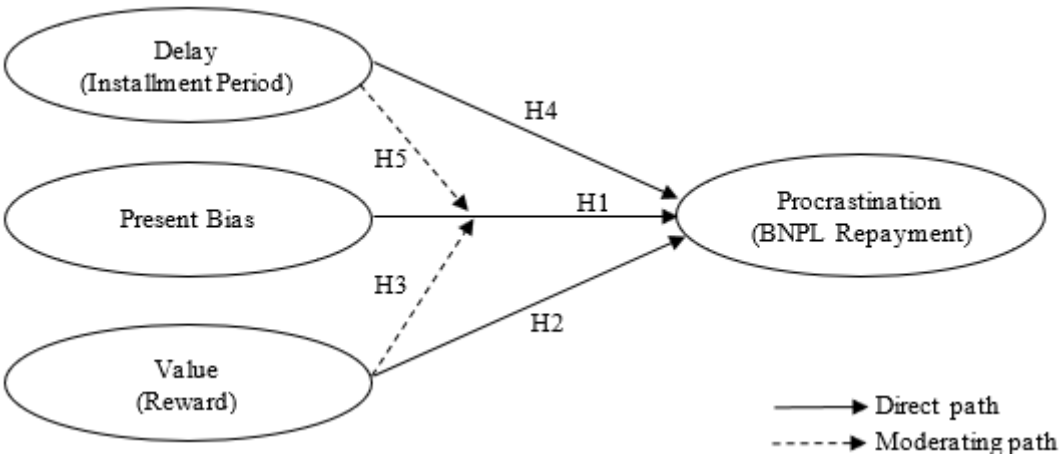

Figure 1 Research Model
Source: Author (2025)

H4: Delay (installment period) has a positive effect on BNPL repayment procrastination.

The relationship between present bias and repayment procrastination in BNPL length of the installment period. Present bias, which refers to the cognitive tendency to prioritize immediate gratification over future consequences, can lead individuals to procrastinate on fulfilling financial obligations. Individuals with strong present bias are more likely to postpone payments when the obligation seems distant (Barboza, 2017; Chen et al., 2020). A shorter installment period places the repayment deadline closer to the present, reducing the influence of present bias on procrastination. As consumers must confront the consequences of their spending sooner, the tendency to delay repayment decreases. On the other hand, longer installment periods may amplify the effects of present bias. The perceived distance to repayment allows individuals to prioritize immediate consumption and defer financial responsibilities more easily (Knowles et al., 2021). Shorter repayment durations tend to promote timely payments, while longer durations foster psychological detachment from repayment obligations, thereby increasing the probability of procrastination.

Delay (installment period) is conceptualized in this study as having a dual role, both as an independent variable directly influencing repayment procrastination and as a moderating variable that shapes the strength of the relationship between present bias and procrastination. Based on these insights, the following hypothesis is proposed.

H5: Delay (installment period) moderates the relationship between present bias and BNPL repayment procrastination.

The research model, based on the hypothesis developed previously, is shown in Figure 1.

II. METHODS

This research adopts the use of a cross-sectional quantitative study design to examine how present bias, value (reward), and delay (installment period) influence BNPL repayment procrastination. The dependent variable includes BNPL repayment procrastination, while the independent variables consist of present bias, value (reward), and delay (installment period). Consistent with theoretical expectations, present bias is hypothesized to increase procrastination, while value (reward) is anticipated to reduce it. These relationships represent the direct effects within the model.

The investigation further tested for moderating effects. In this context, value (reward) is proposed to weaken the relationship between present bias and BNPL repayment procrastination when the perceived reward is high. Meanwhile, delay (installment period) is expected to strengthen this relationship when the repayment period is longer. Both value (reward) and delay (installment period) are thus modeled as dual-role variables, serving both as independent variables that directly influence BNPL repayment procrastination and as moderators that condition the relationship between present bias and procrastination.

The model is theoretically grounded in behavioral finance and TMT. It is conceptually in correspondence with contingency and systems theory, which recognize how contextual variables can simultaneously have direct effects on outcomes while also modifying the relationships among other variables in a system (Gómez et al., 2020). In line with Holbert et al. (2023), this research advances beyond the traditional "one variable, one role" assumption by allowing variables to serve multiple functional purposes, thereby enhancing both theoretical richness and analytical precision.

The target population comprises active BNPL users in Indonesia who have at least one outstanding BNPL transaction. Considering the absence of a

comprehensive BNPL user database, a non-probability sampling method, specifically purposive sampling, was adopted to select respondents who met the study's criteria.

Data were collected through an online questionnaire distributed via Google Forms from February 4 to February 26, 2025. The questionnaires are recognized as an objective, cost-effective, and efficient tool for gathering information on individuals' knowledge, attitudes, beliefs, and behaviors of individuals (Balza et al., 2022). This method enables the research to reach a broad pool of respondents who satisfy the purposive sampling criteria, particularly across geographically dispersed BNPL user populations in Indonesia.

The present research uses the validated measurement scales for all constructs, with a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) to capture respondents' perceptions. BNPL repayment procrastination is measured using 12 items adapted from Steel (2010) that assess financial procrastination tendencies, such as delaying repayments and avoiding financial obligations.

Present bias is measured using a single-item adapted from Xiao and Porto (2018), which captures individuals' preferences for immediate gratification over future benefits. The decision to adopt a single-item measure corresponds with prior research that has successfully used the approach in financial decision-making contexts (Xiao & Porto, 2018). Although multi-item scales generally offer greater predictive validity, studies have shown that single-item measures can be appropriate when a construct is concrete, unidimensional, and directly observable (Diamantopoulos et al., 2012). Considering the fact that present bias is a specific cognitive inclination toward immediate rewards, adopting a single-item measure is both methodologically valid and operationally efficient (Xiao & Porto, 2018).

Value (reward) is measured using eight items adapted from Van den Berg et al. (2010) to evaluate the influence of financial rewards (e.g., cashback, discounts) on timely repayment behavior. Delay (installment period) is assessed using an ordinal scale based on a single custom item that examined the effect of longer repayment periods on the probability of BNPL repayment procrastination. Respondents are asked, "What type of PayLater installment do you use most often?" with the following response options: (1) Pay in full next month, (2) 3-month installment, (3) 6-month installment, (4) 9-month installment, and (5) 12-month or longer installment. Since the installment period is an objective feature of BNPL plans, respondents can accurately report respectively preferred repayment duration without requiring multiple items. Moreover, adopting a single-item ordinal scale ensures data collection efficiency while minimizing respondent fatigue.

The research applies PLS-SEM using SmartPLS 4.1 software to analyze the effects of present bias, value (reward), and delay (installment period) on BNPL repayment procrastination. PLS-SEM is a comprehensive statistical approach suitable for examining complex relationships among latent variables, particularly when the research objective emphasizes prediction and explanation of variance rather than achieving exact model fit (Hair et al., 2021). This method is selected for its capability to analyze multiple relationships simultaneously, accommodate latent constructs with multiple indicators, and effectively test mediation as well as moderation effects. It is also highly appropriate for research with small to medium sample sizes and non-normal data distributions.

To evaluate the significance of the relationships among variables, this research uses a one-tailed hypothesis test at a 95% confidence level ($\alpha = 0.05$) with a t-value threshold of 1.65. Accordingly, considering the directional nature of the proposed hypotheses, the one-tailed test provided greater statistical power for detecting effects in the expected direction. Thus, Table 2 presents the scale measurements.

Table 2 Scale Measurements

Variable - Source	Items	Measurement Items
Procrastination (BNPL Repayment) – Steel (2010)	PPS1	I often delay my PayLater payments until close to or past the due date.
	PPS2	Even after deciding to pay my PayLater bill, I still tend to postpone it.
	PPS3	I often spend time on other things before finally making my PayLater payment.
	PPS4	When approaching the due date, I tend to do other activities rather than pay immediately.
	PPS5	Even though paying a PayLater bill only takes a few steps, I still tend to delay it for days.
	PPS6	I often make the payment a few days after my initial plan.
	PPS7	I often say, "I will pay it tomorrow," but still end up postponing it.

Table 2 Scale Measurements (Continued)

Variable - Source	Items	Measurement Items
	PPS8	I usually delay payments until they are close to the deadline.
	PPS9	I often run out of time to pay my PayLater bill on time.
	PPS10	I do not always pay my PayLater bills according to the schedule.
	PPS11	I often struggle to meet the payment deadlines.
	PPS12	Delaying payments until the last minute has caused me to incur fines or additional fees.
Present Bias - Xiao and Porto (2018)	PB1	I tend to focus more on the present and pay less attention to the future.
Value (Reward) - Van den Berg et al. (2010)	RR1	I would try to pay my PayLater bill earlier if there were attractive rewards or incentives.
	RR2	If I have received a reward or incentive for paying my PayLater bill early, I am more likely to do it again.
	RR3	I am willing to do anything to gain additional benefits from early PayLater payments.
	RR4	If I manage to pay on time and receive a reward or incentive, I will continue to pay early.
	RR5	When there's an opportunity to get a reward for paying my PayLater bill early, I am immediately interested.
	RR6	I feel more motivated to pay earlier if there are additional benefits I can receive.
	RR7	If I know there's a reward or incentive program for on-time payments, I will take full advantage of it.
	RR8	If there's a chance to get cashback or discounts for paying early, I will do it immediately.
Delay (installment period) - Author (2025)	D1	What type of PayLater installment plan do you use most often?

Source: Primary Data Processed (2025)

III. RESULTS AND DISCUSSIONS

The sample consists of 134 respondents. Based on the data in Table 3, the demographic profile of respondents shows a relatively balanced gender distribution, with 51% male and 49% female participants. In terms of age, 60% of respondents are aged 26–36, while 30% are aged 18–25. Furthermore, the majority are single (63%), and 46% report having financial dependents. Regarding educational attainment, 82% held a bachelor's degree, and all respondents (100%) report that they have a fixed monthly income, with 71% earning between Rp 5–10 million per month. The majority of respondents are private sector employees (99%), with most residing in Tangerang (65%), followed by Jakarta (15%) and Depok (5%). Overall, the sample primarily comprised young, educated, and financially active individuals, which corresponds well with the BNPL user segment described in the Introduction.

Data in Table 4 shows that Shopee PayLater is the most frequently used BNPL provider, accounting for 56% of respondents, followed by PayLater BCA (26%). The majority of respondents have been using BNPL services for more than one year (55%). Furthermore, the demographics' typical monthly BNPL spending ranged from Rp 100,000–500,000 (43%) to Rp 500,000–1 million (34%). Regarding repayment preferences, the majority favored either paying in full the following month (43%) or opting for 3-month installments (43%). The primary reasons for using BNPL included taking advantage of promotions and discounts (35%), the convenience of purchasing without immediate payment (34%), and postponing payments to allocate funds for other purposes (13%).

Table 3 Respondents' Profile

Characteristics	Frequency	Percentage
Gender		
Male	69	51%
Female	65	49%
Age (Years)		
18-25	40	30%
26-36	80	60%

Table 3 Respondents' Profile (Continued)

Characteristics	Frequency	Percentage
36-45	13	10%
46-55	1	1%
Marital Status		
Single	84	63%
Married	48	36%
Widower/Widow	2	1%
Financial Dependents (Children/Relatives)		
Yes	62	46%
No	72	54%
Education		
High School	9	7%
Diploma	13	10%
Bachelor's degree	110	82%
Master's degree	2	1%
Fixed monthly income		
Yes	134	100%
No	0	0%
Employment Status		
Private sector employee	133	99%
Business owner	1	1%
Average monthly income		
Rp 3-5 million	11	8%
Rp 5-10 million	95	71%
RP 10-20 million	23	17%
> Rp 20 million	5	4%
Place of Residence		
Jakarta	20	15%
Bogor	5	4%
Depok	7	5%
Tangerang	87	65%
Bekasi	4	3%
Central Java	7	5%
East Java	2	1%
Kalimantan	2	1%

Source: Primary Data Processed (2025)

Table 4 The BNPL Usage Behavior

Characteristics	Frequency	Percentage
BNPL Providers		
Shopee PayLater	75	56%
Go Pay Later	12	9%
Indodana PayLater	1	1%
PayLater BCA	35	26%
TikTok PayLater	1	1%
Blibli PayLater	2	1%
Kredivo	3	2%
Traveloka PayLater	4	3%
Atom PayLater	1	1%

Table 4 The BNPL Usage Behavior (Continued)

Characteristics	Frequency	Percentage
BNPL Usage Duration		
Less than 1 month	1	1%
1 - 3 months	18	13%
4 - 6 months	28	21%
7 - 12 months	13	10%
More than 1 year	74	55%
Monthly BNPL Spending		
Less than Rp 100 thousand	5	4%
Rp 100 - 500 thousand	57	43%
Rp 500 thousand - 1 million	46	34%
Rp 1 - 3 million	20	15%
Rp 3 - 5 million	3	2%
More than Rp 5 million	3	2%
Preferred BNPL Installment Type		
Full payment in the following month (without installments)	57	43%
3-month installment	57	43%
6-month installment	11	8%
9-month installment	0	0%
12-month installment or longer	9	7%
Main Reason for Using BNPL		
Can buy now, pay later, without having to spend money immediately	46	34%
More flexible installments based on payment ability	15	11%
Taking advantage of available promotions and discounts	47	35%
Do not have a credit card as an alternative payment method	4	3%
Urgent needs that must be met immediately	4	3%
Postponing payment so that money can be used for other purposes	18	13%

Source: Primary Data Processed (2025)

Data are analyzed for validity, reliability, and hypothesis testing using the bootstrapping method. The measurement model validation confirms that only items with factor loadings above 0.708 are retained. According to Hair et al. (2021), factor loadings exceeding 0.708 show strong indicator reliability, while items below this threshold should be considered for removal to enhance construct validity. During the course of this research, all validity and reliability criteria are satisfied, with Average Variance Extracted (AVE) exceeding 0.5, and both Cronbach's Alpha

and Composite Reliability values exceeding 0.7. These results are consistent with the recommended thresholds for establishing internal consistency and construct reliability (see Table 5).

The discriminant validity assessment, which is based on Heterotrait-Monotrait Ratio (HTMT), shows values well below the 0.85 threshold, confirming satisfactory discriminant validity (see Table 6). Accordingly, the multicollinearity diagnostics using the Variance Inflation Factor (VIF) also produce acceptable results, with all VIF values falling below the conservative threshold of 3.3 (see Table 7).

Table 5 Validity and Reliability Test Result

Variable	Indicator	Factor Loading	AVE (>0.5)	CA (>0.7)	CR (>0.7)	Validity
Procrastination: BNPL Repayment	PPS1	0.810	0.695	0.959	0.965	Valid
	PPS2	0.844				Valid
	PPS3	0.739				Valid
	PPS4	0.913				Valid
	PPS5	0.892				Valid
	PPS6	0.849				Valid
	PPS7	0.891				Valid
	PPS8	0.709				Valid
	PPS9	0.886				Valid
	PPS10	0.738				Valid
	PPS11	0.851				Valid
	PPS12	0.852				Valid
Present Bias	PB1	1	-	-	-	Valid
Value: Reward	RR1	0.861	0.674	0.948	0.943	Valid
	RR2	0.869				Valid
	RR3	0.847				Valid
	RR4	0.853				Valid
	RR5	0.793				Valid
	RR6	0.794				Valid
	RR7	0.776				Valid
	RR8	0.766				Valid
Delay: installment period	D1	1	-	-	-	Valid

Source: Primary Data Processed (2025)

Table 6 Discriminant Validity Results

Construct Pairs	HTMT Value (<0.85)
Procrastination (BNPL Repayment) <-> Present Bias	0.466
Value (rewards) <-> Present Bias	0.192
Value (rewards) <-> Procrastination (BNPL Repayment)	0.131
Delay (installment period) <-> Present Bias	0.239
Delay (installment period) <-> Procrastination (BNPL Repayment)	0.357
Delay (installment period) <-> Value (rewards)	0.111

Source: Primary Data Processed (2025)

Table 7 Collinearity Statistics Result

Paths	VIF Value (<3.3)
Present Bias → Procrastination (BNPL Repayment)	1.404
Value (rewards) → Procrastination (BNPL Repayment)	1.248
Value (rewards) x Present Bias → Procrastination (BNPL Repayment)	1.394
Delay (installment period) → Procrastination (BNPL Repayment)	1.129

Table 7 Collinearity Statistics Result (Continued)

	VIF Value (<3.3)
Delay (installment period) x Present Bias →02 Procrastination (BNPL Repayment)	1.223

Source: Primary Data Processed (2025)

Table 8 Hypothesis Test Result

Hypothesis	Relationship	Path Coefficients	T-Value (>1.65)	P-Value (<0.05)	Description
H1	Present Bias → Procrastination (BNPL Repayment)	0.396	4.528	0	Accepted
H2	Value (reward) → Procrastination (BNPL Repayment)	0.039	0.275	0.392	Rejected
H3	Value (reward) x Present Bias → Procrastination (BNPL Repayment)	-0.082	0.795	0.213	Rejected
H4	Delay (installment period) → Procrastination (BNPL Repayment)	0.223	2.653	0.004	Accepted
H5	Delay (installment period) x Present Bias → Procrastination (BNPL Repayment)	0.075	0.814	0.208	Rejected

Source: Primary Data Processed (2025)

Regarding hypothesis testing, bootstrapping is applied to assess the path coefficients and their associated statistical significance, as shown in Table 8. The results show that present bias had a significant positive effect on BNPL repayment procrastination ($\beta = 0.396$, $p = 0.000$), thereby supporting H1. Dissimilar to this result, value (reward) is found to have an insignificant direct effect on BNPL repayment procrastination ($\beta = 0.039$, $p = 0.392$), thereby rejecting H2. The moderation analysis further shows that value (reward) does not significantly moderate the relationship between present bias and BNPL repayment procrastination ($\beta = -0.082$, $p = 0.213$), leading to the rejection of H3. This suggests that the influence of present bias on procrastination remains consistent, regardless of the level of perceived reward value.

Furthermore, the results show that delay (installment period) had a significant positive effect on BNPL repayment procrastination ($\beta = 0.223$, $p = 0.004$), supporting H4. This invariably reflects how longer installment durations are associated with a greater tendency to procrastinate. However, the moderation effect of delay on present bias is found to be statistically insignificant ($\beta = 0.075$, $p = 0.208$), leading to the rejection of H5. These results imply that regardless of how a longer delay independently contributes to repayment procrastination, it does not modify the strength or direction of the effects of present bias or perceived value.

In its entirety, the observations confirm that higher present bias significantly increased the probability of delaying BNPL repayments. The finding is consistent with prior research, showing that individuals tend to prioritize immediate consumption over future financial obligations (Barboza, 2017; Kuchler & Pagel, 2021). It also supports TMT, which posits that individuals discount future costs in favor of immediate rewards (Steel & König, 2006). The absence of immediate financial penalties in BNPL schemes further amplifies this behavior, increasing users' tendency to defer payments.

The perceived reward value does not significantly reduce procrastination in BNPL repayments. Moreover, the effects of present bias on procrastination remain consistent across different levels of perceived reward value. Contrary to the expectation, value (reward) does not have a direct effect on BNPL repayment procrastination. A possible explanation is that BNPL users may not view cashback or discounts as sufficient motivation to accelerate repayment. Instead the demographic might perceive BNPL as an extension of individual liquidity rather than a credit obligation. This interpretation is consistent with results from behavioral economics research, suggesting that individuals often undervalue delayed financial consequences compared to immediate spending benefits (Maji & Prasad, 2025).

Furthermore, the analysis reflects that the delay (installment period) has a positive effect on BNPL repayment procrastination. This supports the hypothesis that longer installment durations increase the tendency to delay repayment. The result is consistent with TMT proposed by Steel and König (2006), which posits that motivation decreases as deadlines are perceived to be farther away. A longer

installment term may create a sense of reduced urgency, thereby weakening the psychological pressure to make timely payments. Furthermore, the interaction between present bias and installment period does not significantly affect repayment procrastination. This result implies that individuals with a strong present bias, those who prioritize immediate gratification over future consequences, possess a greater tendency to procrastinate regardless of the installment duration.

Table 9 R-Square Result

	R-square	R-Square adjusted
Procrastination	0.303	0.270

Source: Primary Data Processed (2025)

Based on the results presented in Table 9, independent variables in the model explained approximately 30.3% of the variance in BNPL repayment procrastination behavior, as reflected by the obtained R-square value. This suggests that approximately one-third of the factors influencing procrastination in BNPL repayments are captured by the variables analyzed in this research. At the same time, the remaining 69.7% may be attributed to other factors not included in the model.

IV. CONCLUSIONS

In conclusion, the analysis carried out on previous results provided comprehensive answers to the research questions regarding the psychological and behavioral drivers of repayment procrastination among BNPL users. The obtained results showed that present bias significantly influenced repayment procrastination, consistent with TMT. This suggests that individuals tend to prioritize immediate gratification over future obligations, resulting in delayed repayments. Additionally, longer installment durations are found to increase procrastination tendencies, implying that the perceived temporal distance of repayment deadlines diminished the sense of urgency to fulfill payment obligations.

Contrary to expectations, the perceived value (rewards) and the interaction effects between perceived value and delay do not significantly influence repayment behavior. This result implies that procrastination among BNPL users is primarily driven by cognitive biases and time perception rather than reward-based incentives. Overall, the tendency to delay payments appeared to originate more from an avoidance of financial discomfort than from the pursuit of additional benefits.

This research contributes to the expanding body of literature on financial procrastination by examining BNPL repayment behavior in a developing-market context, specifically Indonesia. Despite the results offering meaningful insights, certain limitations remain. First, the explanatory power of the model is modest ($R^2 = 0.303$), suggesting that other psychological or contextual variables may further explain repayment behavior. Based the insights from prior behavioral finance research, factors such as financial literacy, self-control, and perceived financial stress have been identified as significant predictors of financial procrastination. Therefore, future explorations should consider adopting a mediated moderation analysis to examine whether self-control mitigates the impact of present bias on procrastination, and whether financial stress intensifies this effect.

Second, the use of single-item measures for present bias and delay (installment period) may limit the reliability and depth of construct measurement. Although prior research supports the appropriateness of single-item measures for unidimensional and concrete constructs, adopting multi-item validated scales in future research would enhance the comprehensiveness and precision of measurement. Third, the demographic scope of this study is limited to private-sector employees residing in Tangerang, and the cross-sectional design constrains the ability to make causal inferences about the observed relationships.

To address these limitations, future research are advised to explore the this research variables through more comprehensive, longitudinal, and experimental designs. Expanding the sample to include participants from diverse regions, socioeconomic backgrounds, and employment sectors would also enhance the generalizability of the results. Additionally, examining how BNPL users behave when the demographic's credit scores are at risk and testing the effectiveness of behavioral interventions, such as different reward structures or repayment nudges, could produce deeper insights with both academic and practical implications.

By addressing these behavioral patterns, BNPL providers and regulators can formulate more effective strategies to mitigate financial risk while fostering responsible financial behavior. Implementing behavior-based reminders, adaptive repayment options, and early repayment incentives, alongside regulatory measures such as mandatory financial education and enhanced consumer protection, can contribute to a more resilient and sustainable BNPL ecosystem in Indonesia.

CONFLICT OF INTEREST

The fourth author serves as an editor for this journal. However, the fourth author was not involved in any part of the editorial process for this manuscript, including the selection of reviewers, evaluation of reviewer comments, or the final publication decision. All editorial decisions were made independently by the Editor-in-Chief and other members of the editorial board to ensure the integrity and impartiality of the review process.

Author Contributions: Conceived and designed the

analysis (Designed the research model to structure the study and searched for relevant questionnaire items to ensure alignment with the research objectives and hypotheses.), L. M., and B. S. P.; Collected the data (Created questionnaire using Google Forms.), L. M.; Collected the data (Collected data by distributing Google Forms to gather responses from BNPL users), B. S. P., and J. S. S.; Performed the analysis (Conducted PLS-SEM analysis using Smart PLS software.), L. M.; Wrote the paper (Wrote the abstract, introduction, methods, results and discussions, and conclusions), L. M.; Wrote the paper (Wrote part of the introduction section, summarizing the current state of knowledge and defining the research questions), B. S. P., and J. S. S.; Other contribution (Setting references using Mendeley tool and identifying a suitable journal or platform for publishing the research), L. M.; Other contribution (Identifying a suitable journal or platform for publishing the research), B. S. P., and J. S. S.; Other contribution (Supervised the research process to ensure alignment with ethical standards and objectives, and provided constructive feedback to enhance the manuscript's clarity and coherence), M. T.

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