International Journal of Accounting and Economics Studies, 12 (7) (2025) 116-128

International Journal of Accounting and Economics Studies

Website: www.sciencepubco.com/index.php/IJAES
https://doi.org/10.14419/16b72331
Research paper

Buy Now Pay Later and Online Impulse Buying: An Empirical Study in Indonesia's Digital Economy

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Received: September 17, 2025, Accepted: October 24, 2025, Published: November 4, 2025

Abstract

The rapid expansion of Buy Now Pay Later (BNPL) services in Indonesia has reshaped consumer behavior in the digital economy. While BNPL provides convenience in online transactions, it may also intensify impulsive buying tendencies. This study examines the determinants of online impulse buying by comparing BNPL users and non-users. Six factors were analyzed: fear of missing out (FOMO), BNPL pro-motions, happiness, social influence, normative evaluation, and self-control. A quantitative approach was applied through an online survey of 303 respondents, and the data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The findings reveal that for both BNPL users and non-users, FOMO, happiness, and self-control significantly influence impulsive buying. Among BNPL users, self-control was the strongest predictor, while happiness was most influential among non-users. Normative evaluation showed a significant negative effect only for non-users, indicating that social norms remain an effective restraint in that group. In contrast, promotions and social influence were not significant for either group. These results suggest that BNPL shifts the main drivers of impulse buying from emotional triggers to self-regulation and reduces the role of normative controls. The study offers implications for policymakers, digital businesses, and consumers in promoting more responsible digital consumption.

Keywords: *Buy Now Pay Later; Digital Consumer Behavior; Digital Promotions; FOMO; Self-Control.*

1. Introduction

1.1. Background

The rapid growth of e-commerce in Indonesia has accelerated the digitalization of the financial sector, supported by technological innovations that facilitate access to various digital payment services. Technology-based payment methods such as mobile banking, electronic wallets (e-wallets), and Buy Now Pay Later (BNPL) services have become prominent solutions for consumers in conducting online transactions. Indonesia's digital payment ecosystem has expanded significantly, as reflected in the rising volume of transactions using e-wallets and app-based payment systems. According to United Overseas Bank, PwC Singapore, and the Singapore FinTech Association, Indonesia hosts the largest fintech ecosystem in Southeast Asia, with more than one-third of its population using e-wallets as their primary payment method (FinTech in ASEAN, 2024).

Payment system statistics from Bank Indonesia (2024) presented in Table 1, show that electronic money transactions increased from 15.04 billion in 2020 to 21.67 billion in 2024, while online proprietary payment channels offered by banks grew more than fourfold over the same period, from 4.96 billion to 22.00 billion transactions. Meanwhile, conventional credit card usage also grew, albeit at a slower pace, from 274.68 million transactions in 2020 to 459.98 million in 2024. This shift in consumer preferences reflects the increasing adoption of flexible digital payment methods, with BNPL emerging as one of the primary options for consumers seeking convenience in deferring payments.

Table 1: Number of Transactions by Payment Type 2020-2024

Year	Payment types (thousands) Online Payment Proprietary channel	Electronic Money	Conventional Credit card
2020	4,960,859	15,043,475	274,682
2021	7,772,507	8,264,160	281,901
2022	11,765,598	12,330,360	342,766
2023	16,044,327	20,407,738	393,620
2024	22,004,368	21,670,349	459,984

Source: Bank Indonesia (2024).

BNPL adoption provides benefits in the form of interest-free installment flexibility but also raises challenges associated with impulsive consumption. By creating the perception that financial burdens can be postponed, BNPL may encourage unplanned purchases (Juita et al.,

2024). Prior studies suggest that BNPL users are more prone to impulse buying compared to non-users, largely due to the deferred payment mechanism that fosters an illusion of financial ease. This tendency is reinforced by increasingly aggressive digital marketing strategies that stimulate unplanned spending. Furthermore, low levels of financial literacy exacerbate the risks of impulsive consumption, especially among individuals with limited knowledge of financial management (Erzincanlı et al., 2024).

Psychological factors also play a critical role in shaping digital consumption patterns. A particularly relevant construct is the Fear of Missing Out (FOMO), defined as the anxiety of losing out on opportunities or trends, which can drive individuals to make unplanned purchases (Cachón-Rodríguez et al., 2024; Djamhari et al., 2024). In e-commerce contexts, this phenomenon is amplified by marketing strategies based on urgency, such as time-limited promotions and exclusive offers, designed to exert psychological pressure on consumers to act quickly (Djamhari et al., 2024; Erzincanlı et al., 2024). Within BNPL services, FOMO can further strengthen impulsive buying tendencies, as consumers perceive fewer immediate financial constraints (Juita et al., 2024; Kumar et al., 2024). Importantly, however, impulsive consumption driven by FOMO is not limited to BNPL users; non-users may also experience similar pressures due to the pervasive influence of digital marketing strategies. Therefore, comparing impulsive buying behaviors between BNPL users and non-users becomes essential to assess whether different payment mechanisms shape consumer decision-making.

While extensive research has been conducted on impulsive buying behavior, much of the focus has remained on isolated psychological determinants or promotional stimuli. However, the rapid rise of Buy Now Pay Later (BNPL) services in emerging markets like Indonesia creates new dynamics that challenge existing theories of consumer behavior. Understanding how BNPL adoption reshapes the balance between psychological impulses and sociocultural constraints is therefore urgent, not only for advancing academic discourse but also for informing digital finance regulation and consumer protection policies.

1.2. Research gap

BNPL usage in Indonesia continues to grow rapidly. The number of PayLater financing contracts increased from 4.63 million in 2019 to 79.92 million in 2023, with an average annual growth rate of 144.35% (Yonatan, 2024). By March 2024, total outstanding PayLater receivables reached IDR 6.13 trillion, representing a year-on-year increase of 23.9%. This growth highlights BNPL's potential as a strategic tool for boosting sales and customer loyalty, while simultaneously underscoring the need to better understand the behavioral characteristics of digital consumers.

Although previous studies have examined psychological factors such as FOMO, social influence, and self-control in relation to impulse buying (Cachón-Rodríguez et al., 2024; Djamhari et al., 2024; Erzincanlı et al., 2024; Kumar et al., 2024)Limited research has explored these dynamics by comparing BNPL users and non-users. This gap calls for a deeper investigation into whether BNPL shifts the drivers of impulsive consumption and alters the role of psychological and social factors in consumer decision-making

1.3. Research objectives

Based on the identified research gap, this study aims to:

1) Analyze the influence of FOMO, promotions, happiness, social influence, normative evaluation, and self-control on online impulsive buying.
2) Compare the behavioral differences between BNPL users and non-users in Indonesia.
3) Provide insights into the implications of BNPL adoption for digital businesses, policymakers, and consumers in managing consumption in the digital economy

2. Literature Review

2.1. Online impulse buying behavior

Online impulse buying behavior refers to spontaneous, unplanned purchases made through digital platforms, triggered by visual, emotional, and situational cues (Chen & Ku, 2021; Diani et al., 2021; Kim, 2023; Mani & Tripathi, 2022; Wells et al., 2011). It is characterized by rapid decisions, limited cognitive processing, and strong psychological urges prompted by exclusive discounts, limited-time offers, and seamless payment systems (Djamhari et al., 2024; Kim, 2023). In e-commerce environments, this tendency is reinforced by easy product access, instant transactions, and flexible payment options such as Buy Now Pay Later (BNPL), which allow deferred payment and create a sense of short-term liquidity (Golalizadeh & Ranjbarian, 2023). For firms, impulsive purchases drive transaction volume, making it essential to understand how psychological and technological factors jointly shape digital consumption.

- BNPL within the Fintech Payment Landscape

BNPL represents a distinct form of short-term digital credit integrated at the point of sale, generally involving minimal credit checks and small fixed installments, structurally different from revolving credit cards or pre-funded e-wallets (CFPB, 2025; Guttman-Kenney et al., 2023; OECD, 2025). These features lower the immediate pain of paying and heighten perceived affordability, explaining why basket size and conversion rates rise when BNPL is offered compared with credit cards (Ashby, 2024; Federal Reserve Bank of Richmond, 2025). Although merchants pay higher fees to BNPL providers than to card networks, they accept them due to reliably higher conversion and average order value (Richmond Fed, 2025). In emerging markets, mobile-first adoption and thin-file consumers amplify these effects, positioning BNPL as a psychological nudge toward discretionary spending (OECD, 2025; CFPB, 2025).

- Reconciling Conflicting Evidence on Promotions and Social Influence

While prior studies highlight strong effects of promotions and social influence on online impulsive buying (Ngo et al., 2024)Our results show otherwise. Two mechanisms may explain this divergence. First, promotion fatigue: in heavily promotional marketplaces, repeated exposure to discounts and flash sales diminishes incremental persuasiveness (eMarketer, 2025; Guo et al., 2024). Second, cultural reframing: in collectivist contexts such as Indonesia, peer pressure is often internalized as normative evaluation rather than direct social influence, causing the normative path to remain significant while the social-influence path fades (see Ngo et al., 2024). Together with BNPL's liquidity illusion, these dynamics explain why internal psychological drivers (FOMO, affect, self-control) outweigh external levers in our sample.

- Implication for Theory

BNPL should thus be understood not merely as a checkout alternative but as a behavior-shaping credit innovation that redistributes the weight of internal versus external antecedents of impulsive buying. Its design fosters higher spending and alters self-regulation mechanisms more profoundly than credit cards or e-wallets. This view aligns with emerging consumer-risk reports documenting elevated spending,

loan stacking, and repayment frictions among BNPL users, underscoring the importance of integrating financial-psychology variables into models of digital impulse buying (CFPB, 2025; OECD, 2025).

2.2. Fear of missing out (FOMO)

Fear of Missing Out (FOMO) is defined as the anxiety of losing valuable opportunities or experiences enjoyed by others, motivating individuals to stay constantly connected, especially through social media (Przybylski et al., 2013). In digital consumption, FOMO drives impulsive purchases as consumers feel pressured to act quickly to avoid missing trends (Barry & Wong, 2020). Urgency-based strategies, such as flash sales and exclusive deals, amplify this tendency, particularly when integrated with BNPL services that reduce short-term financial burdens but increase impulsive behavior (Djamhari et al., 2024). Social interactions on digital platforms also intensify trend diffusion and peer comparison (Çelik et al., 2019). Hence, FOMO functions both as a psychological trigger and as a marketing mechanism that shapes impulsive buying in the digital economy.

2.3. Self-control

Self-control reflects the ability to regulate emotions and resist unplanned purchases (Hamza & Elsantil, 2023; Jain et al., 2023; Raghuvaran, 2017). Consumers with weak self-control are more prone to impulsive buying, especially when exposed to discounts, time-limited offers, or seamless payment systems (Erzincanlı et al., 2024). The ego-depletion theory posits that repeated decision-making depletes cognitive resources, reducing resistance to temptation (Baumeister et al., 2007). In digital commerce, instant access and BNPL facilities may reinforce this depletion by creating an illusion of financial flexibility (Cachón-Rodríguez et al., 2024). Low self-control has been linked to online shopping addiction, financial distress, and post-purchase regret (Erzincanlı et al., 2024; Liao et al., 2020).

2.4. BNPL promotion

Promotions stimulate purchasing by increasing perceived value and affordability (Djamhari et al., 2024; Mandolfo et al., 2022). When paired with BNPL, they heighten impulsiveness by allowing deferred payments that enhance perceived purchasing power. Both monetary (discounts, cashback) and non-monetary incentives (gifts, loyalty points) have been shown to influence unplanned buying (Liao et al., 2020). Urgency- and scarcity-driven campaigns, such as flash sales and exclusive deals, trigger FOMO and accelerate purchase decisions (Djamhari et al., 2024). Through BNPL, promotions effectively lower immediate financial barriers, reinforcing spontaneous consumption behavior

2.5. Social influence

Social influence shapes impulse buying through interactions in online communities and social commerce platforms (Djamhari et al., 2024). Peer recommendations, reviews, and testimonials generate trust and perceived social proof (Abdelsalam et al., 2019; Farivar & Yuan, 2017; Hu et al., 2019; Kim, 2023; Thi Phan et al., 2020; Xi et al., 2016). Consumers sensitive to social cues tend to purchase impulsively to maintain belonging and align with group norms. As BNPL expands accessibility, purchasing power becomes a signal of participation in shared consumption trends. Consequently, user-generated endorsements and community marketing enhance both trust and impulsive buying intentions.

2.6. Normative evaluation

Normative evaluation refers to how individuals assess their purchases against prevailing social norms (Lee et al., 2023; Lee & Gan, 2025; Li & Liang, 2010). It determines whether impulsive acts are viewed as acceptable or deviant. Consumers high in impulsivity often rationalize unplanned spending, while those with stronger self-control perceive it as irrational (Liu et al., 2013; Rook & Fisher, 1995). In digital contexts, marketing tactics such as exclusive offers can blur moral boundaries by framing impulsive purchases as justified opportunities (Kim, 2023). Understanding this process helps explain how consumers reconcile impulsive buying with collective social expectations.

2.7. Happiness

Happiness represents the emotional gratification derived from spontaneous purchases (Kim, 2023). It serves both as a driver and regulator of impulsive buying, where consumers seek to sustain positive moods or alleviate stress through shopping (Cachón-Rodríguez et al., 2024; Juita et al., 2024). Positive experiences in digital environments, smooth navigation, discounts, and visually appealing content further strengthen this emotional connection (Djamhari et al., 2024). Consequently, happiness transforms online shopping into an affective experience that increases the likelihood of unplanned buying.

3. Research Methodology

3.1. Research design

This study adopts a quantitative research design with a survey method to collect primary data. The analytical model employed is Structural Equation Modeling–Partial Least Squares (SEM-PLS), which was chosen due to its capability to handle complex models with multiple latent variables and relatively small to medium sample sizes (Hair et al., 2019; Henseler et al., 2009; Sarstedt et al., 2017; Shmueli et al., 2016). SEM-PLS is particularly suitable for exploratory research and predictive analysis, aligning with the objectives of this study.

3.2. Population and sample

The population of this study consists of Indonesian digital consumers who actively make online purchases through e-commerce platforms and social media. A purposive sampling method was applied to ensure the respondents met the following criteria:

1) Aged 18 years or older and actively engaged in online shopping.

2) Having experience using BNPL services or exposure to BNPL promotions in online transactions.
3) Having made purchases through digital platforms within the last six months.

A total of 303 valid responses were collected and further analyzed. This sample size is considered adequate for SEM-PLS analysis, as it exceeds the minimum threshold recommended in prior methodological studies (Hair et al., 2019).

3.4. Variables and operational definitions

The study investigates the relationship between online impulsive buying behavior as the dependent variable and six independent variables: Fear of Missing Out (FOMO), Self-Control, BNPL Promotion, Social Influence, Normative Evaluation, and Happiness. Each construct was defined based on prior literature and measured using multiple indicators adapted from validated scales. Table 2 presents the operational definitions of all variables.

Table 2: Variables and Operational Definitions

Variable	Code	Operational Definition	Source
Online Impulsive Buying Behavior	IBB	The tendency of individuals to make spontaneous and unplanned purchases on digital platforms.	(Djamhari et al., 2024; Juita et al., 2024; Kim, 2023)
Fear of Missing Out (FOMO)	FOMO	Anxiety arising from the fear of losing opportunities or trends, which drives impulsive consumption.	(Hussain et al., 2023; Przybylski et al., 2013)
Self-Control	SC	The individual's ability to regulate impulses and evaluate purchases rationally.	(Cachón-Rodríguez et al., 2024; Erzincanlı et al., 2024; Juita et al., 2024)
BNPL Promotion	P	The influence of BNPL-related promotions in increasing consumer interest, particularly in impulsive purchases.	(Djamhari et al., 2024; Juita et al., 2024; Mandolfo et al., 2022)
Social Influence	SI	The impact of social interactions on impulsive buying decisions in digital ecosystems.	(Djamhari et al., 2024; Juita et al., 2024; Kim, 2023)
Normative Evaluation	NE	The cognitive process by which individuals assess their impulsive purchases against prevailing social norms.	(Juita et al., 2024; Kim, 2023; Liu et al., 2013)
Happiness	H	The sense of satisfaction and pleasure derived from making impulsive purchases	(Cachón-Rodríguez et al., 2024; Juita et al., 2024)

3.5. Research framework

The research framework illustrates the hypothesized relationships between independent variables (FOMO, Self-Control, BNPL Promotion, Social Influence, Normative Evaluation, and Happiness) and the dependent variable (Online Impulsive Buying Behavior) (Figure 1).

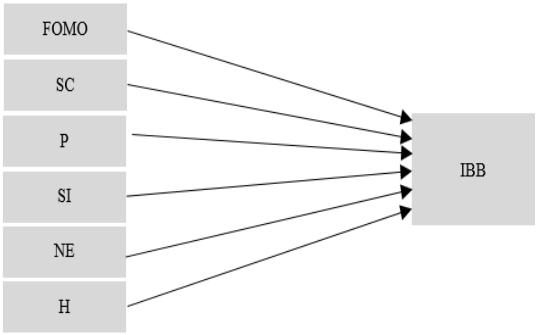

Fig. 1: Research Framework.

3.6. Research framework

Data were collected through an online survey distributed to respondents across various regions in Indonesia. The questionnaire was structured into three sections: (1) demographic information, (2) BNPL usage behavior, and (3) measurement items for each construct based on established scales. A five-point Likert scale was employed, ranging from 1 ("strongly disagree") to 5 ("strongly agree").

Data analysis was conducted using SEM-PLS with the SmartPLS software. This approach allowed the evaluation of both the measurement model (validity and reliability of constructs) and the structural model (testing of hypothesized relationships). Statistical tests included factor loadings, Cronbach's alpha, composite reliability, average variance extracted (AVE), R^2 values, path coefficients, and significance testing using bootstrapping procedures.

4. Results and Discussion

4.1. Descriptive data analysis

The data were obtained from a total of 303 respondents who completed the online survey distributed via Google Form. To ensure data quality, all questions were mandatory, thereby eliminating the possibility of missing values. Table 3 summarizes the demographic profile of respondents across various categories, including gender, marital status, age, education, occupation, income, expenditure patterns, online shopping frequency, platforms used, and BNPL usage status. From the table provided, it can be concluded that the provinces with the largest number of respondents were West Java (52.8%) and Jakarta (30.7%). Respondents in West Java were predominantly located in suburban areas close to Jakarta, namely Bogor, Bekasi, and Depok.

Table 3: Respondents' Profile

Category	Total	Percentage (%)
Gender		

Male	72	23,8%
Female	231	76,2%
Total	303	100,0%
Marital Status		
Married	144	47,5%
Unmarried	159	52,5%
Total	303	100,0%
Age		
18-27	110	36,3%
28-43	189	62,4%
44-59	4	1,3%
Total	303	100,0%
Province		
West Java	160	52,8%
DKI Jakarta	93	30,7%
Banten	21	6,9%
East Java	4	1,3%
DI Yogyakarta	3	1,0%
Central Java	3	1,0%
North Sumatera	3	1,0%
Bali	2	0,7%
East Kalimantan	2	0,7%
South Sumatera	2	0,7%
Bengkulu	1	0,3%
Jambi	1	0,3%
West Kalimantan	1	0,3%
South Kalimantan	1	0,3%
Riau Islands	1	0,3%
East Nusa Tenggara	1	0,3%
West Papua	1	0,3%
South Sulawesi	1	0,3%
Central Sulawesi	1	0,3%
South-East Sulawesi	1	0,3%
Total	303	100,0%
Last Education		
Until Senior High School	58	19,1%
Diploma I-III	21	6,9%
Bachelor/Diploma IV	180	59,4%
Post Graduate	44	14,5%
Total	303	100,0%
Job Status		
University Students	82	27,1%
Formal Workers	174	57,4%
Informal Workers	15	5,0%
Not Working	18	5,9%
Entrepreneurs	14	4,6%
Total	303	100,0%
Monthly Income (IDR)		
<1.000.000	31	10,2%
1.000.001 – 2.500.000	58	19,1%
2.500.001 – 5.000.000	37	12,2%
5.000.001 – 7.500.000	61	20,1%
7.500.001 – 10.000.000	53	17,5%
>10.000.000	63	20,8%
Total	303	100,0%
Average monthly expenditure for online shopping in relation to monthly income (IDR)		
< 500.000	124	40,9%
500.001 – 1.000.000	96	31,7%
1.000.001 – 2.500.000	54	17,8%
2.500.001 – 5.000.000	24	7,9%
> 5.000.000	5	1,7%
Total	303	100,0%
Frequency of online shopping		
< 1 in a month	31	10,2%
1–2 in a month	156	51,5%
1–2 in a week	83	27,4%
3–4 in a week	30	9,9%
Almost every day	3	1,0%
Total	303	100,0%
Number of platforms used for online shopping		
1 platform	72	23,8%
2 platforms	89	29,4%
3 platforms	62	20,5%
>3 platforms	80	26,4%
Total	303	100,0%

Table 4: Respondents Profile (Continued)

Category	Total	Percentage (%)
Brand platform for online shopping (multiple responses)		

Category	Total	Percentage (%)
Shopee	83	27,4%
Tokopedia	54	17,8%
Traveloka	40	13,2%
Alfagift	34	11,2%
Tiket.com	32	10,6%
Astro	21	6,9%
Indomaret Klik	21	6,9%
Zalora	19	6,3%
Lazada	16	5,3%
Blibli	13	4,3%
Bukalapak	3	1,0%
Lainnya	23	7,6%
Paylater user status		
Non Paylater user	233	76,9%
Paylater user	70	23,1%
Total	303	100,0%

The descriptive analysis reveals several dominant patterns. Most respondents were female (76.2%) and aged 28–43 (62.4%), representing the millennial cohort known for high digital literacy and openness to financial innovations such as BNPL. This aligns with prior findings suggesting that women often engage in online shopping as a form of emotional regulation and hedonic fulfillment (Dittmar et al., 2004). The majority held at least a bachelor's degree (59.4%), and over half were formally employed (57.4%), reflecting a financially active and educated demographic that is both digitally connected and responsive to online marketing stimuli.

In terms of income, about 58% of respondents earned more than IDR 5 million monthly, while nearly one-third (≈29%) earned less than IDR 2.5 million. This distribution indicates that BNPL adoption potential spans across income levels, appealing both to mid-income earners seeking flexibility and lower-income users seeking accessibility. Shopping behavior data further support this trend: over half of respondents (51.5%) shopped one to two times per month, and 40.9% spent less than IDR 500,000 monthly, suggesting moderate and controlled spending habits.

Multichannel behavior was evident; most respondents used two or more online platforms (76.3%), with Shopee (27.4%), Tokopedia (17.8%), and Traveloka (13.2%) being the most preferred. Despite BNPL's growing visibility, only 23.1% of respondents reported active usage. This modest adoption rate suggests that BNPL is still in its early diffusion stage in Indonesia, constrained by financial literacy gaps and cautious risk perceptions. Overall, the descriptive results indicate that online impulsive buying behavior is concentrated among young, educated, and financially aware consumers who engage moderately in digital commerce yet remain selective in adopting new credit-based payment solutions.

4.2. Determinants of online impulse buying among BNPL users

The SEM analysis for the BNPL user group demonstrated a high explanatory power. As shown in Table 4, the R^2 value for impulsive buying behavior (IBB) reached 0.715, which falls into the substantive category. This indicates that the six constructs: FOMO, happiness, self-control, normative evaluation, promotion, and social influence collectively explained more than 70% of the variance in impulsive buying behavior, highlighting the robustness of the model in predicting consumer behavior in the context of BNPL adoption.

Table 5: R-Square of BNPL Users

Endogenous Variable	R^2	Category
Impulse Buying Behavior (IBB)	0.715	Substantive

From the perspective of effect sizes (Table 5), self-control ($F^2 = 0.263$) emerged as the most influential determinant, followed by FOMO ($F^2 = 0.150$) and happiness ($F^2 = 0.145$). This suggests that weakened self-regulation, fear of missing out, and the pursuit of emotional gratification are the most powerful drivers of impulsive buying among BNPL users. By contrast, the effect sizes of normative evaluation, promotion, and social influence were negligible.

Table 6: Effect Sizes (F^2) of BNPL Users

Construct	F^2
Self-Control	0.263
FOMO	0.150
Happiness	0.145
Normative Evaluation	0.005
Promotion	0.001
Social Influence	0.005

The path coefficient analysis (Table 6) further confirms these findings. FOMO ($\beta = 0.352$; $p = 0.003$), happiness ($\beta = 0.279$; $p = 0.003$), and self-control ($\beta = 0.375$; $p = 0.000$) had significant positive effects on impulsive buying behavior. On the other hand, normative evaluation ($\beta = 0.048$; $p = 0.522$), promotion ($\beta = -0.019$; $p = 0.828$), and social influence ($\beta = -0.055$; $p = 0.575$) did not exhibit significant relationships with impulsive buying behavior.

Table 7: Path Coefficients of BNPL Users

Construct → IBB	Beta (β)	p-value
FOMO	0.352	0.003
Happiness	0.279	0.003
Self-Control	0.375	0.000
Normative Evaluation	0.048	0.522
Promotion	-0.019	0.828
Social Influence	-0.055	0.575

The reliability and validity analysis (Table 7) confirmed that all constructs met the minimum requirements: Cronbach's alpha values exceeded 0.7, composite reliability surpassed 0.8, and the average variance extracted (AVE) was above 0.5. FOMO achieved the highest AVE (0.666) and composite reliability (0.947), indicating strong measurement consistency. Promotion, while still valid, demonstrated the lowest AVE (0.504).

Table 8: Reliability and Validity of BNPL Users

Construct	Cronbach's Alpha	Composite Reliability	AVE
FOMO	0.936	0.947	0.666
Happiness	0.837	0.871	0.530
Self-Control	0.828	0.897	0.745
Impulse Buying Behavior	0.828	0.874	0.540
Normative Evaluation	0.821	0.918	0.848
Promotion	0.703	0.801	0.504
Social Influence	0.864	0.894	0.588

As shown in Figure 2, the structural model confirms the significant paths from FOMO, happiness, and self-control toward impulsive buying behavior, with path coefficients ranging between 0.279 and 0.375. Meanwhile, paths from promotion, social influence, and normative evaluation were statistically insignificant, reinforcing the conclusion that BNPL shifts the drivers of impulsive consumption toward internal psychological impulses rather than external triggers.

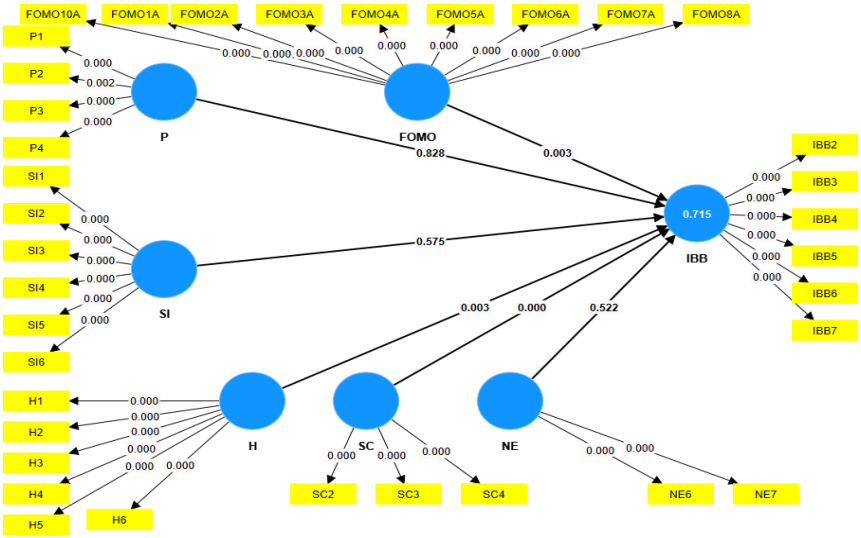

Fig. 2: Final SEM Model for BNPL Users.

The findings underscore the dominance of internal psychological factors over external influences in driving impulsive behavior among BNPL users. Self-control emerged as the strongest determinant, consistent with ego-depletion theory (Baumeister et al., 2007), which posits that limited self-regulatory resources increase susceptibility to impulsive consumption. In the context of BNPL, weakened self-control is further aggravated by the deferred payment mechanism, which creates an illusion of liquidity (Juita et al., 2024).

The significant role of FOMO demonstrates that digital consumers are particularly vulnerable to time-limited promotions and trends. This aligns with Djamhari et al. (2024), who emphasize FOMO as a key psychological mechanism in digital consumption, and Erzincanlı et al. (2024), who note that BNPL weakens short-term financial considerations, making consumers more prone to impulsive behavior.

Happiness also showed a significant effect, suggesting that impulsive purchases serve as an emotional outlet and a source of instant gratification. This finding resonates with (Dittmar et al., 2004), who observed that women often use shopping as an emotional regulation strategy. Considering that most respondents in this study were women aged 28–43, this result highlights the emotional dimension of BNPL-driven impulsive behavior.

Conversely, external factors such as promotion, social influence, and normative evaluation were not significant. This result diverges from earlier findings (Golalizadeh & Ranjbarian, 2023; Rook & Fisher, 1995), which emphasized the role of social norms and promotional strategies in stimulating impulsive consumption. The insignificance of these external variables suggests that for BNPL users, internal psychological mechanisms overshadow external marketing stimuli in shaping consumption decisions.

4.8. Determinants of online impulse buying among non-BNPL users

The SEM analysis for non-BNPL users revealed a moderate explanatory power. As shown in Table 8, the R^2 value for impulsive buying behavior (IBB) was 0.452, indicating that the six constructs, FOMO, happiness, self-control, normative evaluation, promotion, and social influence, explained approximately 45% of the variance in online impulsive buying behavior.

Table 9: R-Square of Non-BNPL Users

Endogenous Variable	R^2	Category
Impulse Buying Behavior (IBB)	0.452	Moderate

The effect size analysis (Table 9) showed that happiness ($F^2 = 0.168$) was the strongest determinant, followed by self-control ($F^2 = 0.126$) and FOMO ($F^2 = 0.082$). Normative evaluation also demonstrated a modest effect ($F^2 = 0.070$), while promotion and social influence had negligible effects.

Table 10: Effect Sizes (F^2) of Non-BNPL Users

Construct	F^2
Happiness	0.168
Self-Control	0.126
FOMO	0.082
Normative Evaluation	0.070
Promotion	0.014
Social Influence	0.001

The path coefficient results (Table 10) confirmed that FOMO (β = 0.368; p = 0.000), happiness (β = 0.340; p = 0.000), and self-control (β = 0.299; p = 0.000) had significant positive effects on impulsive buying behavior. Interestingly, normative evaluation (β = -0.199; p = 0.001) showed a significant negative effect, functioning as a psychological restraint. In contrast, promotion (β = -0.175; p = 0.108) and social influence (β = -0.046; p = 0.666) were not significant.

Table 11: Path Coefficients of Non-BNPL Users

Construct → IBB	Beta (β)	p-value
FOMO	0.368	0.000
Happiness	0.340	0.000
Self-Control	0.299	0.000
Normative Evaluation	-0.199	0.001
Promotion	-0.175	0.108
Social Influence	-0.046	0.666

The reliability and validity assessment (Table 11) confirmed that all constructs satisfied the required thresholds: Cronbach's alpha values exceeded 0.7, composite reliability was greater than 0.8, and AVE surpassed 0.5. Promotion achieved the highest composite reliability (0.961) and AVE (0.859), despite being statistically insignificant in the structural model.

Table 12: Reliability and Validity of Non-BNPL Users

Construct	Cronbach's Alpha	Composite Reliability	AVE
FOMO	0.964	0.969	0.777
Happiness	0.880	0.906	0.616
Self-Control	0.836	0.901	0.753
Impulse Buying Behavior	0.813	0.870	0.572
Normative Evaluation	0.854	0.896	0.632
Promotion	0.946	0.961	0.859
Social Influence	0.906	0.928	0.684

As illustrated in Figure 3, the structural model confirms that happiness, FOMO, and self-control significantly increase impulsive buying behavior, while normative evaluation significantly reduces it. Promotion and social influence, however, do not exert meaningful effects.

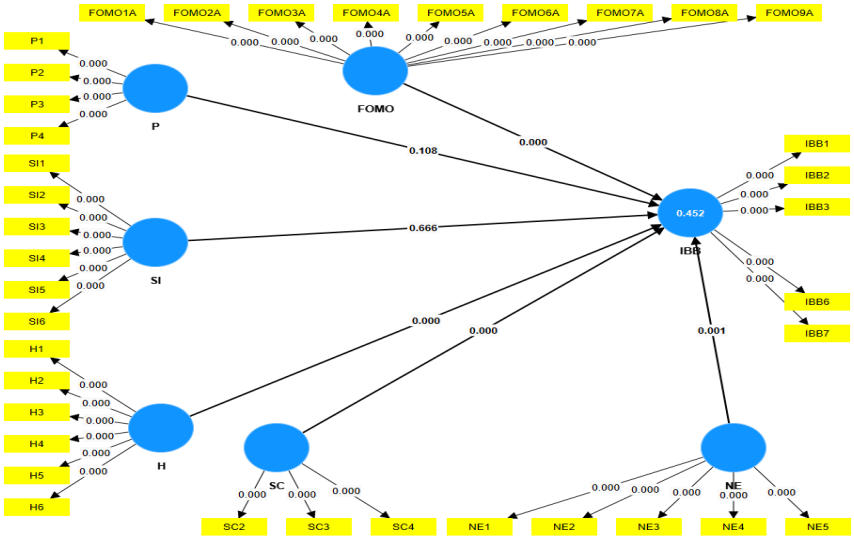

Fig. 3: Final SEM Model for Non-BNPL Users.

The results highlight the dominance of internal psychological factors in explaining impulsive behavior among non-BNPL users. Happiness emerged as the most influential determinant, confirming that impulsive purchases are often perceived as a means of achieving emotional gratification and mood enhancement. This aligns with Kim (2023), who emphasizes the mediating role of positive emotions in driving spontaneous digital consumption.

Self-control also had a significant effect, reinforcing the relevance of ego-depletion theory (Baumeister et al., 2007). Lower levels of self-control make individuals more vulnerable to unplanned spending. Similarly, Erzincanlı et al. (2024) demonstrated that weak self-regulation increases the risk of online shopping addiction and financial stress.

The significant role of FOMO indicates that the fear of missing out on trends and opportunities continues to be a key driver of impulsive consumption among non-users. This is consistent with Hussain et al. (2023), who showed that FOMO is strongly associated with digital purchasing behavior, particularly in environments where consumers are exposed to time-sensitive promotions and real-time social updates.

Interestingly, normative evaluation played a significant negative role, functioning as a "social brake" that restrains impulsive buying. This finding resonates with Rook & Fisher (1995), who argued that social norms can filter impulsive tendencies to ensure alignment with cultural

values and expectations. The presence of this moderate mechanism suggests that non-users still consider social norms and moral standards when making purchasing decisions.

In contrast, promotion and social influence were found to be insignificant. This result is consistent with Mandolfo et al. (2022), who observed that the effectiveness of digital promotions diminishes when consumers adopt more cautious attitudes. Similarly, (Hu et al., 2019) argued that social influence in online commerce is often limited when individual preferences override peer pressure. The insignificance of promotion and social influence diverges from several earlier findings but can be explained by contextual saturation and cultural dynamics. In Indonesia's digital marketplace, consumers are constantly exposed to overlapping discounts and flash sales, which may have reduced the novelty and persuasive power of promotions. This aligns with the concept of "promotion fatigue", wherein excessive marketing stimuli lose marginal impact on decision-making (Hu et al., 2019; Kim, 2023). Moreover, in collectivist cultures like Indonesia, social influence may operate more subtly through normative evaluation than through direct peer persuasion. Thus, while explicit social influence is statistically insignificant, its effects may be indirectly absorbed into consumers' moral and normative considerations when deciding to buy or defer purchases.

In summary, impulsive buying among non-BNPL users is primarily driven by emotional gratification, weakened self-control, and FOMO, with normative evaluation acting as a counterbalancing restraint. External factors such as promotions and social influence are not decisive, highlighting that consumption decisions in this group are shaped more by internal psychological mechanisms moderated by social norms rather than external stimuli.

4.9. Comparative analysis: BNPL users vs. non-users

The findings reveal both convergences and divergences between BNPL users and non-users in terms of online impulsive buying behavior. In both groups, internal psychological factors, FOMO, happiness, and self-control were found to be significant predictors, underscoring the central role of individual psychological mechanisms rather than external stimuli. However, the specific patterns of influence differed across the two groups.

For BNPL users, self-control emerged as the most dominant factor. Low levels of self-regulation made consumers more permissive toward spontaneous buying impulses, particularly when supported by BNPL facilities that created a perception of pseudo-liquidity. This is consistent with ego-depletion theory (Baumeister et al., 2007) and Erzincanlı et al. (2024), who argue that diminished self-control increases vulnerability to excessive consumption. Additionally, FOMO significantly influenced behavior, suggesting that BNPL users are highly susceptible to fears of missing out on promotional opportunities. Happiness also contributed positively, implying that impulsive purchases were perceived as a source of short-term emotional gratification. By contrast, external factors such as promotion, social influence, and normative evaluation were not significant, indicating that the availability of BNPL weakens the role of social norms and external stimuli in constraining impulsive behavior.

For non-BNPL users, the results were somewhat different. Happiness was the strongest determinant, followed by self-control and FOMO. This suggests that impulsive purchases were more affect-driven, functioning to regulate mood rather than simply resulting from diminished self-control. Notably, normative evaluation had a significant negative effect, serving as a social brake on impulsive tendencies. This finding is consistent with Rook and Fisher (1995), who emphasized that social norms act as filters to ensure consumption behavior remains aligned with cultural expectations. As with BNPL users, promotion and social influence were not significant, reinforcing the argument that digital consumers are primarily driven by internal psychological states rather than external marketing triggers.

Differences also emerged in the explanatory power of the models (R^2). For BNPL users, the model explained 71.5% of the variance in impulsive buying (substantive), while for non-BNPL users it explained only 45.2% (moderate). This suggests that impulsive buying behavior among BNPL users is more strongly tied to the psychological constructs examined, whereas non-users may also be influenced by other unobserved variables, such as financial literacy, risk preferences, or BNPL accessibility constraints.

Effect size comparisons further underscore this distinction. Among BNPL users, self-control ($F^2 = 0.263$) was the largest predictor, whereas among non-users, happiness ($F^2 = 0.168$) was most dominant. This indicates that BNPL shifts the "center of gravity" of impulsive behavior from affective factors (emotions) to regulatory factors (self-control).

Table 13: Reliability and Validity of Non-BNPL Users

Analytical Aspect	BNPL Users	Non-BNPL Users
Significant Determinants (Path Coefficients)	FOMO (+), Happiness (+), Self-Control (+)	FOMO (+), Happiness (+), Self-Control (+), Normative Evaluation (–)
Non-Significant Factors	Promotion, Social Influence, Normative Evaluation	Promotion, Social Influence
R-Square (IBB)	0.715 (Substantive)	0.452 (Moderate)
Largest Effect Size (F^2)	Self-Control (0.263), FOMO (0.150), Happiness (0.145)	Happiness (0.168), Self-Control (0.126), FOMO (0.082), NE (0.070)
Normative Role	Weak (not significant)	Weak, insignificant
Role of External Factors	Weak, insignificant	Weak, insignificant
Dominant Demographics	Female (78,6%), age 28–43 (74,3%), formal workers (61,4%), bachelor's degree (72,9%), income ≥ IDR 7,5 million (47,1%)	Female (75,5%), age 28–43 (58,8%), formal workers (56,2%) + students (30,5%), bachelor's degree (55,4%), more diverse income distribution with the most dominant income IDR 2,5-5 million (21%
Online Shopping Pattern	More frequent, 34,3% shop 1–2 times/week, higher monthly spending (≥ IDR 500k: 70,0%), use multiple platforms	More selective, 52,8% shop 1–2 times/month and 25,32% 1-2 times/week, lower monthly spending (< IDR 500k: 44,2%), platform usage is more moderate

Overall, the comparative analysis reveals both convergence and divergence between BNPL users and non-users. In terms of convergence, both groups are significantly influenced by FOMO, happiness, and self-control, confirming that internal psychological mechanisms remain the primary drivers of online impulsive buying. Divergence, however, emerges in three crucial aspects. First, self-control deficits are the strongest determinant among BNPL users, while happiness exerts the most dominant effect among non-users, suggesting that BNPL adoption shifts the locus of impulsiveness from affective triggers toward weakened self-regulation. Second, normative evaluation has no significant role for BNPL users but functions as a strong negative predictor for non-users, highlighting that social norms still serve as an effective restraint when BNPL facilities are absent. Third, the explanatory power differs markedly: the model explains 71.5% of impulsive behavior for BNPL users (substantive) but only 45.2% for non-users (moderate), indicating that impulsiveness among BNPL users is more tightly anchored to the examined psychological constructs.

These differences are partly explained by demographic and behavioral characteristics. BNPL users are predominantly female (78.6%), aged 28–43 (74.3%), formally employed (61.4%), and bachelor's degree holders (72.9%), with nearly half reporting monthly incomes above IDR 7.5 million. Their consumption patterns also show higher frequency, with 34.3% shopping one to two times per week and 70% spending more than IDR 500,000 per month. This profile suggests that BNPL adoption is more attractive to middle- and high-income consumers who leverage financial flexibility despite weaker self-regulation. Conversely, non-BNPL users, while also dominated by women (75.5%) and aged 28–43 (58.8%), present a more diverse income distribution and include a significant proportion of students (30.5%). Their shopping behavior is more cautious, with 52.8% shopping only one to two times per month and 44.2% spending less than IDR 500,000 monthly, reflecting stronger normative considerations and more selective financial practices.

In essence, these comparative findings underscore how BNPL adoption is not only a financial innovation but also a behavioral catalyst that reshapes consumer decision-making in Indonesia's digital economy. By shifting the drivers of impulsive buying from normative and affective considerations toward weakened self-regulation, BNPL highlights both opportunities for market expansion and risks of unsustainable consumption. This duality reinforces the urgency for a balanced perspective in understanding digital financial services, one that accounts for both psychological dynamics and sociocultural constraints, thereby setting the stage for the conclusions of this study.

4.10. Theoretical and Practical Implications

Theoretical Implications

1) The Role of Normative Influence in Digital Consumption

This study confirms that normative evaluation plays a significant restraining role only among non-BNPL users, consistent with Rook and Fisher's (1995) argument that social norms regulate impulsive tendencies. However, for BNPL users, this normative mechanism weakens due to installment facilities that create a sense of liquidity and reduce the salience of social approval (Juita et al., 2024). Theoretically, this suggests that digital financial innovations alter the balance between sociocultural constraints and individual-level psychological impulses, reshaping consumer decision-making in online environments.

2) Integrating Financial Psychology into Consumer Behavior Research

The stronger explanatory power among BNPL users ($R^2 = 0.715$) compared to non-users ($R^2 = 0.452$) highlights the importance of incorporating financial psychology variables such as financial literacy, risk tolerance, and debt management attitudes (Erzincanlı et al., 2024). These factors may explain why BNPL users exhibit greater permissiveness, while non-users remain norm sensitive. Such integration enriches existing models of consumer behavior by bridging psychological and financial perspectives.

Practical Implications

1) For Regulators and Policymakers

The findings underline the urgency of financial literacy and consumer protection programs. Policies should address not only debt accumulation risks but also the psychological vulnerabilities of the dominant demographic (women aged 28–43) by targeting FOMO-driven behavior and strengthening self-control.

2) For BNPL Companies

Since promotions were insignificant predictors, reliance on discounts alone is not sufficient. Providers should emphasize responsible product design by incorporating spending alerts, personalized usage feedback, or self-imposed credit limits. This dual approach, enhancing user experience while mitigating financial risks, can balance profitability with consumer welfare.

3) For Consumers

Awareness of psychological triggers is essential. Women in the productive age segment, who dominate BNPL usage, should recognize that happiness and FOMO drive much of their impulsive consumption. Practical steps such as limiting BNPL transactions or applying personal financial rules could reduce vulnerability and promote sustainable consumption habits.

4.11. Future research directions

The findings of this study open several avenues for further research, particularly given the dynamic nature of digital consumption and the emerging role of BNPL services in Indonesia's financial ecosystem.

1) Integration of Financial Psychology into Consumer Behavior Models

The moderate explanatory power of the model for non-BNPL users ($R^2 = 0.452$) suggests that additional variables may play a significant role in shaping impulsive buying. Future research should integrate aspects of financial literacy, risk perception, locus of control, and debt management behavior to better capture the mechanisms that regulate impulsive consumption (Lusardi & Mitchell, 2014).

2) Multi-Group Analysis Based on Demographics

The current sample was dominated by women (76.2%) aged 28–43 years (62.4%). Future studies could employ multi-group analysis (MGA) to examine whether the determinants of impulsive buying differ across gender, age groups, educational attainment, or employment status. Such analysis would expand on the findings of Dittmar et al. (2004), who documented differences in impulsive buying motivations between men and women.

3) Product Contexts and Consumption Categories

This study focused on online impulsive buying in general. Future research should investigate whether determinants vary across product categories, such as fashion, electronics, food and beverages, or travel services, as each category involves distinct levels of hedonism, utility, and risk (Golalizadeh & Ranjbarian, 2023). Such differentiation may reveal more nuanced insights into impulsive buying behavior.

4) Cultural and Normative Roles

The significant negative effect of normative evaluation among non-BNPL users highlights the importance of exploring cross-cultural differences. Future studies could examine whether normative influences differ between collectivist societies (e.g., Indonesia) and individualist societies (e.g., Western countries). This approach would strengthen the theoretical understanding of the sociocultural dimensions of consumer restraint (Hofstede, 2001).

5) Longitudinal Research on BNPL Users

As BNPL adoption is still relatively new in Indonesia, longitudinal studies are needed to assess the long-term impact of BNPL usage on consumption patterns, financial well-being, and mental health. Such findings would provide valuable insights for policymakers in designing appropriate regulatory frameworks for the BNPL industry.

6) Experimental Interventions on Self-Control

Given that self-control emerged as the strongest predictor of impulsive buying among BNPL users, future research should explore experimental interventions. Potential approaches include testing the effectiveness of mindfulness training, financial coaching, or digital spending

reminders in reducing impulsive consumption. Such research would have direct implications for regulators and BNPL providers aiming to promote responsible consumer behavior.
Future studies should extend this framework by exploring cross-cultural comparisons between collectivist and individualist societies to examine how cultural norms moderate the psychological drivers of impulsive buying. Incorporating product-type segmentation and financial literacy variables may also deepen insights into consumers' self-control dynamics. Longitudinal or experimental designs could further uncover how repeated BNPL exposure shapes financial discipline and post-purchase satisfaction over time.

5. Conclusion

This study investigated the determinants of online impulsive buying behavior in the context of Indonesia's digital consumer market, with a specific comparison between BNPL users and non-BNPL users. Drawing on six key constructs: FOMO, happiness, self-control, normative evaluation, promotion, and social influence, the research employed a quantitative survey of 303 respondents and analyzed the data using SEM-PLS.
The findings reveal that internal psychological factors play the most significant role in shaping impulsive buying for both BNPL users and non-users. Specifically, FOMO, happiness, and self-control emerged as consistent determinants across both groups. However, notable differences were identified. For BNPL users, self-control was the strongest predictor, confirming the vulnerability of consumers with weaker regulatory mechanisms when financial tools such as BNPL create an illusion of liquidity. In contrast, for non-BNPL users, happiness was the most dominant determinant, highlighting the role of affective states in driving impulsive purchases. Furthermore, normative evaluation exerted a significant negative effect only among non-users, suggesting that social norms remain effective in constraining impulsive behavior in the absence of BNPL adoption.
The comparative analysis underscores that BNPL not only amplifies impulsive tendencies but also weakens the moderating role of social norms, thereby shifting the "center of gravity" of consumption behavior from affect-driven impulses to self-control mechanisms. This finding has both theoretical and practical implications for understanding consumer behavior in the digital economy.
From a theoretical perspective, the study contributes to the literature by demonstrating how digital financial instruments alter the interplay between psychological drivers and sociocultural constraints in consumption. Practically, the results emphasize the need for regulatory frameworks, consumer education, and responsible BNPL practices to ensure that convenience does not come at the cost of financial vulnerability.
The novelty of this study lies in its comparative framework, which simultaneously investigates BNPL users and non-users within a unified model of impulsive buying. By revealing how BNPL weakens normative constraints and amplifies psychological impulses such as self-control deficits and FOMO, this research advances theoretical understanding of fintech-enabled consumption. It also provides timely implications for financial governance and consumer protection, particularly in emerging digital economies where BNPL adoption continues to accelerate.
Finally, this study opens several directions for future research. Scholars should consider integrating financial psychology variables (e.g., financial literacy, risk perception, debt management behavior), conducting multi-group demographic analyses, and exploring the role of product categories and cultural contexts. In addition, longitudinal research on BNPL users and experimental interventions targeting self-control would provide deeper insights into both the short- and long-term dynamics of impulsive digital consumption.
In conclusion, while BNPL offers flexibility and convenience to digital consumers, it also reconfigures the drivers of impulsive buying behavior. A balanced approach that combines consumer empowerment, corporate responsibility, and regulatory oversight is essential to fostering sustainable and responsible digital consumption in Indonesia's rapidly evolving economy.

6. Research Limitations

This study is subject to several limitations that should be acknowledged. First, the cross-sectional design captures consumer behavior at a single point in time, limiting the ability to infer causal relationships or observe dynamic changes in impulsive buying over the long term.
Second, the sample composition was dominated by women aged 28–43 years, mostly with formal employment and a bachelor's degree, meaning that the findings are more representative of this demographic segment and may not fully capture the diversity of behaviors across men, older generations, or respondents with different educational and occupational backgrounds.
Third, the study only included six primary constructs (FOMO, happiness, self-control, normative evaluation, promotion, and social influence), while other potentially influential variables such as financial literacy, risk preferences, consumer lifestyle, and locus of control were not incorporated.
Fourth, the study did not differentiate between hedonic and utilitarian product categories, which may exhibit distinct impulsive patterns. Hedonic products such as fashion and cosmetics often elicit emotion-driven spontaneity, whereas utilitarian purchases, like groceries or electronics, may involve more deliberate decision processes (Erzincanlı et al., 2024). Future research should examine these category-level distinctions to refine the understanding of impulsivity across consumption types.
Fifth, the sample composition (dominated by women aged 28–43 with formal employment) limits generalizability. Future research could employ multi-group analysis by gender or age to test for structural invariance and detect behavioral differences across demographic segments (Dittmar et al., 2004).
Finally, the study was conducted in Indonesia, a collectivist cultural context, where social norms play a relatively strong role, particularly among non-BNPL users. The findings may differ in individualist cultures, suggesting that cross-cultural generalization should be approached with caution.

Strengths of The Study

Despite these limitations, this study provides several noteworthy contributions. First, it offers a novel comparative framework by analyzing BNPL users and non-users within a single analytical model, a perspective rarely adopted in previous research. This comparative approach enabled clearer identification of the shifting role of social norms versus internal psychological factors in driving impulsive consumption.
Second, the study employed a comprehensive analytical model with rigorous testing of reliability, validity, and discriminant validity, thereby enhancing the robustness and credibility of the findings. Third, the study involved a substantial sample size of 303 respondents with geographical distribution across multiple provinces in Indonesia, providing a reasonably representative view of consumer behavior in

an emerging digital market. Overall, these strengths ensure that despite its limitations, the study offers strong empirical evidence for understanding how BNPL reshapes both psychological mechanisms and sociocultural dynamics of impulsive buying in the digital economy.

Funding Statement

This research is supported by the Public Fund (Dana Masyarakat) IPB University under the Fiscal Year 2025, through the Dosen Muda Research Scheme with Grant Number: 10241/IT3.D10/PT.01.03/P/B/2025.

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