



Exploring the Use of Cashless Payments in Personal Financial Management for Generation Z

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Abstract . *This study explores how Generation Z in Semarang, Indonesia, navigates the psychological dynamics of cashless payment methods in their personal financial management. Employing a qualitative case study design with a phenomenological orientation, this study conducted semi-structured interviews with ten informants, six of whom were purposively selected for in-depth analysis, representing students, employees, and informal workers. The data were analyzed thematically following Braun and Clarke's (2006) approach and interpreted through the lenses of the mental accounting and pain of paying theories. Findings reveal three themes: (1) digital payments reduce the psychological salience of spending, making money feel like numbers on a screen; (2) informants develop independent account segregation as an informal mental accounting strategy to maintain control; and (3) most informants experience episodic loss of spending control, particularly through PayLater features, followed by corrective self-regulation. The study extends payment psychology literature into an Indonesian urban context and offers practical implications for fintech interface design, regulatory disclosure of BNPL risk, and youth financial literacy programs.*

Keywords: *Cashless Payment; Financial Behavior; Generation Z; Mental Accounting; Pain of Paying.*

1. BACKGROUND

Generation Z in Indonesia has grown up amidst one of the most rapid payment system transformations in history transitioning from cash to e-wallets, QRIS, and paylater schemes that now permeate nearly every transaction point, from university campuses to traditional markets. Ideally, this convenience should strengthen personal financial management: automatic record-keeping, transaction transparency, and time efficiency ought to make the younger generation more financially disciplined than previous cohorts who relied on manual bookkeeping. However, the reality reveals a contradictory pattern for some users: the ease of cashless transactions is often accompanied by weakened spending control, primarily because digital transactions lack the physical sensation of "losing money" associated with cash.

This gap is clearly evident in the experiences of the informants in this study. Most admitted that digital balances merely "feel like numbers on a screen" and are significantly easier to spend than physical cash, whereas others have developed strict account and budget separation strategies to offset this vulnerability. While quantitative data regarding the frequency and nominal value of cashless transactions, digital financial literacy levels, and paylater adoption rates among students and young professionals would optimally support a more precise mapping of this issue, limited access to large-scale primary data necessitates a different approach. Consequently, this study focuses on a qualitative exploration of the informants' firsthand experiences.

Consumer behavior literature over the past two decades has consistently demonstrated that payment methods influence the psychology of spending. The concept of mental accounting (Thaler, 1985, 1999) explains how individuals categorize money into "mental accounts" governed by distinct rules. Concurrently, the "pain of paying" concept (Prelec & Loewenstein, 1998) suggests that cashless payments weaken the psychological link between the act of purchasing and the feeling of depleting financial resources, thereby encouraging less controlled spending. Recent neuroscientific findings (Banker et al., 2021; Ceravolo et al., 2019) substantiate this pattern biologically, while a large-scale meta-analysis (Schomburgk et al., 2024) confirms the reality of this effect, albeit statistically small. However, most existing evidence originates from developed countries with vastly different financial systems and consumption cultures than Indonesia. This study seeks to bridge this gap through an in-depth exploration of the experiences of Generation Z workers and students in Semarang.

The significance of this research is underscored by Generation Z's dual position: they are the productive age group that most intensively adopts non-cash payment systems, yet they are also the most vulnerable to the risks of impulsive spending and paylater debt traps during the early stages of their financial independence. This study aims to explore how Generation Z in Semarang interprets and manages the psychological dynamics between the convenience of digital payments and the necessity of maintaining personal financial control. Simultaneously, it provides theoretical contributions by contextualizing mental accounting and the pain of paying within a local setting, while offering practical insights for fintech service providers, regulators, and youth financial literacy programs.

2. THEORETICAL STUDY

This research relies on two complementary consumer psychology theories: mental accounting and the pain of paying. Mental accounting, introduced by Thaler (1985) and refined in Thaler (1999), explains that individuals do not treat money as a fully fungible resource, but rather group it into "mental accounts" with distinct usage rules—for example, a necessities account, an entertainment account, or a savings account. This grouping helps simplify everyday financial decision-making, but it can also introduce bias, as funds in one account are often not transferred to cover needs in another, even when it is economically rational to do so.

The second theory, pain of paying, was developed by Prelec and Loewenstein (1998) through a "double-entry" mental accounting model that explains the reciprocal interaction between the pleasure of consuming and the psychological pain of paying. Prelec and Loewenstein argue that the payment method influences the degree of coupling, or temporal

connection, between the act of buying and the act of paying; the weaker this connection (for example, due to the use of a credit card or digital wallet), the lower the pain of paying, making it easier to spend without full awareness of the value of the money spent.

A significant body of empirical evidence supports both theories. Soman (2001) found that payment methods that do not involve manual recording (rehearsal) and that delay the immediate reduction in wealth (immediacy) weaken the effect of past spending on subsequent spending intentions. Raghurir and Srivastava (2008) demonstrated through a series of experiments that recipients of money in the form of vouchers or gift cards tend to spend more than recipients of equivalent amounts in cash. From a neuroscientific perspective, an fMRI study by Banker et al. (2021) found that credit card payments trigger strong activation in the striatum (the brain's reward system center) unrelated to product price, while a study by Ceravolo et al. (2019) found the opposite pattern: cash payments trigger higher activation in the insula and parietal cortex, brain areas associated with salience and negative affect. In aggregate, a meta-analysis by Schomburgk et al. (2024), who synthesized 71 studies and 392 effect sizes, confirmed the existence of a small but statistically significant "cashless effect," with a stronger effect on conspicuous consumption.

Recent research extends these two theories to the realm of contemporary digital payments. Faraz and Anjum (2025) introduced the construct of "Spendception," explaining how low psychological visibility, high convenience, and emotional detachment associated with digital payments collectively drive impulse purchases. Karthikeyan et al. (2025) found a similar pattern in Generation Z: low transparency of payment methods correlated with decreased financial awareness and increased impulsive spending. For Buy-Now-Pay-Later (BNPL) schemes, experimental field research by the Central Bank of Ireland (2025) recorded a 4.4% increase in spending compared to debit card use, with a 22.2% increase in the probability of purchasing discretionary goods—even the mere expectation of future BNPL access was sufficient to increase current spending.

In the Indonesian context, research on QRIS, e-money, and Generation Z financial behavior is still relatively dominated by quantitative, survey-based approaches. Lau and Kulsum (2023) and Sabrina et al. (2026) found that the efficiency and practicality of QRIS significantly influence Generation Z's perspective on a cashless society, while Kuntoro Putri et al. (2024) and Prasetyani et al. (2024) highlighted that perceived benefits, convenience, and trust dynamics are important determinants of QRIS and PayLater adoption in this age group. Similarly, Widiyanti et al. (2023) and Vitalia et al. (2024) found that financial literacy and e-money use significantly shape Generation Z's financial behavior in a cashless society. Nisa and

Haryono (2022) demonstrated the importance of locus of control and lifestyle in explaining this group's financial management behavior, while Sanny et al. (2023) specifically confirmed the tendency of impulsive buying among Generation Z e-wallet users in Indonesia through a stimulus-organism-response framework. Setia and Oktafiani (2026) complemented this picture by showing that literacy, lifestyle, and socio-economic factors together shape Generation Z's financial planning. However, these studies generally measure intentions or behaviors in aggregate through structured questionnaires, and few have explored in depth how Generation Z's subjective experiences and self-management strategies develop over time. This is a crucial gap that this study attempts to fill through a qualitative approach.

Based on the theoretical framework above, this study proposes three propositions as exploratory guidelines (not statistically tested hypotheses, given the qualitative nature of this study):

P1: The lower the psychological salience (pain of paying) perceived by Generation Z towards cashless transactions, the higher their tendency to experience unplanned spending.

P2: Members of Generation Z who independently implement mental accounting strategies (separation of accounts/budgets per function) tend to be better able to maintain spending control even when transacting cashlessly.

P3: The pressure of socio-economic norms in the local environment (widespread acceptance of QRIS among merchants and peers) strengthens the intensity of adoption and use of cashless payments among Generation Z.

3. RESEARCH METHODS

This research utilized a qualitative approach with a phenomenologically oriented case study design, aiming to gain an in-depth understanding of the subjective meanings and experiences of informants interacting with non-cash payment systems (Creswell & Poth, 2018). This approach was chosen because the study focused on psychological processes and personal strategies that are difficult to capture adequately through structured survey instruments.

The primary data for this study were gathered through semi-structured interviews with ten Generation Z informants (aged 19–25 years) in Semarang City, comprising students, employees, and informal workers (micro traders and online motorcycle taxi drivers). Of the ten individuals, six informants were selected through a purposive sampling technique to ensure socio-economic role diversity and enrich the variety of experiences. These included two students (Heri Lase, 21; Rizky Ananda, 19), two employees (Widar Laia, 24; Lestari Wulandari, 23), one micro-entrepreneur in the culinary sector (Andra, 23), and one gig

economy worker (Bima Saputra, 24). Pseudonyms were assigned to protect the informants' privacy.

The interview protocol covered eight core areas: (1) feelings and psychological considerations when spending digital balances compared to cash, (2) strategies for dividing budgets across various payment applications, (3) the influence of the local environment on cashless habits, (4) additional satisfaction beyond transaction convenience, (5) experiences of losing control over spending, (6) recovery steps following overspending, (7) strategies for avoiding debt and paylater traps, and (8) awareness of personal data security.

Data were analyzed using thematic analysis following Braun and Clarke's (2006) six stages: data familiarization, initial coding, theme discovery, theme review, theme naming, and report writing. The analytical process began by formulating analytical claims for each group of responses, followed by presenting verbatim quotes from informants, interpreting implied meanings, identifying cross-informant patterns, and linking them to the theoretical framework of mental accounting and the pain of paying (Miles, Huberman, & Saldaña, 2014). Data validity was maintained through two mechanisms: source triangulation—comparing response patterns among informants from diverse socio-economic backgrounds (students, employees, entrepreneurs, and gig workers)—and member checking, which involved confirming interview summaries with the informants to ensure that the researcher's interpretations aligned with their intended meanings.

4. RESULTS AND DISCUSSION

“Invisible Money”: Low Psychological Salience in Digital Transactions

The first finding shows that non-cash payments consistently weaken the psychological connection between the act of purchasing and the perceived value of the money spent, in line with the predictions of the pain of paying theory.

"When I use an e-wallet, I don't notice any reduction, just the numbers on the screen change. Holding physical cash makes me more adept at counting because I see fewer notes and the value feels more tangible." (Heri Lase, Student)

A similar pattern was reported by Widar Laia: “Digital money feels easier to spend because it’s just numbers. Cash, on the other hand, feels more valuable and tangible, so I always think twice before spending it on less important things.” Rizky Ananda even explicitly linked this convenience to the potential for waste: “It feels more convenient and practical to use digital money, but sometimes it becomes wasteful because there are no physical limitations like counting bills. It feels like spending nothing.” These two statements explicitly illustrate the

decoupling process described by Prelec and Loewenstein (1998): when the temporal and experiential link between purchase and payment weakens, the psychological pain of paying also diminishes, so spending becomes more lenient than rational considerations. This pattern is also consistent with Sanny et al.'s (2023) findings on Generation Z e-wallet users in Indonesia, which showed that the convenience and lack of physical stimuli in digital transactions drive impulsive purchases through emotional channels, rather than rational considerations.

This low salience is also reinforced by local socio-economic norms. Bima Saputra, an online motorcycle taxi driver, said: "More passengers now pay via bank transfer or QRIS than cash. My work environment has forced me to become accustomed to relying on digital balances to ensure smooth transactions." This pattern is consistent with the findings of Sabrina et al. (2026) that the efficiency and practicality of QRIS shape Generation Z's perspective on a cashless society, as well as Karthikeyan et al. (2025) who showed that low transparency in payment methods correlates with decreased financial awareness. Thus, environmental pressure not only drives the adoption of cashless payments (supporting proposition P3) but also reinforces the psychological condition of low pain of paying that underlies proposition P1.

Separate Accounts as an Independent Mental Accounting Strategy

The second finding suggests that rather than being passive about the risks of digital waste, most informants actively develop their own explicit and disciplined mental accounting practices—supporting proposition P2.

"There's a clear separation. I use mobile banking for tuition, food, and basic necessities. I only use a maximum of Rp 200,000 per month for snacks and entertainment, so it doesn't interfere with my main budget." (Heri Lase, Student)

Widar Laia applies a similar logic by distinguishing salary accounts from e-wallet balances, while Lestari Wulandari asserts: "I don't mix balances between apps. Each app has a specific purpose, for example, one for paying bills, one for shopping, one for entertainment, so it's easy to monitor usage." This practice is a literal realization of Thaler's (1985, 1999) conceptualization of mental accounting — informants consciously create "mental accounts" with distinct usage rules as a self-control mechanism, not simply a passive cognitive bias.

The most prominent case comes from Andra, a meatball vendor: "I separate it into three accounts: one for sales revenue, one for purchasing trading materials, and one specifically for personal needs. So business capital is not mixed with daily spending money." This clear separation between business capital and personal needs aligns with research findings on capital management in micro-enterprises in the culinary sector, which shows that the discipline of

separating business capital from personal consumption is a crucial factor in the sustainability of micro- and small-scale culinary businesses (Juliani & Nugraheni, 2025). This finding strengthens the argument that mental accounting is not only an individual psychological phenomenon, but also a financial management strategy consciously adopted by informal business actors as a form of healthy capital management.

The Cycle of Loss of Control and Recovery After Overspending

The third finding shows that even though informants actively implemented independent mental accounting strategies, most still experienced episodes of losing control of spending—especially through the paylater feature—which were then followed by self-discipline efforts to recover.

"When I first tried PayLater, it felt like I had extra money to spend anytime, so I often shopped without thinking. Finally, when the bill came in at the end of the month, I was shocked and had to save until the next monthly payment came in." (Heri Lase, Student)

Widar Laia reported a similar pattern: "It often happens without me realizing it. Because I only need to scan a QR code, I don't really calculate my spending. Finally, at the end of the month, I realize I've exceeded my self-determined budget." Bima Saputra added a daily dimension: "I often feel like I still have a lot of money in my balance, even though I've spent it on small, unnoticeable things. Finally, at the end of the week, I realize the money is gone even though I haven't even gotten paid yet." This recurring pattern is consistent with the Central Bank of Ireland's (2025) finding that the mere expectation of BNPL access is enough to increase current spending, as well as Faraz and Anjum's (2025) construct of "Spendception," which explains how the low psychological visibility of digital transactions encourages impulsive purchases without the perpetrator realizing it.

Interestingly, all informants demonstrated a relatively quick recovery capacity after realizing they were overspending. Heri Lase limited his paylater account and topped up his balance sufficiently; Widar Laia created a shopping list and recorded his expenses manually; while Bima Saputra practiced daily discipline: "Every night I transfer the remaining balance to my savings account so I'm not tempted to spend it again. I also keep a simple record of my daily income and expenses," with a fixed income divided into 60% savings, 30% digital wallet, and 10% emergency fund. This practice of daily income allocation aligns with the principles of entrepreneurship-based human resource management, which emphasizes self-management discipline as the foundation for the financial sustainability of informal economy actors (Widodo, Murti, Nugraheni, & Awaludin, 2025). Rizky Ananda formulated a similar cognitive strategy in the form of a reflective question before making a purchase: "I ask myself first: 'Do

I really need this?’ If the answer is no, I postpone the purchase.” Overall, this cycle of loss-of-control-and-recovery demonstrates that mental accounting in Generation Z is dynamic and iterative, not a once-formed, automatic mechanism.

Overall, these three findings complement each other in answering the research problem formulation: the feeling of losing money is indeed weaker in non-cash transactions (4.1), but this weakness is actively responded to through an independent mental accounting strategy (4.2) that must be continuously updated through a cycle of reflection and self-discipline, especially in dealing with the paylater feature that delays the pain of paying even further (4.3). These findings enrich the local context of the mental accounting and pain of paying theory which has been dominated by evidence from developed countries, while also showing that Generation Z Indonesia across profiles of students, employees, and informal workers are not merely passive victims of digital payment system design, but actors who actively negotiate their financial control.

5. CONCLUSION AND SUGGESTIONS

This study concludes that Generation Z in Semarang City perceives cashless payments as psychologically "unnoticeable," aligning with predictions from the pain of paying and mental accounting theories. However, most participants are not passive subjects to this risk. Instead, they actively and independently develop account separation and budgeting strategies as a form of informal mental accounting, although these strategies are not completely immune to the temptation of PayLater features that further delay the pain of paying. The findings address all three research questions: the sense of loss is indeed weaker in digital transactions, self-control strategies are formed independently and vary by occupational profile, and local environmental norms particularly the widespread acceptance of QRIS among merchants and peers substantially strengthen the adoption and intensity of cashless payment use among this demographic.

This study has notable limitations. The selection of six out of ten available informants, while based on diverse role considerations, restricts the generalizability of the findings and potentially omits the range of experiences emerging from the four informants not analyzed in-depth at this stage. Additionally, the interviews were retrospective and therefore susceptible to recall bias. Furthermore, the study's scope was confined to a single city, making it unlikely to perfectly represent Generation Z patterns in regions with different socio-economic characteristics. While these constraints restrict the broad applicability of the study, they do not invalidate the qualitative patterns identified herein.

Based on these findings, several practical recommendations emerge. Fintech service providers are encouraged to design interfaces that provide visual feedback or tangible notifications whenever a balance decreases, thereby reinforcing the psychological salience lost in digital transactions. For regulators, explicit disclosure of the risks associated with PayLater features at the point of transaction—not merely within the terms and conditions should be mandated, given that prior research indicates the mere expectation of BNPL access is sufficient to increase current spending. For financial literacy program organizers, the independent mental accounting practices developed by some informants in this study (such as separating accounts by function) can serve as practical, relatable educational models for other Generation Z individuals. Finally, future research is recommended to expand the number and variety of informants including an in-depth analysis of the remaining four participants from this dataset and to consider longitudinal designs to capture how Generation Z's financial management strategies evolve as their financial experience matures..

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