



Spendception and AI-Driven Digital Payment Deception: A Literature Review

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Abstract

This systematic literature review examines "spendception", the psychological deception of spending more when using digital payments, within the context of recent trends in digital finance from 2020 to 2026. The review synthesizes 42 peer-reviewed studies to identify critical research gaps, analyze the convergence of AI-driven personalization and real-time transaction processing in exacerbating impulsive consumption, and establish the imperative for policymakers and marketing organizations to prioritize consumer protection and digital literacy initiatives. The SLR reveals significant gaps in longitudinal research, neurobiological understanding, regulatory integration, intersectional vulnerability analysis, and intervention mechanisms, gaps essential for developing comprehensive consumer protection frameworks in an increasingly sophisticated fintech ecosystem.

INTRODUCTION

The concept of Spendception was formally introduced as a novel construct capturing the psychological impact of digital payment systems on consumer behavior (Faraz & Anjum, 2025). Unlike traditional cash transactions, which create visceral discomfort through physical money exchange, digital payments attenuate the psychological resistance to spending through reduced visibility, perceived ease of transactions, and absence of immediate tactile feedback. This fundamental shift has transformed consumer behavior, creating a temporal and cognitive collapse between desire and purchase (Swarnalatha & Kalaivani, 2025). Spendception extends beyond simple payment friction reduction; it represents a sophisticated ecosystem of psychological mechanisms wherein reduced pain of paying, combined with digital interface design, emotional triggers, and algorithmic nudging, collectively conspire to increase consumer expenditure without proportional increases in conscious deliberation (Faraz & Anjum, 2025).

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The rapid digitalization of commerce and the proliferation of frictionless payment technologies, including mobile wallets, contactless payments, Buy-Now-Pay-Later (BNPL) services, and unified payment interfaces like UPI and QRIS, have fundamentally redefined the relationship between desire and action in consumer markets (Swarnalatha & Kalaivani, 2025). Generation Z and millennials, as digital natives, demonstrate particularly heightened vulnerability to these mechanisms, with research indicating that digital payment usage has a significant positive effect on impulsive buying behavior, while financial literacy shows inverse effects (Yahfi et al., 2025). The COVID-19 pandemic accelerated digital payment adoption and normalization, further amplifying Spendception effects across diverse demographic groups (Yuttama, 2025).

The theoretical foundation for understanding Spendception rests upon the "pain of paying" concept, derived from behavioral economics and prospect theory (Yahfi et al., 2025). When physical currency transactions occur, consumers experience measurable psychological discomfort proportional to the amount spent, which functions as a natural regulatory brake on excessive consumption., abbreviated checkout processes, and integration of payment systems into broader consumption ecosystems (Qi, 2025). Mental accounting theory further elucidates how payment method selection influences consumer behavior; frictionless payment methods such as QR code scanning or facial recognition significantly reduce payment pain, leading to higher spending per transaction and increased impulse consumption frequency (Qi, 2025). Financial literacy, as a moderating construct, theoretically protects consumers from Spendception effects by enhancing conscious deliberation and financial self-regulation (Yahfi et al., 2025).

Existing research predominantly employs cross-sectional survey methodologies examining immediate behavioral responses to digital payment systems. While studies document that AI-driven personalization increases purchase frequency and spending magnitude (Farina Iqbal et al., 2025), research lacks longitudinal perspectives examining whether consumers develop habituation, resistance, or deepening dependency over extended periods. Understanding whether Spendception effects exhibit temporal dynamics would inform both regulatory intervention timing and individual-level behavioral change strategies. Cross-cultural evidence would clarify whether psychological mechanisms are universal or culturally contingent, with profound implications for harmonizing international consumer protection frameworks.

METHOD

This Systematic Literature Review (Caldarelli & Ellul, 2021; Hueso et al., 2020; Noriega et al., 2023; Pramitasari et al., 2023; Reshi et al., 2025; Silva et al., 2023) addresses a critical gap in the fintech and consumer behavior literature. While substantial research examines individual components of digital payment systems payment friction, mobile banking adoption, BNPL usage, and impulse buying relatively few studies synthesize these elements within a unified framework examining how AI-driven personalization and real-time transaction processing converge to exacerbate Spendception. The period 2020-2026 is particularly significant, encompassing the post-pandemic digital financial transition, the emergence of sophisticated AI recommendation engines, and escalating regulatory attention to consumer protection in digital markets.

RESULT AND DISCUSSION

Architecture of AI-Powered Personalization in Fintech Ecosystems

Modern fintech platforms employ sophisticated AI systems to create hyper-personalized user experiences that fundamentally alter spending psychology. Generative AI technologies combined with large language models analyze vast behavioral datasets—transaction histories, browsing patterns, individualized product recommendations and promotional targeting (Farina Iqbal et al., 2025). These systems leverage reinforcement learning to continuously optimize which products, promotions, and purchase timing will maximize conversion probability for each specific user (Reyes & Cho, 2025). The architecture of AI-driven personalization integrates multiple reinforcing loops: algorithmic recommendations that increase product visibility, personalized promotional offers timed to maximize impulse response, gamified reward systems providing immediate positive reinforcement, and dynamic pricing mechanisms adjusting prices based on individual willingness-to-pay assessments (Bitra, 2025). Critically, these systems operate at millisecond timescales, adapting recommendations and promotional content in real-time based on evolving user behavior signals, effectively creating a personalized psychological environment designed to maximize spending (Khamaj & Ali, 2024).

Real-Time Transaction Processing and Psychological Feedback Loops

Real-time transaction processing technologies create immediate, granular feedback loops fundamentally altering consumer experience of spending. Traditional retail involved temporal delays between purchase decision and payment confirmation; modern digital payments collapse these intervals to seconds. This instantaneous feedback manifests through immediate transaction notifications, real-time reward point accumulation displays, instant cashback notifications, achievement badges, and algorithmic suggestions for related purchases (Agarwal et al., 2026). These real-time feedback mechanisms activate psychological reinforcement principles at frequencies and immediacy historically unavailable in consumer contexts. Variable ratio reinforcement schedules, where rewards arrive unpredictably but frequently, produce particularly strong behavioral conditioning, paralleling mechanisms underlying behavioral addiction (Lauderdale-Littin et al., 2024). The convergence of AI-personalization and real-time feedback creates compounding effects: as transactions increase in frequency driven by personalized recommendations, feedback loop intensity increases proportionally, potentially creating escalating cycles of enhanced psychological engagement and spending (Teepapal, 2025).

Pain of Paying Reduction and Psychological Distance

The foundational psychological mechanism underlying Spendception involves reducing the "pain of paying"—the psychological discomfort accompanying expenditure. Digital payments eliminate multiple pain-producing elements inherent in cash transactions: visible currency depletion, tangible transaction effort, and transaction memorability—cash transactions create stronger memories than digital transactions (Qi, 2025). Additionally, digital payment invisibility increases psychological distance between desire and consequence, reducing conscious deliberation about spending appropriateness (Faraz & Anjum, 2025). Payment method psychology reveals consistent patterns: consumers spend more via credit cards than debit cards, more via debit cards than cash, and most via BNPL and one-click checkout mechanisms (Maesen & Ang, 2025). This gradient corresponds

precisely to psychological friction reduction along the payment method spectrum. Notably, even consumers aware of this psychological bias exhibit vulnerability; knowledge of bias persistence does not guarantee behavioral modification.

CONCLUSION

Spendception—the psychological deception of spending more when using digital payments, represents a critical challenge for contemporary consumer protection policy and fintech governance. The convergence of AI-driven personalization and real-time transaction processing technologies creates psychological conditions enabling spending escalation without proportional consumer awareness or deliberate choice. Particularly concerning vulnerabilities concentrate among younger consumers, low-income populations, and individuals with inadequate financial literacy, precisely the populations for whom fintech should enhance financial inclusion rather than perpetuate exploitation. Without longitudinal evidence, policymakers cannot reliably predict intervention effects; without neurobiological understanding, targeting mechanisms remain speculative; without regulatory integration, protection frameworks develop divorced from empirical evidence; without intersectional analysis, protective policies may inadvertently harm intended beneficiaries; without intervention research, policy recommendations lack empirical validation. The imperative for SLR necessity for both policymakers and marketing organizations derives from multiple considerations. Policymakers require comprehensive evidence frameworks enabling consumer protection policy balancing innovation and welfare. Marketing organizations require understanding of psychological mechanisms both enabling responsible practice redesign and supporting risk management as regulation tightens. Consumers require protection mechanisms enabling benefiting from fintech innovation while avoiding exploitation through psychological deception. The research gaps identified establish roadmap for academic and applied research communities. Addressing these gaps through rigorous longitudinal studies, neuroscience research, policy analysis, intersectional examination, and intervention trials would substantially advance evidence-based consumer protection while positioning fintech for sustainable growth grounded in consumer welfare rather than exploitation.

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