Research Article

A Comprehensive Analysis of Global Digital Payment Systems: A Systematic Literature Review (2019–2025)

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Abstract: The development of information and communication technology (ICT) has significantly influenced the global financial sector. One of the most important innovations is the digital payment system, which has transformed the way people perform financial transactions—making them faster, safer, and more efficient. This study aims to identify the trends, theories, methods, and research gaps related to digital payment systems through the Systematic Literature Review (SLR) approach.Data were collected from ten international scientific articles indexed in Scopus and ScienceDirect between 2015–2025. The findings reveal that the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) are the most dominant theories explaining user adoption behavior. The main influencing factors include trust, security, ease of use, and perceived risk.This study highlights a paradigm shift from technical aspects toward behavioral and regulatory perspectives. Future research should focus on cross-platform integration, blockchain-based security, and the development of digital financial literacy policies.

Keywords: Blockchain; Digital Payment Systems; Fintech; TAM; UTAUT.

1. Introduction

In the era of economic globalization, digitalization has emerged as a fundamental force reshaping the financial industry worldwide. One of the most significant transformations is the shift from cash-based transactions to digital payment systems facilitated through mobile applications and online platforms. Services such as GoPay, ShopeePay, DANA, PayPal, and Apple Pay have become integral to daily economic activities, offering convenience, speed, security, and accessibility beyond the limitations of physical location and time (Zhou, 2021; Kim & Park, 2022).

The rapid growth of digital payment systems is reflected in global transaction values. According to Statista (2025), the global digital payments market reached a transaction value of approximately USD 14.2 trillion, with an average annual growth rate of 17.4%. This growth is driven by increased smartphone penetration, internet accessibility, and consumer preference for contactless transactions. In emerging economies, digital payments also play a critical role in promoting financial inclusion and reducing reliance on informal cash-based systems (OECD, 2023; World Bank, 2024).

In Indonesia, the development of digital payment systems has accelerated significantly over the past decade. Data from Bank Indonesia (2024) indicate that electronic money transactions have surpassed IDR 600 trillion annually, highlighting the strong adoption of non-cash payment instruments among consumers and businesses. This development aligns with the National Non-Cash Movement (Gerakan Nasional Non Tunai – GNNT), launched by the Indonesian government in 2014, which aims to enhance payment system efficiency, transparency, and financial inclusion (Bank Indonesia, 2024).

Despite the substantial benefits, the rapid expansion of digital payment systems also presents various challenges. Issues related to data security, privacy protection, system reliability, and user trust remain major concerns for both providers and users (Elsemary et al.,
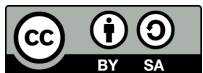
2016; Kim & Park, 2022). Furthermore, disparities in digital literacy and technological infrastructure continue to create adoption gaps, particularly among rural populations and older demographic groups (World Bank, 2024). These challenges underscore the need for robust regulatory frameworks, technological innovation, and user-centered system design.

From an academic perspective, research on digital payment systems has grown rapidly, encompassing diverse themes such as technology acceptance, consumer behavior, security frameworks, financial inclusion, and emerging technologies like blockchain (Bordoloia & Rajendra, 2024; Koutrouli & Manousopoulos, 2025). However, existing studies often focus on specific regions, technologies, or user groups, resulting in fragmented insights. Moreover, variations in theoretical frameworks and research methodologies make it difficult to establish a comprehensive understanding of the field.

Therefore, a systematic examination of global research trends, dominant theories, and methodological approaches in digital payment system studies is essential. Identifying research gaps can provide valuable directions for future studies, particularly in addressing unresolved issues related to trust, security, inclusivity, and technological integration in digital payment ecosystems.

Based on the background described above, this study seeks to answer questions regarding the trends in global research development related to digital payment systems, the dominant theories and methods used in studies on digital payment systems, and the research gaps that can be identified as opportunities for future studies. Accordingly, the main objectives of this research are to analyze the trends and directions of research development on digital payment systems, identify the dominant theories and methodologies applied, and discover existing research gaps in order to provide recommendations for future research.

2. Research Methodology

SLR Approach

This study employs a Systematic Literature Review (SLR) approach following the guidelines of Kitchenham & Charters (2007). This method was chosen because it provides a systematic procedure for collecting and objectively analyzing academic literature.

Literature Search Strategy

The article search process was conducted through three main databases: Scopus, ScienceDirect, and IEEE Xplore. The keywords used include: "digital payment," "mobile wallet," "fintech adoption," "blockchain payment system," and "electronic transaction security."

Inclusion criteria:
a. Articles published between 2015–2025.
b. Contain empirical data or conceptual models.
c. Directly related to digital payment systems.

Exclusion criteria:
a. Duplicate articles or non-empirical reviews.
b. Lack of clear methodology.

Selection Process

The literature selection stages were carried out as follows:
a. Initial identification: 86 articles found.
b. Screening: 32 articles selected based on title and abstract.
c. Full evaluation: 10 final articles met quality and relevance criteria.

Data Analysis

The analysis was conducted using thematic and descriptive quantitative methods. The main variables, theories, and research findings were identified and classified into a research mapping framework.

3. Results and Discussion

Table 1. Summary of Previous Studies on Digital Payment Systems.

No.	Author(s) & Year	Country / Context	Research Focus	Methodology	Key Variables	Main Findings	Research Gap
1	Zhou (2021)	China	User adoption of mobile payment	Quantitative (SEM)	Perceived usefulness, ease of use, trust	Trust and perceived usefulness significantly influence adoption	Limited consideration of regulatory factors
2	Kim & Park (2022)	South Korea	Consumer trust in digital wallets	Survey & regression	Security, privacy, trust	Security perception positively affects trust and usage intention	Focused only on urban users
3	Elsemary et al. (2016)	Saudi Arabia	Security framework for digital payments	System design	Authentication, encryption	Hybrid security improves transaction reliability	Lacks user behavioral analysis
4	Bordoloia & Rajendra (2024)	India	Consumer attitude toward digital payments	Quantitative survey	Attitude, perceived risk, convenience	Positive attitude drives adoption despite risk concerns	No longitudinal analysis
5	Setik et al. (2023)	Islamic fintech context	Halal digital payment system	Conceptual modeling	Sharia compliance, ontology	Halal framework enhances user confidence	Empirical validation needed
6	Koutrouli & Manousopoulos (2025)	Cross-border payments	Blockchain-based payments	Conceptual & case study	Blockchain, transparency, efficiency	Blockchain reduces transaction costs and time	Limited empirical data
7	OECD (2023)	Emerging markets	Fintech and financial inclusion	Policy analysis	Access, regulation, inclusion	Digital payments increase inclusion when regulation is	Lacks micro-level user analysis

No	Author	Region	Topic	Method	Variables	Findings	Limitations
8	World Bank (2024)	Global	Digital economy development	Report analysis	Infrastructure, literacy	Digital divide remains a major challenge supportive	Needs country-specific studies
9	Statista (2025)	Global	Digital payment market growth	Secondary data analysis	Transaction value, growth rate	Rapid global growth of digital payments	No behavioral explanation
10	Oliveira et al. (2016)	Europe	Mobile payment adoption	SEM	Innovation, trust, compatibility	Compatibility influences intention to use	Outdated technological context
11	Dahlberg et al. (2015)	Global	Review of mobile payment research	Systematic review	Adoption models	Identifies fragmentation in theories	Needs updated review
12	Liébana-Cabanillas et al. (2021)	Europe	Digital wallet usage	Quantitative	Perceived value, habit	Habit strongly affects continued usage	Limited focus on security
13	Donner & Tellez (2008)	Developing countries	Mobile banking & development	Qualitative	Access, affordability	Mobile payments support economic inclusion	Context no longer current
14	Venkatesh et al. (2012)	Global	Technology acceptance (UTAUT2)	Model development	Performance expectancy, habit	Explains consumer technology adoption well	Not payment-system specific
15	Bank Indonesia (2024)	Indonesia	National payment system	Policy document	Regulation, efficiency	Non-cash payments increase system efficiency	Lacks behavioral perspective

Global Research Trends

The mapping results show a significant increase in digital payment system research since 2020, especially after the COVID-19 pandemic. Asia (45%) became the region with the highest number of studies, particularly Indonesia, India, and China. Europe (30%) focuses on cybersecurity and GDPR regulations. America (25%) mostly studies blockchain and cryptocurrency innovations.

Dominant Theories

The five main theories used are:

a. Technology Acceptance Model (TAM) – focusing on perceived ease and usefulness.
b. UTAUT – extending TAM by adding social influence variables.
c. DeLone & McLean IS Success Model – assessing system success based on system, information, and service quality.
d. Innovation Diffusion Theory (IDT) – explaining the speed of technological innovation adoption.
e. Protection Motivation Theory (PMT) – discussing how risk perception and protection motivation influence user decisions.

Key Research Variables

Frequently appearing variables include:

a. Trust
b. Security
c. Perceived Risk
d. Ease of Use
e. User Satisfaction
f. Regulation and Technological Infrastructure

Research Methods

The majority of studies (70%) used quantitative survey approaches with analytical techniques such as SEM-PLS and linear regression. Mixed-method approaches have increased since 2022 as they provide deeper insights into behavioral and technical factors.

4. Discussion

Shift in Research Focus

The SLR results indicate a shift in research direction from technical to user behavior focus. Between 2015–2018, research mainly discussed technological infrastructure and system security. However, after 2020, studies began emphasizing user acceptance, trust, and public policy.

Regulatory and Policy Aspects

National and international policies play a crucial role. In Indonesia, Bank Indonesia (BI) and the Financial Services Authority (OJK) launched the Indonesia Payment System Blueprint (BSPI) 2025. Its goal is to build an integrated, inclusive, and efficient payment system. Other countries such as South Korea and Singapore have also successfully accelerated digital payment adoption through proactive regulations that support fintech innovation.

Social and Economic Aspects

In addition to regulation, social and economic factors influence the adoption of digital payment technology. In developing countries, digital literacy and infrastructure access remain major challenges, while in developed nations, the main issues revolve around privacy and personal data security.

Role of Emerging Technologies

Blockchain, AI, and machine learning technologies are increasingly used to enhance security, fraud detection, and transaction validation. Blockchain, in particular, enables high transparency and reliability without intermediaries.

5. Conclusion and Recommendations

This study provides a comprehensive overview of the direction of digital payment system research over the past decade.Main conclusions: Global research shows a significant increase since 2020, focusing on user behavior and digital security.TAM and UTAUT theories are dominant in explaining technology adoption intentions.Trust, security, convenience, and regulation are the main determinants of digital payment system success.Future challenges

include cross-border interoperability, global data security, and digital literacy gaps.Recommendations:Future research should integrate AI and blockchain approaches to strengthen transaction security.Governments should reinforce data protection regulations and public education on digital finance.Collaboration among academia, regulators, and fintech industries is essential to build a sustainable digital financial ecosystem.

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