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Digital Payments and the Growth of Fintech Services As Part of the Digital Business Ecosystem

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Abstract

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The rapid digitalization of Indonesia's economy has spurred significant growth in financial technology (fintech) and digital payments, reshaping the national business ecosystem. This study applies a systematic literature review to analyze the development of key fintech segments payments, lending, wealth management, and insurtech and their integration with e-commerce, logistics, and online transportation. Findings indicate that digital payments function as a gateway to broader financial services by improving transaction efficiency, supporting financial inclusion for MSMEs, and fostering customer loyalty through personalized programs. Case studies of e-wallets illustrate practical synergies in platform integration and service innovation. However, challenges persist, including regulatory uncertainty, cybersecurity risks, limited digital literacy, and infrastructural gaps in rural areas. The study underscores fintech's role in building a resilient digital ecosystem while offering insights for policymakers and practitioners to promote inclusive, secure, and sustainable growth. Future research should investigate adoption in underserved populations, long-term MSME impacts, and the use of AI and blockchain to strengthen security and trust.

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1. Introduction

Economic digitalization is a global phenomenon marked by the integration of digital technology into economic activities, including financial technology (fintech), e-commerce, and online-based services. This transformation drives the creation of new business models, improves supply chain efficiency, and expands market access across borders. International studies confirm that digital ecosystems are key drivers of economic growth in both developed and developing countries. In Indonesia, the digital economy is expanding rapidly due to rising internet penetration and smartphone ownership. According to the Indonesian Internet Service Providers Association (APJII), national internet penetration reached 78.19% in 2023, equal to 215 million users. Easier access to the internet and widespread smartphone use have shifted consumer behavior from conventional to online channels (Aprilia, 2023). Findings from e-Conomy SEA by Google, Temasek, and Bain & Company project Indonesia's digital economy to grow from USD 82 billion in 2023 to USD 109 billion, driven by e-commerce, online transport, food delivery, and digital financial services.

Data from the Central Statistics Agency (*Badan Pusat Statistik* /BPS) also show rising GDP contributions from the information and communication sector, reinforcing digitalization as a pillar of Indonesia's economic agenda for inclusive growth and competitiveness. One of the most significant revolutions in this transformation is the payment system. Non-cash instruments, such as e-wallets (GoPay, OVO, DANA, LinkAja), QR-based systems like QRIS, mobile banking, and virtual accounts, have become central to digital transactions (Widjojo, 2020;

Johan et al., 2022). Adoption is supported by financial inclusion policies and user convenience. Electronic money transactions in 2023 reached IDR 835.84 trillion, growing 43.45% YoY, while QRIS transactions surged 121.22% to IDR 229.96 trillion, involving over 45 million merchants, mostly MSMEs. Growth is driven by transaction ease, aggressive promotions, and integration with digital services. Still, challenges remain: data security, low digital literacy, and resistance from traditional cash users.

Fintech services have also flourished alongside this payment ecosystem. Key segments include lending, wealth management, and insurtech (Takeda & Ito, 2021). Indonesia has seen a steady rise in fintech startups, supported by domestic and foreign investments and growing user adoption. Fintech promotes financial inclusion, particularly for MSMEs and unbanked populations excluded from conventional banking. Its integration with e-commerce, online transport, and logistics strengthens transaction efficiency, customer loyalty, and business management (Still et al., 2016). For example, e-wallets consolidate payments for shopping, transportation, and bill payments in a single platform, boosting user convenience and engagement.

Despite rapid growth, challenges persist. Regulatory frameworks often lag behind technological developments, creating legal uncertainty and potential loopholes (Kharisma, 2021). Security risks are another concern, with rising transaction volumes accompanied by fraud, hacking, and misuse of personal data (Despotović et al., 2023). Providers must therefore strengthen cybersecurity and promote user awareness. Uneven adoption across regions also poses a barrier.

Infrastructure gaps, limited digital literacy, and strong preferences for cash hinder equitable digital inclusion (Soejahchmoen, 2016).

Given these opportunities and challenges, examining the relationship between digital payments and fintech growth in Indonesia is essential. Understanding their interconnectedness offers a comprehensive picture of digital finance dynamics and adoption drivers. This research is particularly relevant for identifying fintech's role in shaping an integrated digital business ecosystem through cross-sector collaboration, which generates added value for consumers and businesses. The study carries significant implications. Academically, it contributes to the development of digital economy and financial technology literature in emerging markets, particularly Indonesia. Practically, it provides insights for businesses to design innovative strategies, for MSMEs to leverage digital tools, and for regulators to craft adaptive, inclusive, and secure policies (Loo et al., 2023). Moreover, the findings stress the importance of balancing innovation with risk management to ensure sustainable growth.

In conclusion, economic digitalization in Indonesia is rapidly accelerating, with fintech and digital payments as core pillars. Their integration into daily transactions has driven efficiency, inclusion, and innovation, while also creating new challenges in regulation, security, and literacy. Addressing these issues requires collaboration among government, businesses, and society to ensure that the benefits of digitalization are distributed widely and equitably. As Indonesia strengthens its digital ecosystem, future research should explore adoption dynamics among underserved groups, the long-term impacts on MSME performance, and the potential of emerging technologies such as AI and blockchain to enhance security and trust in digital financial services.

2. Methods

This study uses a systematic literature review method to identify, evaluate, and synthesize findings related to the development of digital payments and the growth of financial technology (fintech) services in Indonesia. Literature searches are conducted using several leading academic from Google Scholar to ensure a wide and credible coverage of sources. Keywords used in the search included "digital payment", "fintech growth", "digital ecosystem", "e-wallet", and "financial technology Indonesia". This combination of keywords was chosen to capture literature that discusses the dynamics of digital payments, the growth of fintech, and its relationship with the digital business ecosystem.

The research inclusion criteria include academic journal articles and industry reports published, with a focus on topics relevant to fintech and digital payments. Meanwhile, exclusion criteria include non-academic articles, publications in languages other than English or Indonesian, as well as studies that address topics outside the scope of this study. The article selection process is carried out through three successive stages. The first stage is screening by title to identify potential relevance. The second stage involves an abstract review to verify the suitability of the research focus with the study objectives. The third stage is a full text review to assess the methodological quality, completeness of the data, and relevance of substance to the research question.

Literature data analysis was carried out by classifying findings based on the type of fintech services, such as payment systems, technology-based loans (lending), and wealth management (wealth tech). Furthermore, research trends are identified through an analysis of digital transaction growth, technology adoption patterns, and fintech integration in the broader digital business ecosystem, including e-commerce, online transportation, and logistics. The synthesis process of findings aims to examine the relationship between the development of digital payments and the growth of fintech, as well as identify obstacles and opportunities in the development of this sector in Indonesia. This systematic approach is expected to result in a comprehensive, evidence-based understanding, which can serve as a foundation for strategic recommendations for academics, industry players, and policymakers.

3. Results and Discussion

3.1. Growth of Fintech Services and Digital Payments

Financial technology (fintech) services in Indonesia have shown significant growth in recent years, both in terms of the number of companies and the diversity of service types. The latest data shows that fintech startups in Indonesia have covered various main segments, including payment systems, technology-based loans (lending), wealth management (wealth management), and insurance technology (insurtech) (David et al., 2017; Abdillah, 2019; Lestari et al., 2020) The payment segment is the most dominant, driven by the increasing adoption of digital wallets (e-wallets), QRIS, and contactless payment systems that facilitate daily transactions. Meanwhile, the lending segment is growing rapidly thanks to application-based lending services that target the capital needs of MSMEs and people's consumptive financing. Wealth management and insurtech services are starting to show increased penetration, especially among urban communities with higher financial literacy.

The annual growth analysis shows a double-digit upward trend in almost all fintech segments, with the payment and lending segments recording the highest growth. This growth was largely fueled by factors such as ease of access to services via mobile devices, aggressive marketing strategies, and service integration with the broader digital business ecosystem, including e-commerce, online transportation, and logistics services (Stolbov & Shchepeleva, 2023). Market segmentation shows that the majority of fintech users come from the productive age group (20–40 years old), with the largest penetration in urban areas and economic centers. However, there is great market potential in rural areas and areas with low levels of financial literacy, which are currently the expansion targets of many fintech service providers (Hasan et al., 2023).

The increasing use of digital payments in Indonesia plays an important role as a catalyst for growth and innovation in the financial technology (fintech) industry. The surge in the adoption of digital wallets (e-wallets), QRIS payment systems, and contactless transaction methods has not only simplified the payment process, but also encouraged the birth of various additional services in the fintech sector (Putit & Sahudin, 2023). The ease and speed of transactions are the entrance for consumers to start using other digital financial services, such as online loans (digital lending), application-based investments (wealth tech), and digital insurance (insurtech) (Pazarbasioglu, 2020; Pahlavian et al., 2023). The integration of digital payments with various business platforms also creates a mutually reinforcing ecosystem, where the growth of one sector has a positive impact on another.

Case studies of several major players in Indonesia show this pattern in real terms. GoPay, which was initially integrated with Gojek's online transportation service, has now developed into a versatile payment platform that provides bill payment features, credit purchases, microinvestments, and insurance services. OVO leverages strategic partnerships with e-commerce and retail to expand its user reach, while providing lending and investment services (Susilo et al., 2019). DANA focuses on cross-platform integration, including transportation payments, e-commerce, and public services, with a strategy to strengthen transaction security based on biometric technology (Amelia et al., 2022).

Meanwhile, LinkAja is working on the financial inclusion market by penetrating the SOEs, MSMEs, and non-urban segments, as well as expanding services to remittances and QRIS-based payments (Yudhistira et al., 2021). From these developments, it can be seen that fintech innovation in Indonesia is inseparable from the acceleration of digital payment adoption. Digital payments function as a gateway that accustomed people to non-cash transactions, while expanding cross-selling opportunities for other digital financial products. This synergistic relationship strengthens the national digital business ecosystem, encourages transaction efficiency, and improves financial literacy in the community.

3.2. The Role of Fintech in the Digital Business Ecosystem and the Challenges

the national digital business ecosystem. The integration of fintech services with strategic sectors such as e-commerce, logistics, online transportation, and micro, small, and medium enterprises (MSMEs) creates connectivity that improves transaction efficiency and expands market reach. In e-commerce, digital wallets (e-wallets) simplify the payment process, reduce transaction fees, and speed up purchase confirmation (Rasyid, 2023). In the logistics sector, digital payment integration supports faster order tracking and processing systems, thereby improving customer satisfaction. In online transportation services, fintech provides instant payment solutions and is integrated with promotional features, which encourages user loyalty.

The role of fintech is also very significant in driving financial inclusion. Through application-based payment and financing services, fintech provides access to capital and transactions to MSME actors who previously had difficulty getting services from conventional financial institutions (Manap et al., 2023). This not only expands the consumer base, but also helps MSMEs increase their competitiveness in the digital market. Another positive impact is increased customer loyalty. The integration between fintech and various business platforms allows for the implementation of more personalized loyalty programs, such as cashback, reward points, or special offers based on transaction history. This strategy not only increases user retention, but also drives higher transaction frequency and value. Thus, fintech not only functions as a financial service provider, but also as a key driver of operational efficiency, financial inclusion, and strengthening relationships between businesses and customers in Indonesia's digital ecosystem.

Although the digital payments ecosystem in Indonesia is growing rapidly, there are a number of challenges that need to be overcome in order for this transformation to run optimally. One of the main obstacles is the regulatory and policy aspects of the government. Rapid regulatory changes, particularly related to payment system standards and consumer protection, often demand immediate adjustments from service providers. In addition, coordination across institutions such as Bank Indonesia, the Financial Services Authority (*Otoritas Jasa Keungan* /OJK), and the Ministry of Communication and Information Technology is crucial to ensure harmonious policies that do not hinder innovation. Differences in the interpretation of rules at the regional level can also affect the consistency of implementation in the field (Kharisma, 2021).

Another aspect of concern is cybersecurity and the risk of fraud. Threats such as phishing, theft of personal data, and hacking of user accounts are still significant issues. Service providers are required to continuously improve their security infrastructure, including fraud detection and prevention systems, in order to anticipate increasingly sophisticated attack techniques. Failure to handle security incidents can lower the level of public trust in the digital payments ecosystem (Jović & Nikolić, 2022) In addition, there are barriers to adoption at the user and MSME actors. The low level of digital literacy in some communities makes them reluctant to abandon cash payment methods that are considered safer and easier to understand (Panigrahi & Rao, 2018). For MSMEs, obstacles can arise from limited infrastructure, device costs, and internet connectivity, especially in remote areas. Cultural resistance and cash transaction habits require consistent education, socialization, and incentive strategies so that the transition process to digital payments can take place more inclusively.

4. Conclusion

This study demonstrates that the rapid growth of fintech services in Indonesia, particularly digital payments, has significantly strengthened the national digital business ecosystem. The findings show that payment and lending segments dominate the fintech market, driven by mobile accessibility, integration with e-commerce and transportation platforms, and targeted marketing strategies. Digital payments act as a gateway, encouraging the adoption of other financial services such as digital lending, wealth management, and insurtech. Fintech integration enhances transaction efficiency, promotes financial inclusion for MSMEs, and fosters customer loyalty through personalized programs. Case studies of major providers like GoPay, OVO, DANA, and LinkAja illustrate practical applications of these synergies.

Despite these positive developments, several limitations remain. Regulatory uncertainty, fragmented policy implementation, and cybersecurity risks continue to challenge the sustainable growth of fintech. Additionally, low digital literacy and infrastructural gaps in rural areas limit the inclusive adoption of digital financial services. The study has important theoretical and practical implications. It highlights fintech's role as a catalyst for digital ecosystem development, operational efficiency, and financial inclusion, offering insights for policymakers and business strategists to create supportive regulations, robust security frameworks, and targeted educational programs.For future research, scholars are encouraged to explore the adoption dynamics in underrepresented rural and low-literacy populations, assess long-term impacts of fintech integration on MSME growth, and investigate emerging technologies such as blockchain and AI in enhancing service security and user trust. Longitudinal studies could provide deeper understanding of how fintech evolution shapes broader economic and social outcomes in Indonesia.

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