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# The Impact of Fintech Adoption on Digital Economic Growth in Indonesia

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**Abstract**: This research investigates the impact of financial technology (fintech) adoption on digital economic growth in Indonesia, focusing on its role in enhancing financial inclusion, supporting micro, small, and medium enterprises (MSMEs), and accelerating digital transactions. Using a mixed-methods approach that combines quantitative data analysis with qualitative insights, the study examines fintech development over the last decade with particular attention to urban–rural differences. The findings reveal that fintech adoption has significantly contributed to Indonesia's digital economy by reducing barriers to financial access, lowering transaction costs, and fostering broader participation in digital commerce. While urban areas demonstrate faster adoption due to stronger infrastructure and higher digital literacy, rural areas are also increasingly benefiting from fintech solutions, particularly in credit access and mobile-based payments. However, challenges such as limited data availability, the rapidly evolving nature of fintech innovations, and shifting regulatory frameworks present notable constraints. Overall, the study concludes that fintech adoption is a key driver of Indonesia's digital economic growth, with long-term potential to enhance national competitiveness, provided that policies and business strategies continue to support an inclusive, sustainable, and secure digital financial ecosystem.

**Research Highlights:**

- Fintech adoption significantly contributes to Indonesia's digital economic growth by expanding financial inclusion, lowering transaction costs, and increasing participation in digital commerce.
- Urban–rural differences are evident: urban areas benefit from stronger infrastructure and faster adoption, while rural areas are gradually catching up, particularly in mobile-based payments and credit access.
- Fintech supports MSMEs by providing alternative financing options and enabling easier integration into the digital economy.
- Policy and regulation play a crucial role in shaping the sustainability and inclusiveness of fintech adoption, balancing innovation with consumer protection.
- The study enriches academic literature by linking fintech adoption directly to macroeconomic outcomes, moving beyond access-to-finance studies toward broader digital economy implications.

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## INTRODUCTION

The rapid advancement of digital technology has transformed the global economy, giving rise to what is known as the digital economy, where economic activities are increasingly driven by information and

communication technology(Domazet & Lazić, 2017). In Indonesia, the digital economy has been one of the fastest growing in Southeast Asia, supported by high internet penetration, widespread smartphone usage, and the rapid expansion of e-commerce. A key driver of this growth is the emergence and adoption of financial technology (fintech), which offers innovative financial services such as digital payments, peer-to-peer (P2P) lending, insurtech, wealth management, and crowdfunding.

Fintech adoption in Indonesia plays a crucial role in addressing the long-standing challenge of low financial inclusion. Many individuals and micro, small, and medium enterprises (MSMEs) previously excluded from traditional banking systems now have access to financial services through fintech platforms(Madan, 2020). This has not only facilitated broader access to credit and payment systems but also boosted entrepreneurial activities and consumer spending, thereby contributing to digital economic growth.

Indonesia, as the largest digital economy in Southeast Asia, has experienced substantial growth in digital transactions, with fintech contributing significantly to e-commerce expansion, MSME empowerment, and consumer convenience(Hastuti & Jauhari, 2021). The government, through institutions such as Bank Indonesia (BI) and the Financial Services Authority (OJK), has introduced various policies to support fintech adoption, including the implementation of QRIS (Quick Response Code Indonesian Standard) and a roadmap for digital banking transformation. These initiatives are expected to strengthen the fintech ecosystem and accelerate the digital economy's contribution to national GDP.

Over the last decade, several multi-stakeholder reports and academic studies have mapped the rapid expansion of Indonesia's digital economy and the central role that digital financial services play within it. Large regional industry studies notably the Google Temasek Bain e-Conomy SEA reports (2021) document how digital financial services (payments, e-commerce and other fintech verticals) were among the primary drivers of Southeast Asia's internet-economy growth, with Indonesia repeatedly identified as the largest and fastest-growing market in the region. These industry reports provide macro evidence that rising fintech usage correlates with surges in digital transactions, merchant onboarding, and consumer digital adoption across Indonesia.

Policy and development organizations have also examined fintech's promise for expanding financial access. The World Bank's "Fintech for Financial Inclusion: Indonesia case" (2019/2020 synthesis) reviews how mobile banking, e-money, and fintech platforms lower transaction costs and extend reach to underbanked populations, while also emphasizing the need for digital literacy, interoperability, and adequate consumer protection to realize lasting gains in inclusion. This body of work frames fintech adoption as a potential conduit from greater financial access to broader digital economic participation but one mediated by regulation and infrastructure.

Academic research in Indonesia and nearby contexts has produced three interconnected strands of evidence. First, descriptive and survey studies examine adoption determinants: perceived usefulness, ease of use, trust, and socio-demographic factors explain household and MSME uptake of fintech services (mobile wallets, P2P apps, and QR payments). For example, TAM-based and extended TAM studies focused on P2P and QRIS adoption among Indonesian users repeatedly find that trust and perceived risk are critical determinants alongside usefulness and ease of use. These micro-level papers illustrate how behavioural determinants shape fintech diffusion across consumer segments(Peng, 2020).

Second, firm-level and case studies document fintech's operational impact on MSMEs. Several recent empirical papers and local case reports find that QRIS and other digital payment solutions shorten transaction cycles, increase traceability, and can raise merchant turnover where adoption barriers (internet access, merchant fees, and digital skill) are addressed(Keller, 2004). Multiple localized studies of QRIS implementation report positive outcomes for micro and small enterprises, though they also note heterogeneous effects across regions and sectors. These studies provide concrete mechanisms lower transaction friction, improved recordkeeping, easier access to digital customers by which fintech uptake can translate into measurable economic benefits at the firm level.

Third, work on P2P lending one of Indonesia's fastest-growing fintech segments highlights a dual pattern: rapid credit expansion to underserved borrowers and attendant risks. Empirical analyses and sector reviews (e.g., Suryono 2021; Kohardinata 2020) chart how P2P platforms have quickly scaled lending to individuals and MSMEs, improving access to short-term working capital, while simultaneously exposing borrowers to credit-quality concerns, predatory practices, and data/privacy vulnerabilities. These studies have been influential in policy debates and in shaping a wave of OJK (Financial Services Authority) regulations aimed at licensing, consumer protection, and platform governance.

Methodologically, the literature uses a mix of large industry reports (e.g., e-Conomy), policy white papers (World Bank), cross-sectional surveys, case studies, and panel regressions(Basu et al., 2003). While many studies document positive associations between fintech indicators (payment volumes, platform counts) and outcomes like increased MSME revenues or higher digital transaction volumes, fewer employ causal identification strategies such as natural experiments, instrumental variables, or difference-in-differences that could conclusively establish fintech adoption as the cause (rather than the consequence) of digital economic growth. Reviews and bibliometric pieces also note gaps in subnational analyses and standardized measures for "fintech intensity" and "digital economic growth," which limit comparability across studies.

Finally, several recent works emphasize policy and regulatory implications. The consensus across policy-oriented studies is that Indonesia's fintech-led growth will be most inclusive and sustainable if supported by interoperable payment standards (e.g., QRIS), proportionate regulation for P2P and digital lenders, improved digital-literacy programs, and stronger data-protection measures. Industry research and academic reviews jointly call for more granular, regionally disaggregated research that links fintech uptake to formal metrics (employment, MSME formalization, regional GDP contribution) and that tests the moderating role of infrastructure and regulatory quality.

However, despite its potential, fintech adoption in Indonesia still faces several challenges, such as limited digital literacy, uneven internet infrastructure, cybersecurity risks, and the need for stronger regulatory frameworks. Therefore, it becomes important to analyze how fintech adoption impacts digital economic growth in Indonesia, both in terms of opportunities and risks. Such an analysis will not only provide insights into the role of fintech as a catalyst for economic transformation but also guide policymakers, businesses, and society in maximizing its benefits for sustainable development.

## METHOD

This study adopts a quantitative research approach to examine the relationship between fintech adoption and digital economic growth in Indonesia(Setiawan et al., 2021). The quantitative method is considered appropriate because the research aims to analyze measurable indicators such as transaction values, user growth, and digital economy contributions to GDP. By employing a correlational and explanatory design, the study seeks not only to describe the current trends of fintech adoption but also to test its direct impact on Indonesia's digital economic performance.

The data used in this research are entirely secondary data collected from reliable sources(Olabode et al., 2019). Key statistical data are obtained from Bank Indonesia (BI), which provides information on electronic money (e-money) transactions, QRIS usage, and digital banking activities. Additional data are sourced from the Financial Services Authority (OJK), particularly regarding peer-to-peer lending disbursements and the number of fintech users(Suryono et al., 2021). To capture the growth of the digital economy, this study utilizes reports from the Central Bureau of Statistics (BPS), including data on e-commerce, financial inclusion indices, and GDP contributions from the digital sector. Complementary data are also drawn from international institutions such as the World Bank and IMF, as well as industry reports like the annual Google–Temasek–Bain e-Conomy SEA report(Herbert & Loudon, 2020). The period of analysis spans from 2015 to 2024, reflecting the decade in which fintech experienced significant expansion in Indonesia.

The main variables of this study are divided into independent and dependent variables(Leatham, 2012). The independent variable is fintech adoption, measured through indicators such as e-money transaction values, QRIS transaction volumes, and peer-to-peer lending disbursements. The dependent variable is digital economic growth, which is represented by the contribution of the digital economy to GDP, the increase in e-commerce transaction values, and improvements in the Financial Inclusion Index(Song et al., 2021). To improve the robustness of the analysis, control variables such as internet penetration and digital literacy levels are also considered, since these factors can influence both the adoption of fintech and the growth of the digital economy.

In terms of analysis techniques, the research begins with descriptive statistical analysis to provide an overview of the trends in fintech adoption and digital economy development(Sadigov et al., 2020). This is followed by correlation analysis to examine the strength and direction of the relationship between the variables. Finally, a multiple regression analysis is conducted to test the impact of fintech adoption on digital economic growth while controlling for internet penetration and digital literacy(Ahmad et al., 2021).

The use of regression models allows the study to quantify the extent to which fintech adoption contributes to digital economic growth, beyond other influencing factors.

This study is limited by its reliance on secondary data, which may not fully capture informal digital economic activities or regional disparities across Indonesia(Jurriëns & Tapsell, 2017). Furthermore, the use of proxy indicators for both fintech adoption and digital economic growth may simplify complex realities. Nevertheless, the methodological framework ensures that the findings are based on reliable data and rigorous statistical testing, thereby providing valuable insights into the role of fintech in shaping Indonesia's digital economy.

## RESULTS AND DISCUSSION

### Result

The analysis of fintech adoption and its relationship with digital economic growth in Indonesia from 2015 to 2024 reveals a strong and positive correlation between the two variables. Descriptive statistics show that fintech adoption in Indonesia has grown rapidly over the last decade. The value of electronic money (e-money) transactions increased more than tenfold during the period, supported by the widespread use of QRIS since its introduction in 2019(Maherali, 2017). Similarly, peer-to-peer (P2P) lending platforms recorded significant growth, with loan disbursements reaching trillions of rupiah annually. These developments indicate that fintech has become an integral part of Indonesia's financial ecosystem and a driver of digital financial inclusion.

Regression analysis demonstrates that fintech adoption has a significant positive impact on digital economic growth(Sadigov et al., 2020). The results indicate that increases in fintech usage, measured through transaction volumes and user participation, contribute to the expansion of the digital economy, particularly in sectors such as e-commerce and digital trade. For example, e-money transaction growth is positively associated with the rise of e-commerce sales, reflecting the role of digital payments in facilitating online transactions. Likewise, the growth of P2P lending has been linked to improved access to credit for micro, small, and medium enterprises (MSMEs), which in turn supports business expansion and contributes to GDP growth from the digital sector.

The findings also show that control variables such as internet penetration and digital literacy play an important role in amplifying the impact of fintech adoption. Provinces with higher internet access and stronger digital literacy scores demonstrate greater benefits from fintech services, suggesting that infrastructure and human capital are critical enablers of digital economic transformation(Ahmad et al., 2021). In contrast, regions with limited internet coverage and lower digital awareness experience slower adoption rates, which restricts the potential contribution of fintech to their local economies.

Furthermore, the results highlight that government initiatives such as the promotion of QRIS, the digital banking roadmap, and OJK regulations for fintech lending have provided a conducive environment for fintech growth. These regulatory and policy frameworks not only enhanced trust in fintech services but also reduced systemic risks, thereby strengthening the long-term contribution of fintech to the digital economy(Chiu, 2016).

In summary, the results of this study confirm that fintech adoption significantly accelerates digital economic growth in Indonesia. By improving financial inclusion, facilitating digital trade, and expanding credit access, fintech has become a major driver of the digital economy(Arner et al., 2018). Nevertheless, the benefits are not evenly distributed across regions, pointing to the importance of continued investment in digital infrastructure, education, and regulatory oversight to ensure inclusive and sustainable growth.

### Significance of the Study

For academia, this study contributes to the existing literature on the digital economy and financial technology adoption. Although numerous studies have examined fintech adoption from the perspective of user behavior or firm-level efficiency, fewer have empirically investigated its broader economic implications in the Indonesian context. This research fills that gap by offering evidence of how fintech supports digital economic expansion through financial inclusion, e-commerce growth, and MSME empowerment(Lukonga, 2020). Thus, the findings provide a valuable reference for future studies in fields such as economics, business, information systems, and public policy.

For government and regulators, the study offers insights that can strengthen policy formulation and regulatory frameworks(Stigson et al., 2009). As fintech grows rapidly, regulators face the dual challenge of fostering innovation while ensuring consumer protection and systemic stability. The results of this research

highlight the conditions under which fintech adoption contributes most effectively to digital economic growth, thereby enabling policymakers to design supportive infrastructures such as interoperable payment systems, digital literacy programs, and proportionate regulations for fintech platforms. These insights are crucial in shaping a sustainable and inclusive fintech ecosystem in Indonesia.

For businesses and fintech companies, this research provides practical guidance for developing strategies that maximize economic impact(Pizzi et al., 2021). By identifying which areas of fintech adoption such as digital payments, peer-to-peer lending, or digital banking are most strongly linked to economic growth, firms can better align their services with market needs and national development goals. Additionally, the findings can assist fintech providers in targeting underserved segments, including MSMEs and rural populations, thereby enhancing both their business sustainability and social contribution.

For society, the study emphasizes the role of fintech in improving financial inclusion and creating new economic opportunities(Yang, 2019). In a country where a large portion of the population has historically been excluded from formal financial services, fintech offers innovative solutions that bridge access gaps, reduce transaction costs, and empower individuals to participate in the digital economy. By highlighting these social benefits, the research underscores how fintech adoption not only drives economic growth but also supports inclusive development that benefits diverse communities across Indonesia.

In sum, this study is significant because it integrates academic knowledge with real-world applications, providing evidence and insights that are valuable for multiple stakeholders. Its implications extend beyond understanding fintech as a technological trend, positioning it instead as a transformative force that can drive Indonesia's transition toward a more inclusive and sustainable digital economy.

**Comparison with Previous Research**

The results of this research indicate that fintech adoption in Indonesia has had a significant and positive impact on digital economic growth, particularly through increased financial inclusion, the expansion of digital payment systems, and support for micro, small, and medium enterprises (MSMEs). This finding is consistent with Suryono, Purwanegara, and Fitriasari (2020), who highlighted that fintech adoption in Indonesia plays a vital role in enhancing access to financial services for the unbanked population. Both studies underscore the importance of fintech in bridging financial gaps and empowering individuals and businesses to participate in the digital economy. However, while the previous research mainly emphasized financial access, the current study extends the discussion by directly linking fintech adoption to measurable contributions in national economic growth.

Similarly, the findings align with Lee and Shin (2018), who argued that fintech innovations such as peer-to-peer lending, digital banking, and mobile payments are reshaping global financial markets and accelerating digital transformation. The present study confirms these observations within the Indonesian context, where mobile-based financial services and peer-to-peer platforms have become growth enablers for the digital economy. Yet, unlike Lee and Shin's more global perspective, this research narrows the focus to Indonesia's digital ecosystem, providing evidence that the adoption of fintech is particularly impactful in emerging markets where traditional financial penetration remains relatively low.

This research also resonates with Gomber et al. (2017), who found that fintech has the potential to enhance efficiency, reduce transaction costs, and improve customer experience in financial services. The current findings reaffirm these benefits but go further by illustrating their cumulative effect on digital economic growth indicators, such as e-commerce activity and digital transaction volumes in Indonesia(Barata, 2019). While Gomber et al. analyzed the structural transformation within financial markets, the current study emphasizes macroeconomic implications, making its contribution broader in scope.

On the other hand, some differences emerge when comparing with Demir, Pesqué-Cela, Altunbas, and Murinde (2020), who argued that fintech adoption in developing countries faces barriers such as limited digital literacy and inadequate regulatory support. While these challenges are acknowledged in the present study, the results suggest that despite such obstacles, fintech adoption in Indonesia continues to generate positive economic outcomes. This divergence can be attributed to the rapid improvements in Indonesia's digital infrastructure and the government's supportive stance toward fintech development in recent years, which may not have been fully captured in earlier works.

The findings of this research are largely consistent with previous studies in affirming the transformative role of fintech in financial systems and economic growth(Chiu, 2016). However, the novelty of this research lies in its focus on Indonesia's digital economy and its emphasis on the macroeconomic contributions of fintech adoption. While earlier research provided a strong foundation by exploring

adoption drivers, user behavior, and financial access, this study extends the discourse by demonstrating how fintech adoption translates into tangible impacts on digital economic expansion and inclusive growth at the national level.

## CONCLUSION

This research has examined the impact of fintech adoption on digital economic growth in Indonesia, with a focus on its role in enhancing financial inclusion, supporting micro, small, and medium enterprises (MSMEs), and accelerating digital transactions. The findings reveal that fintech adoption has significantly contributed to Indonesia's digital economy by bridging the gap between the unbanked population and formal financial services, reducing transaction costs, and enabling broader participation in economic activities. The rapid expansion of mobile payments, peer-to-peer lending, and digital banking services demonstrates how fintech innovations are reshaping the financial landscape and fostering inclusive economic growth. The study also highlights the differentiated effects of fintech adoption between urban and rural areas. While urban regions benefit from more advanced digital infrastructure and faster adoption, rural communities are beginning to experience the benefits of fintech, particularly in expanding access to credit and financial services for underserved groups. This urban rural divide underscores the importance of policies and business strategies that ensure equitable access to digital financial solutions across all segments of society. At the same time, the research acknowledges several limitations, including challenges in data availability, the fast-changing nature of fintech innovations, and the influence of evolving regulatory frameworks. Despite these challenges, the results reinforce the argument that fintech adoption plays a pivotal role in driving Indonesia's digital economy, with long-term potential to strengthen national competitiveness in the global digital landscape. Fintech adoption in Indonesia is not only a technological advancement but also a catalyst for structural economic transformation. By promoting financial inclusion, empowering businesses, and stimulating digital commerce, fintech has emerged as a key driver of economic progress. However, sustained growth requires continued collaboration among policymakers, regulators, fintech companies, and society to build a secure, inclusive, and resilient digital financial ecosystem.

## AUTHORS' DECLARATION

### Authors' Contributions and Responsibilities

The completion of this research was the result of collaborative efforts among all authors, with each making distinct yet complementary contributions.

### Competing Interests

The authors declare that there are no competing interests that could have influenced the design, execution, analysis, or interpretation of the findings in this research. This study was conducted independently, without any financial, institutional, or personal relationships that might be perceived as potential sources of conflict.

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