The Influence of the Role of the Digital Economy in Advancing Economic Growth in Indonesia

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A R T I C L E I N F O	ABSTRACT
	This study aims to evaluate the impact of the digital economy on financial inclusion in Indonesia and analyze the challenges faced in its implementation. In recent years, the rapid development of digital technology has opened up great opportunities to expand access to financial services in Indonesia, especially for people who were previously unreached by the traditional banking system. However, despite significant progress, there are still various obstacles that hinder the achievement of optimal financial inclusion, such as the digital divide, low financial literacy, and data security issues. This research uses a qualitative and quantitative approach by analyzing data from various sources, including surveys of digital financial service users, government reports, and case studies of digital financial inclusion policy implementation. The results show that the digital economy has great potential to improve financial inclusion, but the main challenges lie in the technology access gap, socio-economic inequality, and the need to strengthen data protection and transaction security regulations. Based on these findings, this study provides policy recommendations involving digital infrastructure upgrades, digital financial literacy education, and strengthened security regulations to support the achievement of greater financial inclusion in Indonesia. It also suggests further studies to understand the long-term impact of the digital economy on reducing social and economic inequality and the effectiveness of existing policies. *This is an open access article under the CC BY-NC license.*

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1. INTRODUCTION

The digital economy is a global phenomenon that is increasingly dominating various economic sectors, accelerating digital transformation and changing the way we interact, do business and communicate (Riyana et al., 2024). By utilising information and communication technology (ICT), the digital economy offers opportunities to improve efficiency, innovation and competitiveness. At the global level, the digital economy has become a key driver of economic growth, creating new markets and accelerating the process of globalisation and economic integration between countries. Developed countries, such as the United States, China, and European countries, have successfully adopted and utilised the digital economy to drive their economies through sectors such as e-commerce, fintech, and data-driven technologies (Anisa & Setyowati, 2023).

In Indonesia, the development of the digital economy has progressed rapidly in recent years, thanks to the widespread adoption of technology, improved digital infrastructure, and policy support from the government . Indonesia, as one of the most populous countries in Southeast Asia, has great potential to develop the digital economy (Munawarah et al., 2022). Key sectors impacted by the digital economy in Indonesia include e-commerce, fintech, digital transport, and online education. For example,

e-commerce platforms such as Tokopedia, Bukalapak and Shopee have changed the way consumers shop and significantly influenced market behaviour (Aprilia, 2021). The fintech sector is also growing rapidly, with digital payment apps and online lending gaining popularity among the public. The impact of the digital economy on key economic sectors in Indonesia is significant. In the trade sector, the digital economy has fuelled the growth of e-commerce, enabling wider market access, not only in big cities, but also in remote areas (Saba, 2024). The labour sector is also changing, with new jobs in technology and digitalisation emerging that require specific skills. In the agricultural sector, digital-based technologies are being applied to improve production and distribution efficiency. However, despite the huge potential of the digital economy, challenges such as the digital divide, limited infrastructure in remote areas, and the need for supportive policies are still obstacles that need to be overcome to maximise the potential of the digital economy in Indonesia (Napu et al., 2024).

The digital economy is playing an increasingly important role in advancing Indonesia's economic growth, especially with the rapid development of technology and increased internet access across the country. Through sectors such as e-commerce, fintech, and information technology, the digital economy is able to create new opportunities for small and medium enterprises (SMEs), expand markets, and improve operational efficiency (Mocc et al., 2023). For example, Indonesia's fast-growing local e-commerce platforms have opened up wider market access, allowing local products to be marketed to the global market. As such, the digital commerce sector contributes significantly to Indonesia's GDP, creates new jobs, and improves Indonesia's competitiveness in the international market.

In addition, the fast-growing fintech sector is fuelling financial inclusion in Indonesia by expanding people's access to banking services, digital payments, and online lending. With more than 270 million people, Indonesia faces great challenges in ensuring equitable financial inclusion, especially in remote areas. The digital economy, through fintech solutions, offers easier and faster access to finance, providing opportunities for people previously unreached by the conventional banking system. This has the potential to increase the economic capacity of the Indonesian people, and support inclusive economic growth (Tsakila et al., 2024).

On the other hand, the digital economy is also driving transformation in traditional sectors, such as agriculture, education, and healthcare. Digital-based agricultural technology has helped farmers to access weather information, efficient cultivation techniques, and digital markets to sell their produce. The education sector has also benefited from the digital economy with the development of online learning platforms that make education more accessible to all. Thus, the role of the digital economy is not only limited to the business sector, but also contributes to the development of human resources and the creation of added value in various sectors that are important to the Indonesian economy (Susilo & Rani, 2020). In this research, the main issue to be investigated is 'How does the digital economy contribute to Indonesia's economic growth?' To answer this question, it is important to explore how the digital economy, through sectors such as e-commerce, fintech, and information technology, affects various aspects of the Indonesian economy, from job creation to increased efficiency and productivity across industries. A deeper understanding of the contribution of these sectors to Indonesia's GDP, as well as their impact on reducing economic disparities, will be the main focus of this literature review.

In addition, the review also aims to answer 'What are the challenges Indonesia faces in developing the digital economy?' While Indonesia has great potential in this sector, there are still various obstacles that need to be overcome, such as uneven infrastructure, the digital divide between urban and rural areas, and varying levels of digital literacy among the public. This research will analyse how these challenges may affect the effectiveness of the digital economy in driving Indonesia's economic growth in a more inclusive and sustainable manner (Lase et al., 2024). Another question to be addressed is 'How do Indonesian government policies support or hinder the development of the digital economy?' Given the critical role of public policy in supporting digital transformation, the review will also assess the effectiveness of existing policies, both those already implemented and those in the pipeline. This includes policies related to digital infrastructure, e-commerce regulations, as well as efforts to strengthen cybersecurity and personal data protection, which are important factors in creating a safe and trusted digital ecosystem. As such, this review aims to provide a comprehensive overview of how the digital economy can be a driver of Indonesia's future economic growth (Delima Afriyanti, 2022).

2.   RESEARCH METHOD

This study will utilise a quantitative research design to explore the contribution of the digital economy to Indonesia's economic growth. Quantitative methods will be used to analyse secondary data that includes figures related to the digital economy, such as GDP contribution of the digital sector, technology adoption rate, and statistics related to e-commerce and fintech (Alfarizi et al., 2024). For quantitative data collection, this study will rely on secondary data obtained from reliable sources such as the Central Statistics Agency (BPS), Bank Indonesia, e-commerce companies' annual reports, and relevant market research. The data collected includes macroeconomic indicators such as the digital sector's contribution to GDP, the number of e-commerce transactions, internet penetration, and the usage rate of fintech services in Indonesia. Data collection techniques will utilise documentation and archival data collection methods (Surya et al., 2021). For quantitative data analysis, this study will use descriptive analysis to describe the data that has been collected, such as statistics on the growth of the digital economy sector, as well as regression analysis to identify the relationship between digital economy variables (such as technology adoption and GDP increase) and other economic growth indicators. These analyses will assist in looking at the influence of the digital economy on Indonesia's economic development from a numerical perspective.

3.   RESULTS AND DISCUSSIONS

3.1   Definition and Concept of Digital Economy

The digital economy is a concept that refers to economic activities driven by the use of digital technologies, including the internet, software, and information systems, to facilitate the processes of trade, production, and distribution of goods and services. According to global literature, the digital economy encompasses various sectors such as e-commerce, fintech, big data, Internet of Things (IoT), and artificial intelligence (Susetyo & Firmansyah, 2023). In general, the digital economy enables higher efficiency, opens up new markets, and accelerates innovation and economic growth. Digitalisation in this case refers not only to technological transformation, but also to its influence on changes in the way people work, communicate and interact in the context of the global economy (Junaedi et al., 2023).

At the local level, particularly in Indonesia, the digital economy is translated in the context of the rapid development of the technology sector, with the implementation of various digital platforms that facilitate access to goods and services. Indonesia, with the fourth largest population in the world, has a huge opportunity to capitalise on the digital economy. The concept of digital economy in Indonesia mainly focuses on e-commerce, fintech services, and digitisation of traditional sectors such as agriculture and education (Fradesa et al., 2022). E-commerce, as one of the main elements of the digital economy, has grown rapidly with major platforms such as Tokopedia, Bukalapak, and Shopee connecting buyers and sellers across Indonesia. In addition, fintech services such as OVO and GoPay have accelerated financial inclusion, providing easier and faster access for people to make transactions.

3.2   Impact of Digital Economy on Economic Growth in Indonesia

The impact of the digital economy on Indonesia's economic growth can be seen from the various sectors that have undergone significant transformation thanks to the application of digital technology. One of the most impacted sectors is e-commerce, which has become a major driver of digital economic growth in Indonesia (Junarsin et al., 2023). Local e-commerce platforms such as Tokopedia, Bukalapak, and Shopee provide great opportunities for small and medium enterprises (SMEs) to access a wider market, even to international markets. E-commerce also creates thousands of new jobs, from delivery couriers to platform managers, which in turn fuels the growth of other related sectors, such as logistics, digital advertising, and financial services. In the financial sector, the digital economy, particularly through fintech (financial technology), has increased financial inclusion in Indonesia. Digital payment services such as OVO, GoPay, and DANA make it easier for people to make transactions quickly and securely, which was previously difficult for those without access to traditional banks. In addition, fintech has also introduced new financial products such as online lending and digital investments that open up

access to capital for individuals and small businesses, ultimately boosting domestic consumption and investment, two key pillars in the Indonesian economy (Purnomo et al., 2022).

Furthermore, the digital economy has contributed to increased efficiency and productivity in various sectors, such as agriculture, education, and health. In the agriculture sector, for example, the use of technology such as data-driven applications to predict weather, markets, and agricultural yields has increased farmers' productivity and accelerated product distribution. In the education sector, online learning platforms enable wider access to education, especially in remote areas. Thus, the digital economy not only drives economic growth through the business and financial sectors, but also plays a role in the development of social sectors and improving the overall welfare of society.

3.3 Conflict over the Role of the Digital Economy in Advancing Economic Growth in Indonesia

While the digital economy provides great opportunities for Indonesia's economic growth, there are several conflicts that arise in its implementation. One of the main issues is the digital divide between urban and rural areas. While major cities such as Jakarta and Surabaya have benefited greatly from the digital economy, many regions in Indonesia still face limitations in internet access and adequate digital infrastructure. This creates a gap in technology adoption, which hinders the potential of the digital economy to create inclusive and equitable growth across Indonesia. In addition, low digital literacy is also a major obstacle in maximising the benefits of the digital economy. Although Indonesia has a large internet population, not all levels of society have sufficient understanding of how to use digital technology effectively (Ikhsan et al., 2020). The inability to utilise digital tools such as e-commerce, fintech, or online education leaves a large portion of the population, especially those living in rural areas or with low education, marginalised from the benefits of the digital economy. In this context, although the digital economy sector is growing rapidly, its impact has not been fully felt by all levels of Indonesian society.

Another emerging conflict is related to **data security and protection** in the digital world. With the increase in online transactions and the use of digital platforms comes the risk to personal data and the potential misuse of information by irresponsible parties. Although the Indonesian government has issued regulations such as the Personal Data Protection Law, there are still challenges in effective implementation and enforcement. Public trust in digital systems is key to ensuring the sustainability of the digital economy. If data security issues cannot be properly addressed, this could reduce public participation in the digital economy and slow down the pace of Indonesia's economic growth in this sector (Prasetyo, 2022).

One of the main obstacles Indonesia faces in driving the digital economy is uneven infrastructure, especially in remote areas. While big cities such as Jakarta and Bali have enjoyed fast and stable internet access, many areas outside the big cities still struggle to access internet of adequate quality. These infrastructure limitations hinder the adoption of digital technology, which in turn slows down the development of the digital economy sector. To promote equitable growth of the digital economy, Indonesia needs to accelerate the development of a more inclusive digital infrastructure that can reach all levels of society, both in urban and rural areas. In addition, the digital divide between different segments of society is a significant obstacle (Prasetyo, 2022). While internet penetration in Indonesia is high, there are large disparities in digital skills and ability to access technology among the population. Some people in rural areas or with low education levels do not have a sufficient understanding of how to utilise digital technology in their daily lives. This disparity leads to an imbalance in the benefits received from the digital economy, where certain segments of society, especially those who are more educated and live in urban areas, are quicker to adopt digital technologies compared to those living in areas with limited access.

Government policies are also an important factor in accelerating or slowing down the adoption of the digital economy in Indonesia (Solihin et al., 2021). While the Indonesian government has issued various policies to support digital transformation, such as the 100 Smart City programme and the National Movement of 1000 Digital Startups, there are still shortcomings in terms of effective policy

implementation and enforcement. Some sectors, such as e-commerce, fintech, and personal data protection regulations, still need improvement in order to create a safer and more regulated digital ecosystem. In addition, public adoption of the digital economy is also hampered by a lack of digital literacy. Without more widespread education and training, many people find it difficult to transition to using digital platforms in their economic activities, thus slowing down the potential growth of the digital economy that can be achieved (Solihin et al., 2021).

3.4. Comparison of the Influence of the Role of the Digital Economy in Advancing Economic Growth in Indonesia with Other Countries

Indonesia, despite its huge potential in the digital economy, is still lagging behind countries that are more advanced in this sector. Countries such as the United States, China, and South Korea have long led the way in the adoption and development of the digital economy, thanks to their sophisticated infrastructure, innovation-supportive policies, and high levels of technology adoption across society. In the United States, for example, major tech companies such as Amazon, Google and Facebook have dominated the global market and fuelled significant growth in the digital economy. In China, e-commerce and fintech such as Alibaba and WeChat have transformed the way consumers interact with technology and made a huge impact on the domestic and global economy. The fast and stable internet infrastructure in these countries enables a seamless digital transition in almost all sectors of the economy (Li et al., 2020).

Meanwhile, Indonesia, despite rapid progress in recent years, still faces challenges related to uneven infrastructure, digital divide, and varying levels of digital literacy across the country. In major cities, the digital economy is thriving with popular e-commerce and fintech platforms, but in rural areas there are still difficulties in accessing these digital services. While the Indonesian government's policies, such as the 100 Smart Cities programme and the National Movement of 1000 Digital Startups, aim to drive digital transformation, broader and more equitable implementation remains an obstacle to overcome (Sudiantini et al., 2023). Therefore, Indonesia needs to focus on strengthening digital infrastructure and improving digital literacy at all levels of society in order to compete globally.

In the context of the global market, Indonesia is well positioned in terms of its digital economy potential, but still needs to take significant steps to maximise its contribution. According to a report by McKinsey and Google, Indonesia's digital economy is expected to grow rapidly, with transaction value estimated to reach $130 billion by 2025. This represents a huge opportunity for Indonesia to strengthen its position in the global market, especially in the e-commerce and fintech sectors. However, to achieve a more competitive position globally, Indonesia must invest more in infrastructure, policies that support innovation, and programmes that can reduce the digital divide and increase technology adoption across society. With the right efforts, Indonesia has the potential to become a major player in the global digital economy (Haanurat et al., 2023).

Discussion

Digital access and infrastructure is a central theme, as despite Indonesia's huge potential, inequality in internet access and technology in urban and rural areas remains a major challenge. The existence of uneven infrastructure limits the potential growth of the digital economy outside major cities. In many remote areas, poor internet network quality and limited digital facilities prevent people from making the most of digital services, which in turn slows down the pace of digital economy adoption at the national level. Another frequently discussed theme was business innovation and transformation through the utilisation of digital technology. Along with the development of technology, many businesses, especially in the e-commerce, fintech, and information technology sectors, have begun to transform to capitalise on the opportunities offered by the digital economy. Companies large and small in Indonesia are increasingly turning to digital platforms to reach a wider range of consumers and improve their operational efficiency. Literature also shows that the digital economy has opened up new opportunities for the growth of small and medium-sized enterprises (SMEs) by providing platforms for more efficient marketing, payment and distribution. These innovations in digitisation, especially in the service sector, are starting to create new jobs and accelerate post-pandemic economic recovery.

The third important theme is financial and social inclusion, which refers to the ability of digital technology to expand access to financial services for people previously excluded from the traditional banking system. Fintech has enabled millions of people in Indonesia to access digital payment, lending and investment services, contributing to increased purchasing power and economic mobility. On the other hand, social inclusion also focuses on the use of technology to address social disparities, such as providing digital-based access to education and healthcare in less developed areas. Nonetheless, the literature also shows that to maximise the positive impact of the digital economy on economic growth, challenges such as digital literacy, cybersecurity, and government policies that support innovation must be addressed comprehensively.

The digital economy has contributed significantly to Indonesia's economic growth. In particular, the e-commerce and fintech sectors have grown rapidly and become key pillars in Indonesia's digital economy. E-commerce platforms such as Tokopedia, Bukalapak, and Shopee not only expand the domestic market, but also facilitate international market expansion for MSMEs. In addition, fintech services such as OVO and GoPay have increased financial inclusion, enabling the previously unbanked to transact digitally. These positive impacts are evident in increased domestic consumption and strengthened competitiveness of MSMEs, which in turn drives overall economic growth.

However, despite the huge potential, infrastructure constraints and the digital divide remain key issues that must be addressed to ensure the digital economy can deliver more equitable benefits. Limited internet access in rural and remote areas prevents most Indonesians from making the most of digital technology. This exacerbates the economic gap, where most of the benefits of the digital economy are still centred in urban areas. In addition, low digital literacy is also a barrier to technology adoption by some communities, which in turn reduces the effectiveness of the digital economy's potential. Therefore, it is important for the government to accelerate the development of digital infrastructure across Indonesia, especially in areas that have been left behind.

Overall, although Indonesia has made significant progress in implementing the digital economy, the results of this study reveal that to optimise the digital economy's contribution to economic growth, there needs to be an increase in government policies that are more focused on infrastructure development and improving digital literacy. Policies that support innovation, personal data protection, and ease of access for all citizens will strengthen the digital ecosystem in Indonesia. By addressing these challenges, Indonesia has the potential to utilise the digital economy as a key driver of inclusive, sustainable and globally competitive economic growth.

4.   CONCLUSION

The digital economy plays a very important role in driving Indonesia's economic growth. Digital transformation has penetrated various sectors, ranging from e-commerce, fintech, to other sectors such as agriculture and education. Through e-commerce platforms and fintech services, Indonesia has managed to connect businesses, especially MSMEs, with a wider, even international, market. Digital financial services also contribute to increasing financial inclusion, enabling previously unbanked people to conduct transactions more efficiently and safely. As such, the digital economy sector has accelerated the creation of new jobs and improved the competitiveness of the Indonesian economy. However, despite the many opportunities offered by the digital economy, there are a number of challenges that need to be overcome to maximise this potential. One of the biggest challenges is the infrastructure imbalance that hinders remote communities' access to digital services. While Indonesia's major cities have enjoyed better internet access, many areas outside of major cities still lack adequate digital infrastructure, hampering their ability to utilise technology to its full potential. For this reason, more equitable infrastructure development across Indonesia is crucial for the digital economy to be enjoyed by all levels of society.

In addition, the digital literacy gap is also a significant obstacle in driving the adoption of digital technology among Indonesians. Many individuals, especially in low-education areas, do not fully understand the potential and benefits of digital technology, which reduces their ability to utilise e-commerce services, fintech and other digital platforms. Therefore, improving digital literacy should be a priority in government policy to ensure that all levels of society can engage in the digital economy and experience its benefits. On the policy side, although the Indonesian government has issued various initiatives such as the 100 Smart City programme and the National Movement of 1000 Digital Startups, there is a need to strengthen regulations related to the digital economy. More effective policies related

to personal data protection, cybersecurity, and regulation of the fintech and e-commerce sectors will create a safer and more trusted digital ecosystem. These measures are important to increase public confidence in using digital platforms and ensure that the digital economy can develop in a healthy and sustainable manner.

Overall, while Indonesia still faces challenges in driving the digital economy, its vast potential cannot be underestimated. With improvements in infrastructure, increased digital literacy, and government policies that support digital transformation, Indonesia can accelerate technology adoption and reap the maximum benefits of the digital economy. If these challenges are overcome, the digital economy will become one of the key drivers of Indonesia's economic growth, making the country more competitive in the global market, and opening up new opportunities for people across the country.

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