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Research Article

The Development of Indonesia's Fintech and Comparation with India in Terms of Complex Interdependence Theory and Digital Economy

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ABSTRACT

Economic issues has become one of the world's major problems, along with the economic crisis and distrust of banks. Not only in developed countries, but also in various developing countries of the world, such as Indonesia and India. Both countries are equally as developing countries with high numbers of people and informal workers, that have great opportunities in the digital economy. The research found that although India is the tech hub of Asia, while Indonesia can combine technology with the local economy through fintech programs. The existence of Fintech Indonesia is as much about increasing the use of technology as it is about bridging the challenges of the micro-economy. Reflected both in the Indonesian and Indian economies that seek not only to rely on commodities and natural resources but tried to move on to technology and the digital-based economy. At the same time also appears Fintech phenomenon is growing rapidly. The author will use qualitative descriptive methodology and the concept of digital economy also the complex interdependence theory. This research has aims to answer about opportunities and development of fintech in Indonesia compared to India. This study was chosen because of the need for the digital economy and the bigger hope of Fintech in the Indonesian economy, referring that happening in India.

Keywords: Complex Interdependence; Digital Economy; Fintech; India; Indonesian

1. INTRODUCTION

The emergence of the digital economy and financial technology (fintech) are both inevitable and unstoppable phenomena, in line with the needs of people who want easy access, speed of transactions and efficiency in the process (Gomber et al., 2017). Fintech is very much in tune with the times, which seek to minimise convoluted and non-transparent processes in order to maximise benefits for all parties (Arner et al., 2020). Meanwhile, the digital economy allows people and institutions to conduct a wide range of economic activities using only mobile devices, without having to meet in person. Infrastructure challenges, a lack of understanding of the financial system and the diverse conditions of the community are factors in the emergence of fintech and the digital economy (Dafri & Al-Qaruty, 2023). Both are new models and solutions compared to traditional financial transactions, which still face many challenges. This is because both fintech and the digital economy can basically be accessed by anyone anywhere at any time, in line with the trend that many people now like to do various things using devices and the Internet.

Reflecting the development of technology and information that strengthens interdependence among people, Indonesia, as one of the major economies in Southeast Asia, has great opportunities in the banking and finance industry. However, the number of people with access to and ownership of bank accounts is only 36%, leaving the remaining 120 million Indonesians unbanked. This is in contrast to the number of Indonesians connected to the internet, which reached 210 million in 2023, up from 188 million in 2019. Meanwhile, India, the world's first most populous country, is followed by China, is full of informal jobs and workers. In this country, the role of the private sector is quite large in contributing to India's economic growth and development in managing the country's economy. Even with the development of Fintech in India, the country's economy is growing rapidly and is expected to rival that of China, which reached 7.4% this year compared to 6.7% in 2017 (Virani & Pathak, 2024).

The presence of the digital economy and Fintech can provide opportunities for the 51% of the Indonesian population who do not have access to banks (Ventura, 2021), and can facilitate easy credit. There are still many Indonesians who have tended to rely more on traditional informal sources of credit, despite the high interest rates and security risks. Fintech in Indonesia has developed not only in the form of payment service providers, but also in lending, personal finance, retail investment, crowdfunding, remittances, financial research and financial comparison or aggregator sites. In addition, the digital economy has been widely used for online buying and selling and the use of electronic money (e-money) for various financial services.

The banking industry, on the other hand, has used technology and the internet to extend its services to customers in Indonesia through mobile and internet banking. Both of these service innovations, together with Indonesia's large population and size, have provided easy access to financial transactions and payments. There has also been a growing effort to streamline business and trade services, along with a trend towards online use through e-commerce providers (Iswardhana & Widiono Suyud, 2021). With the use of Internet banking and e-commerce, customers can conduct various transactions only through the Internet and gadgets anywhere and anytime without having to come to the bank office or business producer. Bank QNB Indonesia found that about 50% of its 60 million bank account holders have used internet and mobile channels (Syahadiyanti, 2018). This is in addition to the fact that today's global society is more interested and adaptable in using information technology and the Internet. Certainly, the financial, banking, business and retail sectors can see opportunities for collaboration and innovation. Payments and technology can work together to enhance customer transaction behaviour and provide secure, easy and low-cost payment services through technology. Fintech is expected to grow competitively in Indonesia, providing many options for people to transact safely and easily (Setiawan et al., 2021).

Based on these various findings, a research gap was found that although India is the tech hub of Asia, Indonesia can combine technology with the local economy through fintech programs. Novely from this research is to explain the existence of Fintech Indonesia is as much about increasing the use of technology as it is about bridging the challenges of the micro-economy. This research has a research question in the form of, "How can the opportunities and developments in the fintech sector improve the local economy in Indonesia as compared to India?"

2. RESEARCH METHOD

This research uses a descriptive qualitative methodology with a secondary approach in the form of a literature review. Descriptive qualitative methodology is used to explore in-depth information and provide a comprehensive explanation of the phenomenon (Silverman David, 2011). The collection and use of secondary data in the form of a literature review was used to gather data from various existing sources. This secondary data includes analysis of documents, journals and official reports from various stakeholders (Smith, 2016). News and articles from the mass media were also used to provide the latest information on the development of the digital economy and fintech. This approach was chosen because it allows researchers to get a broad and in-depth picture of the topic under study (Taylor et al., 2015).

This method was chosen to provide an in-depth understanding of the dynamics of the fintech in Indonesia, and to compare it with the situation in India. This approach allows the researcher to understand the complex context and dynamics in the development of the digital economy and fintech. The variables used in this study include *First*, the development of the digital economy, in the form of digital technology adoption, internet usage and the contribution of the digital economy to GDP. *Second*, the development of fintech, in the form of the number of fintech companies, the types of services offered, and the level of adoption of fintech by the public. *Third*, financial inclusion, in the form of public access to financial services, levels of financial literacy and use of fintech services.

The analytical techniques used in this research include identifying key themes and patterns that emerge from the data collected. This analysis helps to understand how different factors influence the development of the digital economy and fintech. Then, comparing the data obtained from Indonesia and India to identify differences and similarities in the development of the digital economy and fintech in both countries. Then, the findings are reconciled using the concepts of digital economy and complex interdependence theory to provide a deeper insight into the dynamics of fintech in Indonesia.

By using a descriptive qualitative methodology and a secondary approach of literature review, this research is able to provide a comprehensive explanation of the opportunities and development of the fintech sector in boosting the local economy in Indonesia compared to India. This approach also allows the researcher to identify key factors that influence the development of the digital economy and fintech, as well as provide specific policy recommendations to support the growth of this sector.

3. RESULTS AND DISCUSSION

3.1 The Fintech Development in Indonesia

Referring to the development of the Internet since the late 1990s, which became public domain and developed significantly in business interactions and consumption. It began in 2000, when banking and online finance, online shopping, online news and email began to appear on the Internet media in developed countries. Today, the Internet has evolved into a unified, interconnected global computer network that allows many companies to do business over the Internet. This has led to the globalisation of the world economy through the creation of free market capitalism, which means that everyone is connected and can buy and sell in cyberspace without restriction. In short, the Internet is a key component of the digital economy because it provides businesses, individuals and governments with an electronic network that allows them to create a virtual marketplace for goods and services that they did not have before.

The digital economy phenomenon is the latest development in the global economy, characterised by the collaborative use of the Internet and digital applications in business and trade transactions between companies or individuals. There are different patterns between the conventional digital economy, which can be said to be very different and has become a necessity for almost all companies to transform every business in the digital economy (Belozyorov et al., 2020). The main differences in the digital economy include a greater emphasis on collective data knowledge, the digitisation of systems, the existence of virtual services, the development of innovation and collaboration with multiple providers, efficiency but maximum benefit for all parties, and accessibility without the need for space and time constraints.

The digital economy is a solution to the world's stagnant economic growth and unfavourable natural resources. This economy has led the global community to a shift in economic growth from relying solely on commodity-based market share to one based on the use of smartphones and the Internet. Through the Internet, the digital economy has led to changes in the behaviour of business actors in banking, finance, insurance, trading, buying and selling, and lending, which rely more on the use of applications on smartphones and online. The digital economy is also evolving in the areas of security and digital transactions (Iswardhana, 2021), as well as trial and error, reflecting experiences that are widely used in everyday economic activities (Lagna & Ravishankar, 2021).

Through the digital economy, it is hoped that it can help and develop economic actors that have experienced difficulties in the traditional economy, especially micro, small and medium enterprises (MSMEs). With the digital economy, Indonesian products can be marketed with world logistics standards, which can increase the capacity of economic actors, which in turn can create sustainable economic growth. However, there is still a need for training, capital and protection for rural digital economy start-ups. The digital economy not only enables MSMEs to participate in the global economy, but also economic exchange and financial inclusion for unbanked Indonesians (Nugraha et al., 2022). The digital economy can also provide an opportunity for Indonesia to move away from a reliance on natural resources to one based on the creative economy and online services (Zheng et al., 2022). In addition, Indonesia's digital economy can also be used to develop and dominate at the Southeast Asian level. This is in light of foreign multinational giants that are increasingly investing in acquiring Indonesian digital companies, as well as China's success in increasing its online sales (e-commerce) contribution to the country's GDP to 20 percent (Li et al., 2020).

Furthemore, the digital economy is not only developing in developed countries, but has also entered many developing countries, especially in Indonesia. Seeing the development of the digital economy ecosystem in Indonesia was quite surprising because people are not used to using online transactions and then get used to e-commerce. The presence of e-commerce can be said to cause a slight change in the habits of the Indonesian population, who were previously accustomed to face-to-face online buying and selling transactions with lower prices and relatively more affordable logistics costs. The digital economy recorded in terms of e-commerce in Indonesia in 2016 has generated transactions of up to USD 5.6 billion and will increase to USD 10.7 billion the following year. There is great confidence and potential in the development of the digital economy in Indonesia, as it has a potential market of 273 million people, of whom 132 million have used the internet (Mediatama, 2017).

3.1.1 Complex Interdependence Theory Perspects on Fintech Development in Indonesia

Interdependence can be understood when each country needs the other as a solution to the situation that each country has different needs and shortcomings. This situation encourages cooperation between state and non-state actors. Interdependence is a phenomenon in international politics that refers to a situation influenced by reciprocity between states or between actors in different countries. Interdependence results from international interactions in the form of communications, messages, transactions, flows of goods, and human travel across international borders (Bodin et al., 2019).

Complex interdependence is realized when the situation of international society needs and depends on each other, which causes cooperation based on different interests (Keohane & Nye, 1988). Complex interdependence means that relations between countries are no longer related to the relationship between state leaders, but more broadly by involving different actors at different levels with different interests. More cooperative and friendly relations between states show complex interdependence (Waheeda, 2015). Complex interdependence theory contradicts classical realist theory in understanding the dynamics of international relations as the phenomenon of globalization occurs (Archer, 2001). By emphasizing interdependence and cooperation, complex interdependence theory seeks to explain how states can work together to address complex global challenges. This theory contrasts with classical realist theories that focus too much on the state, conflict, and militarism. *First*, classical realism focuses only on the state as the main actor in international relations. Complex interdependence, however, recognizes the important role of non-state actors such as multinational corporations, international organizations, and civil society in shaping global dynamics (Meibauer et al., 2020). *Second*, according to classical realism, military force is the main tool to achieve national security and interests. However, complex interdependencies show that economic power is becoming more important in an interconnected world. Countries rely more on trade and investment for their economic growth, while conflict and military action become less profitable (Saavedra et al., 1993). *Third*, classical realism tends to view international relations as a zero-sum game in which one country gains and another loses. In contrast, complex interdependence emphasizes that countries can achieve mutual benefits through international cooperation.

Complex interdependence seeks to explain in the contemporary, states are not the only actors, but there are multinational corporations, banks, entrepreneurs, and transnational actors as important pioneers of relations between states and nations. Since many growing and increasingly important economic and social issues cannot be handled by the state alone, military aspects and hard power approaches are already considered less dominant and interesting in explaining current phenomena. That military and human security issues are not entirely threatening to a state. At the same time, the human security factor is no longer the main aspect, but the improvement of welfare and justice is considered more important. In complex interdependence context, economic power is more important than military power. Indonesia has leveraged the development of digital technology to improve its economic competitiveness on a global scale. Economic power enables countries to participate in international trade, attract foreign investment, and influence global politics through economic diplomacy. Indonesia has leveraged the development of digital technology to improve its economic competitiveness, focusing on sectors such as e-commerce and fintech. Indonesia has seen a significant increase in the use of digital technology and fintech, involving various stakeholders such as the government, technology companies, and civil society. Technology companies have also invested in the development of digital infrastructure and fintech services to support financial inclusion and economic growth (Langley & Leyshon, 2020). The digital economy and fintech cannot be separated from social and environmental issues in Indonesia. Financial inclusion through fintech has helped reduce economic disparities by providing access to financial services to Indonesian people who were previously underserved by traditional banks. Fintech enables individuals and businesses to access financial services such as digital payments, loans and investments more easily and efficiently. Financial inclusion through fintech has helped reduce economic inequality by providing access to financial services for people who were previously underserved by traditional banks (Elia et al., 2022). Indonesia has seen a significant increase in the use of digital technology and fintech, involving various stakeholders such as the government, technology companies, and civil society. Indonesia's e-commerce sector also has grown rapidly, with companies such as Tokopedia and Bukalapak attracting foreign investment and creating jobs. The Indonesian government has also worked with other countries to develop regulations and standards for the digital economy, demonstrating the importance of economic diplomacy in international relations.

In addition, in line with the transition and changing behaviour of people who are increasingly fond of using online media for transactions has gone hand in hand with the development of fintech today. If people usually use online models for shopping, the existence of fintech allows Indonesian consumers to invest through the devices in their hands. One of the growing sectors in fintech is agriculture, which allows Indonesians to invest in goats and cattle with attractive returns in as little as three months. Through fintech, not only can public funds deposited in savings be turned around, but also the development of start-ups and the economy can be directly supported through investments managed by experienced breeders across Indonesia (Rufaidah et al., 2023). In addition, fintech also provides opportunities for local entrepreneurs who need partners in their business, something that has been quite difficult to do in the past. By using Fintech, smallholders can become Fintech-supported partners without having to seek investors directly face-to-face and through a long process, as this service provides opportunities not only for investors who have funds, but also for farmers, cage entrepreneurs and parties who need livestock products.

Complex interdependence can also explain that fintech has improved the public's access to financial services, especially among micro, small and medium enterprises (MSMEs). Over the past five years, many fintech platforms have offered microloans, digital payments and other services that make it easier for MSMEs to access capital and increase their income. For example, the development of e-commerce platforms such as Tokopedia and Bukalapak shows how fintech is have significant role in expanding the market for local products by providing opportunities for MSMEs to sell their products online. Then, services such as KoinWorks and Modalku provide access to finance for MSMEs that previously found it difficult to get loans from banks. This increases liquidity and fosters the growth of small businesses in Indonesia. In addition, platforms such as Gojek and OVO have changed the way people transact, providing convenience and improving the efficiency of the micro-economy. This has a direct impact on increased consumption and local economic growth.

In fact, fintech has provided the community with flexibility in providing loan funds that have mostly been used through banks. The existence of Fintech is one of the solutions to the low access of Indonesian people to loans, as 60% of the population is still obtained through informal companies, while from banks only 13% of the total adult population (Pratama, 2019). The existence of Fintech provides convenience for people who need capital financing in a limited amount and relatively short term. The existence of Fintech is present by providing opportunities in financing for MSMEs that need a limited amount of funds but need a quick time. This can be seen from one fintech company that is paying great attention to local micro-enterprises in the form of financing loans through smartphone applications that can be directly deposited into the account within 15 minutes. This convenience has led to an increase in the number of borrowers, which reached 80% in July 2017, touching the Rp 100 billion mark and serving communities across Indonesia (Sekolah Jurnalisme AJI, 2022).

The use of fintech services is not only done by private parties, even the government company PT Pos (Persero) has offered remittances and entered the fintech business. The service is called PosPay, which provides digital payment methods through applications on mobile phones or directly through 44,800 agents and Pos Indonesia's network and transfer to 50 countries (Pradana, 2024). With PosPay, people can make payments for various bills and online shopping sites, and even provide loan and pawn services (Kusdardjanto & Khoirotunnisa, 2023). The partnership between Pos Indonesia and fintech is based on the state-owned company's network reaching villages across the country, not all of which are covered by traditional banking services. This symbiotic mutual cooperation not only helps PT Pos keep up with the changing times, but can also improve the digital economy and make it easier for people to pay and receive goods and capital. In this case, it proves that fintech is not a threat to the conventional industry, but a great opportunity to work together to take advantage of the huge opportunities of the digital economy.

Although some parties are worried about the digitalisation of banking, especially if there is a collaboration between banks and Fintech, because it can reduce the number of jobs. In this case, it can actually increase the number of workers, as well as cooperation with other parties in the development of digital services. Considering the current needs of the community for fast and secure financial services, it is natural for banks to collaborate with fintech developers. Banking companies can provide training, education and certification for employees, while developing an integrated digital system so that it can actually increase the efficiency of the company. Given that many activities require human analysis, it is unlikely that banks will make significant layoffs. What may happen is a shift from more human activities to technology and more people in the analytics area.

The collaboration between the banking industry and various fintech companies is a rational and positive thing. If you look at the amount of investment and collaboration between banks and Fintech, which is quite large, up to Rp1 trillion, this shows the size of the Fintech opportunity itself (Dilla et al., 2024). Banks certainly don't want to stay silent and let big opportunities slip away. If the two parties work together, they can certainly complement each other, namely banks that have experience in running secure financial institutions based on 3S (Secure, Swift and Simple). Meanwhile, fintech offers an easy and attractive way for the community to supplement banking services, which have not yet reached all levels of Indonesian society, according to the 3T (Trust, Transparency and Technology) principle. Banks will certainly experience a decline in the number of customers and transactions if they do not look at the digital economy and fintech; on the other hand, the fintech industry cannot develop optimally if it does not receive investment and imitate the experience of the existing banking world. For example, the existence of digital banks Digibank, owned by DBS Indonesia, and Jenius, owned by BTPN, has become evidence that the trend in the banking world has required digital banks. On the other hand, the need for the development of physical banks is expected to shrink as artificial intelligence has been developed and online customer data analysis (big data analysis) can serve customers like bankers in everyday life. With digital banks, there is no longer a need for additional branches in each sub-district, which means it can increase efficiency and savings in operations. Instead, they can continue to serve all communities without having to come to the office and can process transactions online even on holidays.

3.1.2 Digital Economy Concept Explained Comparison of Fintech india and India

According to Amir Hartman, the concept of the digital economy, is a virtual tool that allows business activities to take place that lead to the creation and exchange of value and transactions with the main media using the Internet (Hartman et al., 2000). The digital economy is usually closely associated with the 'information society' that developed in the 1960s, based on the need to produce, distribute and use information. As the economy transforms from an industrial to a digital economy, almost all sectors and industries rely on information. All of this has developed in tandem to create an economy with a society that has a need for knowledge-based and digital products and organisations (Gabor & Brooks, 2017).

The concept of the digital economy refutes Marxist economics, which emphasizes the need for structural change to achieve social justice. Marxist economics is an economic theory developed by Karl Marx and Friedrich Engels that focuses on class conflict and the injustices produced by the capitalist system (Zhang & Xiao, 2023). This theory emphasizes the class conflict between the bourgeoisie (owners of capital) and the proletariat (workers). Marx argued that capitalism is inherently exploitative and leads to social injustice and recurring economic crises. Marxist economics proposes the abolition of private ownership of the means of production and its replacement with collective ownership in order to achieve social justice. There are some contradictions between Marxist economics and digital economics, among others: *Firstly*, Marxist economics is considered a utopian approach and difficult to implement in everyday reality. In addition, Marxist economics tends to ignore the innovation and efficiency generated by the free market, while the digital economy helps reduce social injustice by providing wider access to information and economic opportunities. Digitalization is also used to increase transparency and accountability in the economic system. *Secondly*, Marxist economics argues that capitalism exploits workers and extracts more value from labor. In contrast, the digital economy increases efficiency and productivity, which can reduce the workload and increase workers' wages. It allows workers to focus on more value-added work, as e-commerce enables small and medium-sized enterprises to compete in the global marketplace, increasing economic opportunities for more people (Romdhane et al., 2023). *Thirdy*, the Marxist economic assumption that capitalism is prone to recurrent economic crises due to overproduction and the inability of the market to absorb all the goods produced. However, the digital economy encourages innovation and disruption, which can overcome the problems of overproduction and market inability. The existence of the digital economy allows companies to be more responsive to market demand, reducing the risk of overproduction. In addition, digital platforms such as marketplaces and fintech can improve access to markets and capital and reduce the risk of economic crisis (Hommel & Bican, 2020).

According to Don Tapscott, there are several important characteristics of the digital economy, including: a greater focus on artificial intelligence rather than just using people and buildings as factors of production; offering goods and services in digital form; online and real-time transactions; adaptability to change; the need to collaborate with other parties; transactions between individuals directly, minimising intermediaries; it can combine computing, communication and content to be marketed (Tapscott et al., 2000). It requires rapid and continuous innovation, allows all parties to be consumers and producers at the same time, offers the greatest benefits to consumers, and can be accessed anytime, anywhere by anyone. The close relationship between the digital economy, as the main ecosystem in which fintech is based, and fintech largely uses this concept to carry out business activities. Through this concept, the author tries to discuss how the role of Fintech in providing opportunities and seeing challenges in the Indonesian society, which currently likes to use the digital economy.

Meanwhile, Susanne Chishti emphasises that the emergence of fintech is due to the financial crisis, which caused a loss of public trust in banking financial institutions. People started to distrust the banking system and wanted innovation from financial institutions. Then fintech providers appeared, offering new and interesting services at affordable costs, with an attractive look and system, simply by using applications on smart and mobile devices. Fintech has come to offer the 3T (Trust, Transparency and Technology) that respond to the desires of consumers who need services that meet the needs of the millennial generation and attract many people. In this case, Fintech is present as a new means for people to access financial services that have not fully reached all parties, especially for creative businesses and individuals who do not have access to funding or ways to invest (Chishti & Barberis, 2016).

These different opinions show how fintech is present as a new model for global financial processes that are simple, efficient and secure for all people, accessible anytime, anywhere, without having to go through a complicated process. In addition, the banking industry and fintech need each other because banks can go bankrupt if they do not participate in the fintech synergy, and vice versa, fintech needs the experience and knowledge of the financial industry as a whole that banks already have. In the course of their activities, many traditional financial companies and banks are transforming or synergising with various digital stratifications to provide financial services that are easily accessible to all parties, in order to lose in today's competition that emphasises digital and online.

The phenomenon of using the internet for the digital economy and fintech has also grown rapidly in various countries around the world, including India. In the country, as many as 52% of all internet-connected Indians have used fintech and digital economy services (Dunia Fintech, 2017). In this case, the development of internet-related businesses is not new. The Indian government itself is fully committed to the development of fintech, as evidenced by the fact that the Prime Minister of India, Narendra Modi, has promised to use fintech in reforming the Indian economy to develop the potential of people who are mostly working informally, but are not registered and do not have full access to banking (Ardhian, 2017).

It has been proven that the development of startups in the country has reached USD 4 billion, as it has been developing since 2011. Some of the types of startups that are developing in the country are related to e-commerce, including cloud solutions, logistics and web solutions (Antaranews.com, 2016). In fact, India is creating a Digital Industrial Estate that will reach USD 9.34 billion (IDR 128 trillion), with Nvidia, Cisco, Siemens, HP, Dell and Nokia committing to invest (Aria, 2018). The several prestigious project can make India a leader in the development of the digital economy and fintech by working with foreign investors, but it still makes India a pioneering country in the industry.

In addition, India has imposed a tax on the e-commerce industry for those who endorse in the form of a 6% levy on total payments (Aria & Setyowati, 2017). The reason the author uses the Indian comparison is that Indonesia and India are developing countries, both with large populations, and both with relatively large numbers of people working in the informal sector (Lyons et al., 2020). However, Indonesia tends to be a bit late in the use and development of Fintech, which is evident in the percentage growth of Fintech, users of this industry, and investment in Fintech itself. While Indonesia developed its digital economy and fintech in mid-2015, India has been using it since 2011. Although it is relatively late, Indonesia actually has greater potential and can actually beat India (Thertina & Alika, 2018).

If we can understand that in Indonesia, there are still 51% of the population that fall into the category of unbankable for various reasons, even though there are still opportunities for the community to improve the domestic economy through Fintech. This is not only due to the difficulty of accessing banking facilities due to people's inability to meet bank requirements and the limited infrastructure leading to banks, but also due to a mindset that is not yet fully familiar with and trusting of the banking system. Many Indonesians still prefer to keep their money at home and borrow from family and neighbours. In addition, the fact that not all Indonesians enjoy social benefits, as they work in the informal sector and spend their wages on their daily needs, as well as the relatively low level of education, also contribute to the low access to banking in Indonesia. On the other hand, the increasing trend of smartphone usage and active internet in Indonesia is a contradiction and an opportunity that the banking and payments industry should be able to take advantage.

Looking at the development of fintech in Indonesia, it can be said that the presence of various fintech companies can boost financial transactions and the pace of economic growth in Indonesia. This is because the convenience and flexibility provided by digital technology through the Fintech industry can remove the barriers that cause the Indonesian population to not have full access to banks in conducting financial activities. The presence of Fintech does not require a high level of education and transport access to the various islands of Indonesia, as it only requires the support of device technology. The existence of Fintech also supports an important role in increasing the efficiency and convenience of the community in transactions through cashless payments, which in turn can increase economic and financial inclusion in unbanked Indonesia. In addition, the existence of Fintech with a cashless financial system can reduce the level of poverty in Indonesia because in the provision of social assistance by the government will be through Fintech, which will be more secure, accurate and on target.

Indonesia's current and future macroeconomic are potential, it is estimated that Indonesia could become the fourth largest country in the world by 2050 if it continues to grow steadily. Considering that Indonesia's middle class is growing at a rate of 10% per year, it is expected that this will lead to changes in people's consumption patterns and an increased need for the service sector. In this case, the creative industry will play an important role in supporting economic growth, especially if it can add value to a product. In relation to the current development of fintech, the growing middle class in Indonesia can be a strength in the development of economic growth. The existence of a large middle class in Indonesia will have the potential power as owners of capital, especially if you look at the current trend of people who prefer to invest rather than save.

Along with the development of today's Industry 4.0 innovation, which emphasises industrial collaboration and the development of the digital world, the existence of fintech can be a solution as one of the methods that can be developed to generate economic growth and improve the quality of the inclusive economy. Looking further, the opportunities that can be improved are not only related to taxes, excise duties and human resource development, but also to increasing the value added in production and buying and selling processes efficiently through digitalisation (Puschmann & Khmarskyi, 2024). All these things are important to have a sustainable impact on the economy and promote equitable development and community welfare (Hua & Huang, 2020).

In addition, Indonesia's better position compared to India in terms of ease of doing business can be a positive factor that encourages the development of domestic fintech. If India ranks 100th and even China ranks 78th, Indonesia is better at 72nd globally (Menpan RB RI, 2017). This shows how investors can invest not only in goods and services, but also in Fintech. If we look at the World Bank's 2018 Ease of Doing Business (EODB) report (World Bank, 2018), there are indicators on access to credit, investor protection, paying taxes and starting a business. All of these are closely related to the development of fintech, and the growing public interest in investing through the medium of fintech itself. Conversely, Indonesia could emulate India by taxing the online shopping industry at a reasonable rate to increase Indonesia's revenue. This is because the industry and the endorsement phenomenon are growing rapidly, which can be used as an opportunity to increase domestic taxes, but still impose a small percentage so as not to reduce public interest in online shopping. If the tax is only levied at an average level of 5-10%, it will certainly not significantly increase the selling price of online products, but can still generate revenue for the Indonesian government (Priyogo & Nasrudin, 2023).

In November 2016, BI established a dedicated office called the BI Financial Technology Office or BI-FTO to support the development of digital technology in the financial sector in Indonesia. Through this office, BI has largely synergised various interests for the benefit of the national digital economy by promoting a conducive payment system climate, guiding an efficient Fintech industry, and strengthening consumer protection (Clifford Chance, 2017). There are already 60 fintech companies across Indonesia that have registered with Bank Indonesia (BI) to facilitate coordination and consultation related to the digital economy in Indonesia. This is in line with Bank Indonesia Regulation (PBI) No. 11 of 2009 and No. 18 of 2016, which requires any institution that organises electronic money with a total fund of IDR 1 billion and above to be licensed by Bank Indonesia (Makarim & Thaira, 2016).

Meanwhile, 16 out of 23 fintech companies registered with the Financial Services Authority (OJK) have disbursed loans of up to Rp 1 trillion each. In fact, Fintech will also collaborate with various Islamic boarding schools across Indonesia to develop local small industries, which have a huge potential to reach 3.65 million people. With 60 million micro and medium enterprises in Indonesia, of which only 11 million have received funding from banks, while the remaining 49 million units are still unbanked, there is still a huge opportunity for Fintech to develop its business in Indonesia (Kusuma et al., 2022). It can be imagined that if there are many other fintech companies in Indonesia engaged in financing loans and many parties become consumers, then of course there is a huge opportunity for local micro businesses and individuals who need easy financing and ultimately can turn the national economy.

4. CONCLUSION

This research demonstrates that the fintech sector in Indonesia has a great opportunity to boost the local economy through financial inclusion and transaction efficiency, even though India is more advanced in the adoption of fintech technology. Key findings show that fintech in Indonesia is not only increasing the use of technology, but also bridging microeconomic challenges by providing access to financial services to people previously underserved by traditional banks. The development of fintech in Indonesia has stimulated the growth of the digital economy, created jobs and attracted foreign investment, all of which contribute to improving the competitiveness of the national economy. The implications of this study highlight the importance of continued policy support from the government to encourage technological innovation and foreign investment, as well as the need to improve digital literacy among the public. Policy recommendations include the development of digital education programmes, increased investment in technology infrastructure, and the establishment of a flexible yet protective regulatory framework to promote the inclusive and sustainable growth of the digital economy. New findings from this research also suggest that an interdisciplinary approach combining economic, social and technological aspects can provide more comprehensive insights into understanding the dynamics of digital economy development in Indonesia. Fintech has various advantages that need to be developed in Indonesia to meet the needs of the community with the times. Ultimately, Fintech industry can develop that provides benefits and convenience to all parties and the Indonesian economy.

AUTHOR'S CONTRIBUTIONS

The authors discussed the results and contributed to from the start to final manuscript.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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