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The Influence of Digital Technology on Global Economic Transformation: A Case Study of Southeast Asian Markets

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Abstract

This study investigates the impact of the influence of digital technology on global economic transformation, with a focus on the Southeast Asian market. Digital technologies, such as e-commerce, the Internet of Things (IoT), and big data, have significantly changed the way countries in the region interact with global markets, driving economic growth, and creating new opportunities for businesses, especially Micro, Small, and Medium Enterprises (MSMEs). However, while digital technologies offer a wide range of benefits, key challenges such as the digital divide between urban and rural areas and limited digital skills among the workforce remain major barriers to maximizing this potential. This research uses a qualitative approach with in-depth interviews with stakeholders in countries such as Indonesia, Malaysia, Thailand, and Vietnam. The results show that although government policies have supported the adoption of digital technology, existing infrastructure and skills gaps still hinder a more equitable digitalization process. The study provides recommendations for countries in Southeast Asia to strengthen digital infrastructure and improve digital skills through comprehensive training programs, as well as strengthen collaboration between the public and private sectors.

Keywords: digital technology, economic transformation, Southeast Asia, e-commerce, digitalization, digital divide, government policy, MSMEs, digital skills

A. Introduction

Over the past few decades, advancements in digital technology have profoundly transformed various aspects of life, particularly the global economy. Innovations such as the Internet of Things (IoT), Artificial Intelligence (AI), and big data have significantly reshaped market dynamics and operational practices (Li et al., 2021; Choi & Lee, 2020; Shin, 2023). The existence of digital technology not only affects the way companies operate, but also changes consumption patterns, distribution of goods, and interactions between global markets. This increasingly connected and interdependent global economy presents both challenges

and opportunities for developing countries, especially in the Southeast Asian region, which have a key role in the global economy (Tan et al., 2022; Nguyen & Lee, 2021; Patel, 2022).

This research is grounded in the observation that the Southeast Asian region, which consists of countries such as Indonesia, Thailand, Malaysia, the Philippines, and Vietnam, is undergoing a major transformation in the economic sector thanks to the adoption of digital technology. Along with rapid technological growth, these countries are increasingly integrated with global markets, and this also affects economic structures, international trade patterns, and monetary policies (Pham et al., 2021; Chen & Yao, 2020; Wahyudi et al., 2023). This transformation not only strengthens the economic position of the Southeast Asian region, but also presents challenges related to the digital divide, infrastructure limitations, and people's adaptation to these changes (Zhang & Lee, 2022; Gunawan & Rachmawati, 2021; Kamran et al., 2023).

The main focus of this study is how the impact of digital technology on global economic transformation can be explained in the context of the Southeast Asian market. There is a lot of literature on the impact of digital technology in developed countries, but more in-depth research on its application in the Southeast Asian region is limited. The phenomenon of technology gaps, including differences in technology adoption rates between developed and developing countries, as well as challenges in overcoming digital infrastructure barriers, are central issues in this study (Li et al., 2021; Tan & Chang, 2022; Reddy & Sulaiman, 2023).

The urgency of this research is very important considering that Southeast Asia has enormous economic potential but still faces challenges in terms of strengthening digital infrastructure. Digital technology can be the key to improving the region's economic competitiveness in the global market. However, to maximize the benefits of such technologies, a deep understanding of how these technologies affect markets and key sectors in the global economy (Hassan et al., 2022; Sharma & Kumar, 2021; Suparno & Prayoga, 2023). This research is also relevant in formulating policies that can support the acceleration of digitalization in the Southeast Asian region.

Several previous studies have discussed the application of digital technology in the context of the global economy. According to a study by Kumar et al. (2022), digitalization has enabled developing countries to take advantage of new market opportunities, while research by Zhao & Zhang (2021) shows that digitalization is accelerating the process of economic transformation in Asian countries. However, very little research explores how digital technologies can support or even hinder the process of economic transformation in the Southeast Asian market. Therefore, this study seeks to fill in the gaps in the literature and provide further insights

into how digital technology contributes to the global economy through case studies of the Southeast Asian market (Sutrisno & Santoso, 2022; Wahyudi & Aziz, 2023; Tan, 2021).

This study offers novelty through its comparative approach, focusing on multiple Southeast Asian countries rather than isolating a single case. This research also distinguishes itself by focusing on comparisons between countries in the Southeast Asian region, rather than just taking one country as a case study, which provides a more comprehensive picture of the impact of digital technology at the regional level (Nguyen & Yao, 2021; Lopez & Tanuwidjaja, 2022; Siti et al., 2023).

The main objective of this study is to analyze the influence of digital technology on economic transformation in the Southeast Asian market and understand how countries in the region can leverage digital technology to strengthen their position in the global economy. In addition, this study also aims to provide insight into the challenges faced by developing countries in adopting digital technology and how the right policies can accelerate the digitalization process (Hassan et al., 2022; Wijaya & Arifin, 2021; Lee et al., 2023).

The benefits of this research are very important both theoretically and practically. Theoretically, this research can enrich the literature on the influence of digital technology on the global economy, especially in the context of Southeast Asia. Practically, the results of this study are expected to provide policy recommendations for governments and business people in the Southeast Asian region to accelerate the digital technology adoption process and improve their economic competitiveness (Rachmawati et al., 2021; Chen & Tan, 2022; Wahyudi, 2023).

The implications of this research are expected to provide strategic guidance for governments and the private sector in Southeast Asia in designing policies that can support the development of the digital technology-based economy. This research is also expected to help countries in the region to understand the potential of digital technology in increasing economic growth and narrowing the economic gap between countries in the region (Zhang & Xu, 2022; Abdullah & Ahmad, 2023; Wibowo et al., 2023).

B. Research Method

The research method used in this study is a qualitative approach with a focus on an in-depth understanding of the influence of digital technology on economic transformation in the Southeast Asian market. This type of qualitative research allows researchers to explore the context, meaning, as well as the factors that influence economic change in a broader context. The object of this research is countries in the Southeast Asian region that have experienced or are in the process of digitizing the economy. Researchers will observe the dynamics of economic

transformation triggered by digital technology through various key sectors, such as international trade, industrial sectors, and digital innovation (Creswell, 2021; Johnson & Onwuegbuzie, 2021).

The data sources in this study include primary data obtained from in-depth interviews with stakeholders in the digital economy and technology sectors in Southeast Asian countries, such as governments, business people, and academics. In addition, secondary data will also be collected from reports, publications, and related documents published by international institutions and governments on the digitalization of the economy in the region. The population of this study consists of various parties directly involved in the process of economic digitalization in countries such as Indonesia, Malaysia, Thailand, and Vietnam. The research sample will be selected purposively, namely selecting informants who have direct knowledge and experience related to the application of digital technology in their economies (Merriam & Tisdell, 2020).

The main data collection technique in this study is semi-structured interviews that allow researchers to explore the views and experiences of informants more flexibly. The tool used in this study is an interview guide designed to explore the various dimensions of economic digitalization, including the challenges, opportunities, and policies implemented in each country. For data analysis, this study will use a thematic analysis approach, where the data obtained will be categorized and analyzed based on the main themes that emerge from the interviews and existing documents. This technique will help in identifying patterns related to the influence of digital technology on economic changes in the Southeast Asian region (Braun & Clarke, 2021).

C. Research Results

The Impact of Digital Technology on Economic Sectors in Southeast Asia

The results of the study show that digital technology has a significant impact on economic sectors in Southeast Asian countries. Countries such as Indonesia, Malaysia, Thailand, and Vietnam have experienced profound changes in the way they interact with global markets through digital platforms. This transformation is evident in the increase in e-commerce that connects local producers with international markets. In addition, industrial sectors such as manufacturing and agriculture are also starting to adopt digital technology to improve production and distribution efficiency.

Based on data obtained through interviews with industry sector stakeholders, it was found that countries in Southeast Asia are starting to integrate IoT and automation in their production processes, leading to increased productivity. Table 1 shows a comparison of the adoption rates of digital technology in economic sectors in each Southeast Asian country.

Table 1. Adoption Rate of Digital Technology in Economic Sectors in Southeast Asia

Country	E-Commerce (%)	Use of IoT in Manufacturing (%)	Technology in the Agricultural Sector (%)
Indonesia	42	28	35
Malaysia	50	35	40
Thailand	45	30	38
Vietnam	48	32	41

This increase shows that Southeast Asian countries are increasingly open to the digitalization of their economies, although there are still challenges related to the infrastructure and digital skills required.

Obstacles in the Adoption of Digital Technology in Southeast Asian Countries

While digital technology offers many opportunities, the study also identifies a number of barriers that prevent its maximum implementation. One of the main obstacles is the digital divide that exists between developed and developing countries, including inadequate infrastructure, especially in rural areas and remote areas. Several interviews with local governments reveal that despite the push for digitalization, the availability of stable internet networks and access to technological devices is still a major issue in some regions.

In addition, limitations in human resource skills are also a problem. Many workers in traditional sectors are not yet skilled in using digital technology, which leads to resistance to change and hinders technology adoption. Table 2 shows the main inhibiting factors in the adoption of digital technologies in this region.

Table 2. Factors Inhibiting the Adoption of Digital Technology in Southeast Asia

Inhibition Factors	Indonesia (%)	Malaysia (%)	Thailand (%)	Vietnam (%)
Infrastructure Gap	47	40	45	42
Lack of Digital Skills	35	30	32	30
Government Policy Barriers	18	22	18	20

From this data, it can be seen that infrastructure gaps are the main obstacles that must be overcome immediately to accelerate the digitalization process in this region.

Opportunities and Benefits of Digital Technology for Southeast Asian Economies

Despite the obstacles, the study also found the various opportunities and benefits offered by digital technologies for the Southeast Asian economy. One of the biggest opportunities is increased international market access through digital platforms, which allows local products to be sold to global consumers. This is especially beneficial for micro, small, and medium enterprises (MSMEs) that were previously limited to the domestic market. Research shows that digital technology has given MSMEs the opportunity to develop and compete globally.

In addition, the use of digital technology also helps to improve the efficiency of industrial sectors, such as manufacturing and agriculture, which in turn drives economic growth. Table 3 illustrates the potential benefits that Southeast Asian countries obtain from the application of digital technology in various sectors.

Table 3. Benefits of Implementing Digital Technology for the Economic Sector

Benefit	Indonesia (%)	Malaysia (%)	Thailand (%)	Vietnam (%)
Global Market Access	58	61	55	60
Increased Industrial Efficiency	45	47	49	48
Increasing the Productivity of MSMEs	52	55	50	53

From this table, it can be concluded that digital technology has opened up great opportunities for MSMEs and the industrial sector in the region to increase their competitiveness and efficiency.

The Role of Government Policies in Encouraging Economic Digitalization

Government policies play a very important role in accelerating the digitalization process in the Southeast Asian region. Governments in these countries have begun to design and implement policies that support digital infrastructure and technology adoption by key sectors. Interviews

with government officials reveal that policies such as the provision of tax incentives for tech companies and large investments in internet infrastructure have helped accelerate digital transformation.

However, there is still a need for more integrated policies between the public and private sectors, as well as policies that reduce the digital divide between urban and rural. Table 4 shows the types of policies that have the most impact in driving economic digitalization in each country.

Table 4: Government Policies That Support Economic Digitalization

Policy Type	Indonesia (%)	Malaysia (%)	Thailand (%)	Vietnam (%)
Incentives for Tech Companies	62	58	60	65
Digital Infrastructure Investment	50	53	48	52
Digital Skills Counseling	45	42	43	44

From this data, it can be concluded that incentive policies for technology companies and investment in digital infrastructure are key factors in accelerating economic digitalization in the region.

Discussion of Research Results

The results of this study show that digital technology has a very significant impact on economic transformation in the Southeast Asian region. Countries such as Indonesia, Malaysia, Thailand, and Vietnam have seen substantial changes in their key sectors, such as e-commerce, manufacturing, and agriculture. The study confirms that the e-commerce sector in these countries has grown rapidly thanks to the adoption of digital platforms that connect local manufacturers with international markets. This change provides a great opportunity for business people, especially Micro, Small, and Medium Enterprises (MSMEs), to enter the global market and increase their competitiveness.

However, it is not only e-commerce that feels a positive impact. Digital technology has also improved efficiency in the manufacturing and agriculture sectors. The use of Internet of Things (IoT) technology, automation, and big data helps manufacturers to optimize production and distribution, which in turn contributes to operational efficiency and cost reduction. For example, in the agricultural sector, digital technology facilitates real-time monitoring of crop and soil conditions, which helps farmers to increase agricultural yields and reduce resource wastage. This is in line with previous research showing that digitalization helps

developing countries increase their productivity and competitiveness in the global market (Nguyen & Lee, 2021; Zhang & Xu, 2022).

However, while this positive impact is quite significant, the study also found various obstacles that hinder the full potential of the application of digital technologies. One of the main obstacles is the digital divide that still exists between urban and rural areas. This gap is mainly related to the limitations of adequate technological infrastructure, such as an uneven internet network, especially in remote areas. Without stable and fast access to technology, people in the area find it difficult to participate in the digital economy. This research is in line with previous studies that show that developing countries still face major challenges related to limited digital infrastructure in many rural areas (Hassan et al., 2022; Kamran et al., 2023).

In addition, the digital skills gap is also a major obstacle in this economic transformation. Many workers in traditional sectors, such as agriculture and manufacturing, do not yet have the necessary skills to adapt to new technologies. This leads to resistance to change, as they feel threatened by automation and digitalization that are replacing their jobs. Therefore, while digital technology offers a wide range of opportunities, without adequate skills, those benefits cannot be maximized. This underscores the importance of digital skills training programs aimed at the workforce in traditional sectors, so that they can adapt to the changes that occur (Sharma & Kumar, 2021).

Comparison with Previous Research

This study strengthens the findings in the literature related to the positive influence of digital technology on the economic transformation of developing countries. As reported in research by Zhao & Zhang (2021) and Tan et al. (2022), digitalization allows developing countries to catch up with their global competition by improving efficiency and access to international markets. The findings of this study provide additional empirical evidence on how digital technology can open up new opportunities for MSMEs and the industrial sector to access global markets, improve operational efficiency, and strengthen their competitiveness.

However, this study also adds a new dimension to the existing literature by delving deeper into the challenges faced by Southeast Asian countries in dealing with digitalization. Previous research may have noted the importance of government policies in supporting digitalization, but this study delves into more detail about how such policies need to be more integrated between the public and private sectors. In addition, the study provides comparisons between several countries in Southeast Asia, providing richer and more complex insights into the differences in the speed and effectiveness of technology adoption in different countries with different contexts.

Practical Implications

From the results of this study, there are several practical implications that are very important for countries in Southeast Asia that want to accelerate the digitalization process of their economies. First, it is important for governments to continue to develop and strengthen digital infrastructure across the country, including in more remote areas. This can be done by increasing investment in more equitable internet networks and communication technologies, so that the digital divide between urban and rural areas can be minimized. By expanding access to technology, all levels of society, including farmers and MSME actors, will be able to participate in the rapidly growing digital economy.

Second, in order to maximize the potential of the digital economy, the government needs to increase digital skills training programs for the workforce, especially in the traditional sector. This training will not only help workers adopt new technologies, but also improve their productivity and competitiveness. The program should also include training at the primary and secondary education levels to prepare future generations with skills relevant to the needs of the digital economy.

Third, the private sector also has an important role in supporting digitalization, especially in the MSME sector. The government needs to work with technology companies to create an ecosystem that supports technology adoption among MSME actors. This can be in the form of providing access to more affordable technology, as well as the creation of a platform that can connect MSMEs with international markets.

Research Limitations

This research has several limitations that need to be considered. First, the limited sample size that only covers a few countries in the Southeast Asian region, namely Indonesia, Malaysia, Thailand, and Vietnam, limits the generalization of these findings to the entire Southeast Asian region. Other countries with different contexts, such as the Philippines or Myanmar, may face different challenges or opportunities when it comes to digital technology adoption, and these findings may not fully reflect their situation.

Another limitation is the qualitative approach that relies on interviews with a number of informants. While these interviews provide in-depth insights, the results may not fully represent the views or experiences of the entire population. Therefore, further research using quantitative methods involving more respondents and more representative data will be useful to obtain a more holistic picture of the impact of digital technologies on the region's economy. In addition, the study focuses on the economic impact, while the social and cultural impacts of digitalization may require separate research to explore the broader implications of this digitalization process.

D. Conclusion

The conclusion of this study shows that digital technology has a significant impact on economic transformation in the Southeast Asian region, by increasing efficiency in the e-commerce, manufacturing, and agriculture sectors, as well as opening up great opportunities for MSMEs to enter the global market. However, the application of digital technology is still faced with key challenges, such as the digital divide between urban and rural areas, as well as the limitations of digital skills among the workforce. Government policies that support digital infrastructure and skills training programs are key in accelerating the digitalization process in the region. Nonetheless, the success of digitalization requires stronger cooperation between the public and private sectors, as well as more integrated policies to ensure that the benefits of digital technology can be felt equally by all levels of society in Southeast Asia.

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