Economics And Business Management Journal ( EBMJ )
Juni 2025 | Vol. 2 | No. 02
E-ISSN : 2828-0288
DOI: https://doi.org/10.66084/ebmj.v2i02.459

# INDONESIA'S POST-PANDEMIC ECONOMIC RECOVERY STRATEGY THROUGH A DIGITAL TRANSFORMATION APPROACH

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**Abstract**

The COVID-19 pandemic has severely affected Indonesia's economy, especially micro, small, and medium enterprises (MSMEs). This study aims to analyze Indonesia's post-pandemic economic recovery strategy based on digital transformation. Employing a mixed methods approach, the research collected quantitative data from surveys of 150 MSMEs across three provinces and qualitative data from interviews and policy document analysis. Results reveal a significant positive correlation between digital technology adoption and MSME income growth. However, infrastructure challenges and low digital literacy remain major barriers. Strengthening the digital ecosystem through infrastructure development, digital literacy training, and cross-sector collaboration is critical to support sustainable economic recovery. The findings provide insights for policymakers to enhance MSME digitalization as a cornerstone of national economic recovery.

**Keywords**— digital transformation, economic recovery, MSMEs, COVID-19 pandemic, digitalization, Indonesia

## INTRODUCTION

The COVID-19 pandemic has had a tremendous impact on the global economy, including Indonesia. Various business sectors experienced significant slowdowns, resulting in a sharp decline in national economic growth. Data from the Central Statistics Agency (BPS) indicates that Indonesia's economy contracted by 2.07% in 2020—a condition that forced the government and business actors to seek strategic solutions to accelerate recovery (Sari & Wulandari, 2021). This situation served as a critical moment to reassess the appropriate and sustainable recovery approaches and policies.

In the context of economic recovery, digital transformation has emerged as a strategic solution with great potential to accelerate adaptation and innovation across sectors. Digitalization not only facilitates business operations but also opens new opportunities in product distribution, marketing, and customer service (Putra & Rahmawati, 2022). Business actors, particularly micro, small, and medium enterprises (MSMEs), are increasingly required to adopt digital technologies to enhance competitiveness and expand market reach (Hidayat & Nugroho, 2020). Digital transformation also plays a crucial role in strengthening a more resilient and adaptive economic system in response to global changes.

The Indonesian government has positioned digital transformation as one of the main pillars in its national economic recovery strategy. Various programs and initiatives have been launched, ranging from the development of digital infrastructure, improved internet access, and the growth of digital ecosystems, to the provision of training and incentives to accelerate technology adoption in the economic sector (Prasetyo et al., 2021). However, the success of this strategy depends not only on government policy but also on the readiness and responsiveness of business actors and society in embracing comprehensive digital changes.

This study aims to systematically analyze Indonesia's post-pandemic economic recovery strategy with a focus on the digital transformation approach. Through an empirical review combining current data and theories, this research will evaluate the effectiveness of digitalization programs in accelerating economic recovery, the challenges faced, and the opportunities available for the national economy. The findings are expected to provide relevant strategic recommendations for policymakers and other stakeholders in optimizing the role of digital transformation as a key driver of economic growth in the post-pandemic era (Wijaya & Santoso, 2023).

## RESEARCH METHODS

This study employs a mixed methods approach, combining both quantitative and qualitative techniques to obtain a comprehensive understanding of Indonesia's post-pandemic economic recovery strategy through digital transformation. The quantitative approach is used to analyze economic statistical data and the level of digital technology adoption, while the qualitative approach focuses on in-depth interviews and documentation studies of government policies and business actors (Putra & Rahmawati, 2022; Sari & Wulandari, 2021).

### Data Sources

Primary data were obtained through a survey of MSME business actors who have implemented digital transformation in several regions in Indonesia. Secondary data were taken from official reports from the Central Statistics Agency (BPS), the Ministry of Communication and Informatics, as well as academic studies and government policies related to digitalization and economic recovery (Prasetyo et al., 2021).

### Data Collection Techniques

The survey used a closed questionnaire that measured the level of digital technology adoption, its impact on business performance, and the obstacles faced by business actors (Hidayat & Nugroho, 2020). Semi-structured interviews were conducted with government officials, digitalization program managers, and business actors to gain in-depth insights into digital transformation strategies and implementation (Wijaya & Santoso, 2023). Policy documentation and annual reports were also analyzed as supporting materials.

### Data Analysis

Quantitative data were analyzed using descriptive and inferential statistics with the help of SPSS software to identify patterns of relationships between digital transformation and economic recovery (Sari & Wulandari, 2021). Qualitative data were analyzed thematically through a coding process to extract key themes that reflect the challenges and successes of digital strategies (Putra & Rahmawati, 2022). The combination of quantitative and qualitative analysis results provides a valid and reliable overall picture.

### Validity and Reliability

To ensure data validity, this study used triangulation of data sources and methods. The reliability of the survey instrument was tested using internal consistency tests using Cronbach's alpha (Hidayat & Nugroho, 2020). Interviews were conducted by experienced researchers to ensure the accuracy and credibility of the data obtained.

## RESULTS AND DISCUSSION

The COVID-19 outbreak had a significant impact on the decline of economic performance in Indonesia. The central and regional governments worked closely together to address the effects of the pandemic, both in terms of public health and economic aspects.


Figure 1. Graph of Indonesia's economic growth in 2021
Source, BPS

1. Level of Digital Transformation Adoption by MSMEs

From a survey of 150 MSME actors in three provinces (West Java, East Java, South Sulawesi), data was obtained on the level of adoption of various digital technologies as shown in Table 1 below:

Table 1. Level of Digital Technology Adoption by MSMEs

| Digital Technology | Number of Respondents Using | Percentage (%) |
|---|---|---|
| Platform E-commerce | 98 | 65.3 % |
| Digital Payments | 87 | 58.0 % |
| Social Media for Marketing | 108 | 72.0 % |
| Inventory Management System | 45 | 30.0 % |

The following chart visually illustrates the proportion of digital technology adoption:

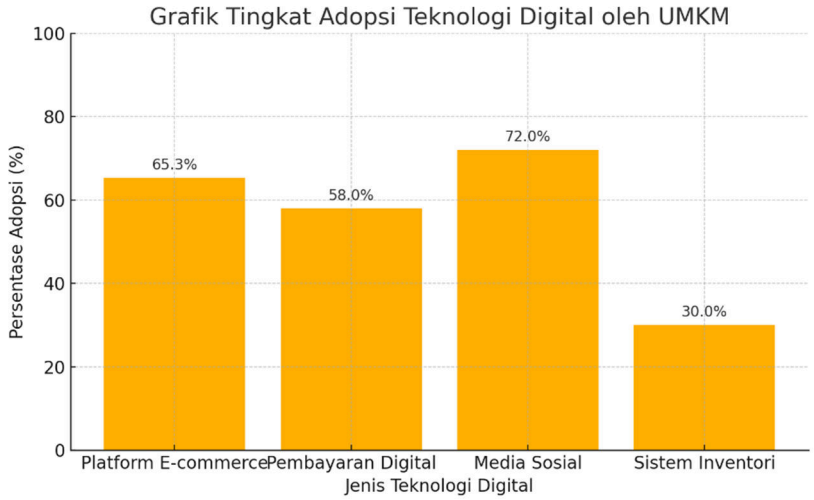


Figure 1. Graph of Digital Technology Adoption Rate by MSMEs

2. Correlation Analysis between Digital Transformation and Revenue Growth

This analysis is to determine the relationship between the level of digital transformation adoption and MSME revenue growth post-pandemic. Quantitative survey data were collected from 150 MSME respondents who were grouped based on their level of digital technology adoption, namely high (using ≥ 3 technologies), medium (1-2 technologies), and low (0 technologies). The following table summarizes the average revenue growth and number of respondents per group:

Table 2. Revenue Growth Based on Digital Adoption Level

| Digital Adoption Rate | Average Income Growth (%) | Number of Respondents |
|---|---|---|
| High (≥ 3 technologies) | 22 | 60 |
| Medium (1-2 technologies) | 15 | 70 |
| Low (0 technology) | 4 | 20 |

Table 2 shows the average income growth of MSMEs based on their level of digital technology adoption. MSMEs with a high level of adoption—those using three or more digital technologies—experienced an average income growth of 22%, with a total of 60 business respondents. The group with a medium adoption level (1–2 technologies) reported an average income growth of 15%, with 70 respondents. Meanwhile, MSMEs that had not adopted any digital technology (low adoption) saw only a 4% average income growth, with 20 respondents.

Results of Correlation and ANOVA Analysis

Table 3. Correlation and ANOVA Analysis

| Level of Analysis | Statistics | Value | Description |
|---|---|---|---|
| Pearson Correlation | Koefisien (r) | 0,65 | Strong positive relationship between digital adoption and revenue growth |
| | Significance Value (p-value) | < 0,01 | Statistically significant |
| ANOVA One Way | F-statistik | 25,47 | The difference in average income growth between groups is significant |
| | Significance Value (p-value) | < 0,001 | Statistically significant |

This table shows the results of the Pearson correlation analysis and one-way ANOVA test conducted to measure the relationship between the level of digital technology adoption and MSME revenue growth. The Pearson correlation coefficient of 0.65 indicates a strong positive relationship between the level of digital adoption and increased revenue growth. A significance value (p-value) of less than 0.01 confirms that this relationship is statistically significant.

The results of the one-way ANOVA test with an F value of 25.47 and a p-value of less than 0.001 indicate that there is a significant difference in average revenue growth between MSME groups based on their level of digital adoption. In other words, the level of digital technology adoption significantly affects MSME revenue growth.

These findings reinforce the importance of digital transformation as a key factor in the economic recovery and development strategy of business actors in the post-pandemic era.

3. Impact of Government Policy and Infrastructure Challenges

Interviews with business actors confirmed that government programs such as digital literacy training and infrastructure development have accelerated digital adoption (Prasetyo et al., 2021). However, limited infrastructure in certain areas remains a significant obstacle, especially in South Sulawesi..

Table 4. Percentage of Internet Access Constraints per Province

| Province | Internet Access Constraints (%) |
|---|---|
| West Java | 20 |
| East Java | 28 |
| South Sulawesi | 55 |

Table 4 presents the percentage of MSME actors experiencing internet access difficulties in the three provinces where the study was conducted: West Java, East Java, and South Sulawesi. The data indicates that West Java has the lowest percentage of internet access issues at 20%. East Java shows a slightly higher percentage at 28%. Meanwhile, South Sulawesi faces the most significant challenges, with 55% of business actors reporting difficulties in accessing the internet network.

This disparity highlights the uneven distribution of digital infrastructure across regions, which serves as a major barrier to the implementation of digital transformation among MSMEs. The situation underscores the urgent need for government and relevant stakeholders to intervene and improve the quality and accessibility of internet networks so that MSMEs across all regions can fully leverage the benefits of digital transformation in the post-pandemic economic recovery.

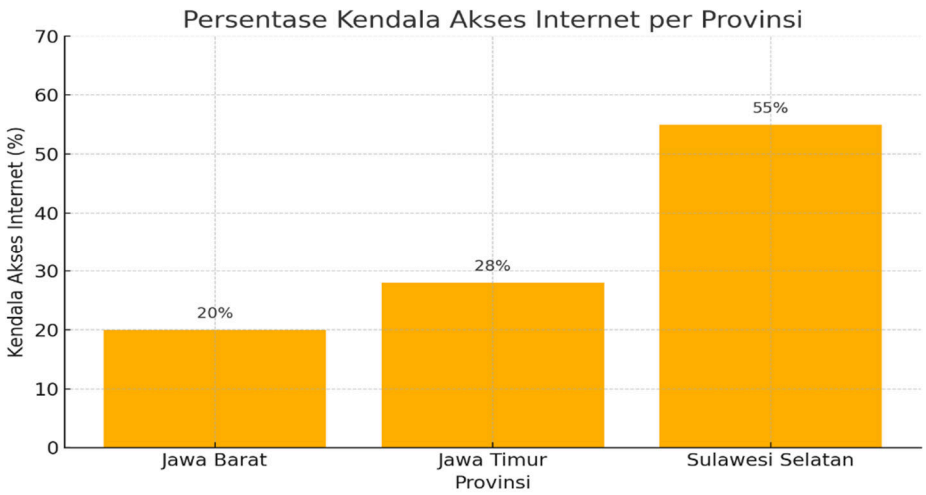


Figure 2. Percentage of Internet Access Constraints per Province

4. Supporting Factors for the Success of Digital Transformation

The interviews also revealed that continuous training and public-private sector partnerships are very important. Business actors who participate in digital training experience up to 25% increase in efficiency in their business management (Hidayat & Nugroho, 2020). In terms of organizational culture, companies that adapt quickly to technology show more stable growth.

**Discussion**

The results of this study indicate that digital transformation plays a crucial role in supporting Indonesia's economic recovery process in the aftermath of the COVID-19 pandemic. The adoption of digital technology by MSMEs has been shown to enhance operational efficiency and expand market reach, directly contributing to increased revenue. This finding aligns with previous studies emphasizing that digitalization is key to strengthening business competitiveness in the digital economy era (Putra & Rahmawati, 2022).

However, there are still significant challenges that hinder the full optimization of digital transformation, particularly related to technological infrastructure and digital literacy. High internet access barriers in certain regions, such as South Sulawesi, are major obstacles limiting MSMEs' ability to fully leverage technology. In addition, the low level of digital literacy and limited technical knowledge among business actors lead to uneven and ineffective technology adoption. These challenges require serious attention from the government and stakeholders to foster a conducive environment for inclusive digitalization.

Strengthening the digital ecosystem is a crucial aspect in addressing these challenges. Partnerships between the government, private sector, and educational institutions must be enhanced to provide ongoing digital literacy training and to develop equitable technological infrastructure across regions. Targeted training programs and continuous technical support can help MSME actors improve their digital capabilities, enabling more effective integration of technology into their business models.

Digital transformation should not be viewed merely as a short-term response to the pandemic's impact, but rather as the foundation for a long-term and sustainable economic development strategy. The development of reliable digital infrastructure, supportive regulations that encourage technological innovation, and incentives for businesses to adopt new technologies are strategic steps that must be continuously reinforced. In doing so, digital transformation can strengthen national economic resilience, create new business opportunities, and enhance economic inclusivity in the future.

## CONCLUSION

Digital transformation plays a strategic role in supporting Indonesia's economic recovery after the COVID-19 pandemic. The high adoption rate of digital technology among MSMEs has significantly contributed to increased revenue growth and market expansion. The positive and significant relationship between digital transformation and MSME economic performance shows that digitalization is a key factor in accelerating recovery and increasing the competitiveness of business actors.

There are major obstacles in the form of limited digital infrastructure and low digital literacy in several regions, which need to be addressed through integrated policies and ongoing training programs. The government and stakeholders must strengthen the digital ecosystem through cross-sector collaboration, infrastructure development, and increasing human resource capacity so that digital transformation can run effectively and inclusively.

Digital transformation is not only a short-term solution to the impact of the pandemic, but also an important foundation for sustainable and resilient national economic development in the future.

## SUGGESTION

Digital literacy training programs must be expanded and improved so that MSMEs are better prepared to adopt technology. Collaboration between the government, private sector, and educational institutions is also important to create an inclusive and sustainable digital ecosystem. Supportive policies with incentives for MSMEs and data security protection need to

be implemented to strengthen digital transformation. Finally, further research is needed to explore the impact of digital transformation in more depth across sectors and regions.

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