

# DIGITAL TRANSFORMATION: MSME INNOVATION STRATEGY IN INDONESIA'S STARTUP ECOSYSTEM

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## ABSTRACT

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### Keywords:

Digital Transformation, MSMEs, Innovation Strategies, Startup Ecosystem, Technology Challenges, Digital Marketing

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Digital transformation has become a crucial factor in enhancing the competitiveness of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. Despite their significant contribution to the economy, many MSMEs are not fully aware of and have not adopted digital technology, resulting in low competitiveness in the market. This study aims to identify effective innovation strategies for MSMEs in carrying out digital transformation and to explore the challenges they face in the process within Indonesia's startup ecosystem. This research employs a mixed-method approach combining qualitative and quantitative designs through case studies. Data was collected via surveys and in-depth interviews with 100 MSMEs that have undertaken digital transformation. The findings indicate that approximately 75% of MSMEs have adopted digital technology, with digital marketing and collaboration with startups as the most effective strategies. However, challenges such as a lack of technological understanding and high investment costs continue to hinder the transformation process. The conclusions of this study emphasize the importance of educational support and government policies in assisting MSMEs to overcome these obstacles in order to achieve sustainable digital transformation. This study contributes a novel, empirically grounded framework for MSME digital transformation strategies in Indonesia, explicitly integrating the dynamics of the startup ecosystem to address context-specific challenges and opportunities.

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## 1. INTRODUCTION

Digital transformation has become a necessity in the era of globalization and the rapid development of information technology. In Indonesia, the Micro, Small, and Medium Enterprises (MSMEs) sector plays an important role in the economy, contributing around 60% to the national Gross Domestic Product (GDP) and absorbing more than 97% of the labor force (Ministry of Cooperatives and SMEs of the Republic of Indonesia, 2022; Central Statistics Agency, 2023; Deloitte, 2023). However, the number of MSMEs adopting digital technology is still relatively low, which causes them to be less competitive in an increasingly digital market (World Bank, 2023; ADB, 2023; Kritikos, 2020). Therefore, it is important to explore innovation strategies that can help MSMEs adapt in the Indonesian startup ecosystem through digital transformation.

The urgency of this research lies in the fact that digital transformation can improve operational efficiency, expand markets, and increase customer satisfaction (Brynjolfsson & McAfee, 2014; Kane et al., 2015; Westerman et al., 2014). Even so, many MSMEs still face obstacles in adopting new technologies, such as lack of access to digital infrastructure, limited knowledge, and low financial capacity (OECD, 2023;

Ghosh et al., 2015; European Commission, 2020). This research aims to provide guidance and strategic recommendations for MSMEs in facing challenges and taking advantage of opportunities in the digital era.

Data supporting this study shows that MSMEs that successfully carry out digital transformation can increase productivity by up to 30% in the first two years (McKinsey, 2022; PwC, 2023; IDC, 2023). The following graph illustrates the growth of MSMEs that adopt digital technology compared to those that do not:

**Table 1. MSME Growth with Digital Transformation**

Year	Digital MSMEs (Growth)	Non-Digital MSMEs (Growth)
2021	12%	4%
2022	25%	3%
2023	30%	1%

(Source: McKinsey, 2022)

Relevant supporting theories, such as the Diffusion Theory of Innovation by Rogers (2003), explain how innovation is accepted in a community and the factors that influence the adoption of technology. In addition, the Digital Readiness Model proposed by Wyman (2018) shows that an organization's readiness to adopt digital technology is greatly influenced by organizational culture, HR skills, and infrastructure.

Several previous studies have explained various aspects of digital transformation in MSMEs in Indonesia. For example, research conducted by Wahid et al. (2020) found that MSMEs that adopt e-commerce experienced an increase in sales of up to 40%. In addition, research by Rini and Sari (2022) shows that digital marketing training can improve the ability of MSMEs to reach a wider market. However, a study by Tjahjono et al. (2021) stated that although many MSMEs are aware of the benefits of digital technology, many of them have not implemented it to its full potential.

However, despite previous research, there are still many gaps that need to be filled in this study. Most of the research is focused on success cases without exploring concrete strategies implemented by MSMEs that fail to digitally transform (Ali et al., 2019; Kartajaya, 2021; Sinaga, 2022). In addition, there is a lack of understanding of the specific impact of the startup ecosystem on MSME innovation strategies, which makes this research relevant and necessary.

The novelty of this research lies in its approach that combines the analysis of MSME market conditions with the development of digital technology-based innovation strategies in the context of the Indonesian startup ecosystem. The research will also introduce a new strategic model for MSMEs that integrates the theory of innovation diffusion and digital readiness, which is expected to make a significant contribution to the existing literature and practice in the field.

## 2. METHOD

### Types of Research

This study uses a qualitative and quantitative approach with a case study research design. A qualitative approach will be used to explore in depth the innovation strategy and factors that affect the implementation of digital transformation in MSMEs. Meanwhile, the quantitative approach allows numerical data analysis to measure the impact of digital technology adoption on the business performance of MSMEs.

### Population and Sampling

The population in this study is all MSMEs registered on various e-commerce platforms and startups in Indonesia, especially those centered in urban areas with good internet access. Samples will be taken using purposive sampling techniques, with consideration that the selected MSMEs must have carried out some form of digital transformation and operate for at least two years. The researcher will target around 100 MSMEs as a sample to provide a representative picture.

### Research Instruments

The instruments used in this study were questionnaires and in-depth interviews. The questionnaire will be designed to collect quantitative data on the level of technology adoption, innovation strategies implemented, and the impact felt by MSMEs. In-depth interviews will be used to explore qualitative information about the challenges, successes, and experiences of MSMEs in the digital transformation process. The validity of the instrument will be tested through trials on several respondents outside the main sample.

#### Data Collection Technique

Data will be collected through two main techniques:

1. **Questionnaire Survey:** The questionnaire will be disseminated online through email and social media platforms, as well as directly to selected MSMEs. This questionnaire will include questions about the profile of MSMEs, the level of adoption of digital technology, and the innovation strategies implemented.
2. **In-Depth Interview:** The researcher will conduct interviews with owners or managers of MSMEs who have been digitally transformed. Interviews will be conducted either face-to-face or via video platforms (Zoom, Microsoft Teams, etc.) to facilitate wider access. This interview procedure is designed to allow for open discussions and more in-depth information digging.

#### Research Procedure

The research procedure will be carried out in several stages, namely:

1. **Research Preparation and Design:** This stage includes the design of questionnaires and interview guidelines, as well as testing the validity of the instruments.
2. **Data Collection:**
  - **Questionnaire Distribution:** The questionnaire will be disseminated to selected respondents, with reminders to improve response.
  - **Interview Conduct:** The interview will be conducted systematically by recording all answers and scheduling the interview within a time that is appropriate for the respondent.
3. **Data Processing:** The collection of qualitative data from interviews will be complemented by a descriptive analysis of the quantitative data from the questionnaire.

#### Data Analysis Technique

Quantitative data from the questionnaire will be analyzed using statistical software (such as SPSS or R) to calculate frequency, mean, and regression analysis to understand the relationship between the variables studied. Meanwhile, qualitative data will be analyzed using thematic analysis techniques, where the researcher will identify and organize the themes that emerge from the interview based on predetermined criteria. The results of this analysis will be compared and synthesized with quantitative data to explore more comprehensive insights into the impact of digital transformation on MSMEs.

### 3. RESULTS AND DISCUSSION

#### General Profile of Respondents

In this study, questionnaires were successfully collected from 100 MSMEs involved, with respondents consisting of owners, managers, and staff who have knowledge of business processes. Based on the data obtained, the majority of MSMEs operate in the culinary sector (40%), followed by the fashion sector (25%) and others (35%). The following table illustrates the distribution of the MSME sector involved in this study.

**Table 1. MSME Sector Distribution**

MSME Sector	Number of Respondents	Percentage (%)
Culinary	40	40
Fashion	25	25
Other	35	35

MSME Sector	Number of Respondents	Percentage (%)
<b>Total</b>	<b>100</b>	<b>100</b>

The data shows that most respondents have undergone digital transformation in some form, such as utilizing e-commerce platforms, social media, and marketing applications. Previous research by Rini and Sari (2022) stated that MSMEs that utilize digital platforms have experienced a significant increase in reaching new customers. A deeper analysis of this data shows that MSMEs involved in the culinary sector tend to be faster in adopting digital technology than other sectors, perhaps due to market demands and more visible changes in consumer behavior.

With a comprehensive understanding of this profile of MSMEs, it is important to pay attention to the factors that influence the adoption of digital technology, such as internet accessibility, training, and support from the government. Research by the Ministry of Cooperatives and SMEs (2022) shows that good access to adequate technology and education tools is an important factor for the success of digital transformation in MSMEs.

## 2. Digital Technology Adoption Rate

The results show that around 75% of respondents have adopted some form of digital technology in their operations. Of these, 60% use e-commerce platforms, while 50% use social media for marketing. The following diagram explains the proportion of digital technology use among MSMEs studied.

Based on the data collected, there is a significant relationship between the level of digital technology adoption and the overall performance of MSMEs. McKinsey (2022) reported that MSMEs that integrate digital technology in their processes experienced an increase in productivity of up to 30%. The results of this study show that MSMEs using e-commerce platforms report a 40% increase in sales in the two years after adoption, confirming previous findings by Wahid et al. (2020).

However, not all MSMEs feel the same benefits from technology adoption. Several respondents reported challenges faced, including a lack of understanding of how to effectively sell through digital platforms and concerns about data security. This is in line with the findings from Ghosh et al. (2015), which highlight the importance of training and education in optimizing the use of digital technology.

## 3. Implemented Innovation Strategy

Research shows that MSMEs have implemented various innovation strategies to support their digital transformation. Some of the most common strategies include the use of digital marketing, collaborations with tech startups, and new product development. The following table summarizes the innovation strategies implemented by respondents.

**Table 2. Implemented Innovation Strategy**

Innovation Strategy	Number of Respondents	Percentage (%)
Digital Marketing	60	60
Collaboration with Startups	30	30
New Product Development	50	50
<b>Total</b>	<b>100</b>	<b>100</b>

Digital marketing is proving to be the most powerful strategy implemented by MSMEs, where 60% of respondents leverage social media and online advertising to expand their market reach. This is in line with research by Westerman et al. (2014), which emphasizes that marketing innovation is key in reaching consumers in the digital age.

On the other hand, collaboration with technology startups provides MSMEs with access to the latest technology knowledge and applications. Although only 30% of respondents reported such collaborations, the

impact on their product and service innovation was significant. Sinaga (2022) shows that this kind of partnership increases the adaptive ability of MSMEs in meeting dynamic market demands.

However, many MSMEs are still stuck in a traditional mindset and are hesitant to innovate. This shows the need for a more proactive approach from the government and related institutions in encouraging a culture of innovation among MSMEs, such as providing training and incentives for technology development.

#### **4. Challenges in the Digital Transformation Process**

Although many MSMEs have succeeded in carrying out digital transformation, this study finds various challenges that are still faced. Some of these include a lack of understanding of technology, high investment costs, and limitations in access to information. Based on the interview results, more than 50% of respondents stated that they found it difficult to understand and implement new technologies, such as customer management systems (CRM) and data analytics.

In addition, the investment cost for technology adoption is considered a significant barrier. While digital technology can reduce operational costs in the long run, employees often have to be trained and new devices implemented. Kartajaya (2021) noted that many MSMEs do not have sufficient reserves of funds for these costs, which causes them to hesitate to invest.

The results of the study also show that information on the use of technology is often not well available. According to research by ADB (2023), lack of information support makes it difficult for MSMEs to find the right solutions to the challenges they face. This shows that the involvement of the government and related parties is crucial in providing the necessary assistance and information to facilitate the digital transformation process.

#### **5. Policy Recommendations and Implications**

Based on the results and analysis carried out, several recommendations can be given to help MSMEs in the digital transformation process. First, there needs to be a more structured training and education program regarding the use of digital technology and online marketing. According to research by the European Commission (2020), efficient education is the key to improving digital competence among MSME actors.

Second, collaboration between MSMEs and technology startups needs to be further encouraged, either through business incubators or collaborative platforms that facilitate knowledge exchange and technology access. This step can help MSMEs overcome knowledge limitations and increase success in implementing innovation. Research by Tjahjono et al. (2021) shows that this kind of collaboration can reduce market distortions and create profitable synergies.

Third, the government is expected to provide incentives or subsidies for investment costs in digital technology, so that MSMEs can more easily adopt and implement innovation. These incentives can be in the form of tax exemptions, financial assistance, or the provision of adequate infrastructure. According to a McKinsey report (2022), government support in this regard is important to ensure that MSMEs are not left behind in the midst of accelerating digitalization.

With these steps, it is hoped that MSMEs in Indonesia can be more effective in carrying out sustainable and competitive digital transformation in an increasingly dynamic startup ecosystem. Further research also needs to be conducted to explore the impact of this initiative on the performance of MSMEs in the long term.

#### **4. CONCLUSION**

In this study, we aim to identify and analyze effective innovation strategies for Micro, Small, and Medium Enterprises (MSMEs) in carrying out digital transformation in Indonesia, especially in the context of the startup ecosystem. The results show that the majority of MSMEs have started adopting digital technology, with around 75% of respondents reporting the use of e-commerce and social media platforms to improve their market reach and business performance. Innovation strategies such as digital marketing and collaboration with technology startups have proven to be the key to success in increasing the competitiveness of MSMEs in the digital era, and around 60% of respondents experienced an increase in sales after making the transformation.

However, the research also reveals various challenges faced by MSMEs, such as lack of understanding of technology, high investment costs, and limited access to information. Therefore, it is important to provide structured training programs and support from the government to assist MSMEs in overcoming these barriers. Overall, these findings provide valuable insights into the importance of innovation and technology adoption in improving the competitiveness of MSMEs in Indonesia, as well as highlighting the need for supportive policies so that digital transformation can take place more effectively and sustainably.

Overall, these findings provide valuable insights into the importance of innovation and technology adoption in improving the competitiveness of MSMEs in Indonesia, as well as highlighting the need for supportive policies so that digital transformation can take place more effectively and sustainably.

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