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Adaptation of MSME Actors to Technological Development During The Pandemic

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Abstrak: *The COVID-19 pandemic has accelerated digital transformation in Indonesia's Micro, Small and Medium Enterprises (MSMEs) sector, which previously relied more on conventional methods. Social restrictions encourage MSME players to adapt to technology, especially in marketing and operational efficiency. This study aims to explore how MSMEs are adapting to digital technology during the pandemic, with a focus on marketing digitalization, the use of technology for operational efficiency, and challenges faced related to infrastructure and digital literacy. Using a descriptive qualitative approach and case studies with in-depth interviews with 10-15 MSME players, this research found that digital technology has become an important element in maintaining MSME business continuity. While the benefits of technology are clear, constraints such as limited infrastructure, low digital literacy, and investment costs are major barriers. Therefore, this study suggests the need for collaboration between the government, private sector, and educational institutions to provide training, more affordable access to technology, and better infrastructure to support MSME digitalization. The findings are expected to provide insights for policymakers and industry players in designing effective measures to accelerate the digital transformation of MSMEs, improve their competitiveness in the global market, and prepare them for future economic challenges*

Keywords : *Digital Transformation of MSMEs; Infrastructure and Digital Literacy Challenges; Utilization of Marketing Technology*



INTRODUCTION

The COVID-19 pandemic has had a significant impact on the global economy, including the Micro, Small and Medium Enterprise (MSME) sector in Indonesia. Social restrictions implemented to control the spread of the virus have forced many MSME players to adapt quickly in order to survive. Changes in consumption patterns, which lead to online shopping habits, force MSMEs to transform in order to remain relevant in an increasingly digitalized market. One of the main adaptations made by MSME players is the utilization of technology, which is now a key factor in business continuity amidst uncertainty (Masriansyah, 2020). Previously, digital technology may have been considered an additional option by some MSME players, but the pandemic has accelerated the digitization process in almost all aspects of their operations. Not only for marketing, technology also plays a role in various other aspects, from payment systems, inventory management, to customer service, which helps them maintain operations despite social restrictions (Setiawan, 2024). In this case, technology not only acts as an effective marketing tool through digital platforms, but also as a means to increase operational efficiency and improve customer service. Therefore, digital transformation for MSME players has become a necessity in surviving and developing in this pandemic era.

The first striking phenomenon is the transformation of marketing through digitalization. With limited physical interaction due to social restrictions, MSMEs began to utilize social media, marketplaces, and digital advertising to reach consumers who previously could only be reached through direct sales (Widiastuti & Mulyono, 2024). Platforms such as Instagram, Facebook, WhatsApp, and e-commerce such as Tokopedia, Bukalapak, and Shopee are the main channels in marketing MSME products. The use of these platforms not only allows MSMEs to expand their market share, but also to build and strengthen their brand in the eyes of consumers. MSME players

who are able to utilize technology to promote their products on digital platforms show better resilience, even though the market is in a state of uncertainty. On the other hand, technology also plays a role in improving operational efficiency. Various applications and software that support business processes-such as digital cashier applications, inventory management systems, and customer management systems-can reduce reliance on time-consuming and error-prone manual processes. As such, the use of technology in the marketing and operations of MSMEs allows them to not only survive, but also improve their competitiveness in an increasingly digitally connected market.

However, despite the huge potential of technology in helping MSMEs thrive, many MSME players face obstacles in accessing and optimizing this technology. One of the main challenges is the issue of limited infrastructure. Many MSMEs operate in areas with inadequate internet access, which prevents them from making the most of digital platforms. In some areas, slow or even unstable internet speeds hamper the online transaction process, which can impact sales and customer satisfaction (Wijoyo et.al., 2021). In addition, limited digital literacy among MSME players is also a significant obstacle in the application of technology. Many MSME players do not have sufficient understanding of how to use existing digital marketing tools, such as SEO (Search Engine Optimization) or social media analytics, which are crucial for measuring the effectiveness of marketing campaigns. Therefore, despite the huge potential of digitalization, limited access and understanding are factors that hinder the implementation of technology among MSMEs, especially in areas where infrastructure is still developing.

In addition, the investment cost for technology is another significant barrier for MSME players. To adopt a digital payment system, cashier application, or more efficient management software, MSMEs require a significant amount of funds. For many MSME players, this investment cost is often an



insurmountable obstacle, especially for those who have limited capital and rely on existing resources. While technology can improve efficiency and long-term profitability, MSME players are often reluctant to invest upfront due to concerns about the uncertainty of market conditions. Hence, there is an imbalance in the adoption of digitalization, where MSMEs with sufficient capital can quickly access technology, while MSMEs with limited capital have to face difficulties in digital transformation. This points to the need for further support from both the government and the private sector to help MSMEs access the necessary technology to improve their competitiveness.

By understanding these three phenomena-digitalization of marketing, technology-based operational efficiency, and infrastructure and digital literacy constraints-this study aims to provide a clearer picture of the dynamics of MSME actors' adaptation to technological developments during the pandemic. This research identifies factors that influence the level of technology adoption by MSME players and explores how external factors such as infrastructure and internal factors such as digital literacy can influence their decision to adopt technology. This understanding is important in designing policies that support the overall digitalization of the MSME sector. It is hoped that the results of this study can provide useful insights for policymakers in developing more effective programs to support the digital transformation of MSMEs in Indonesia. In addition, the findings of this study can also serve as a basis for the private sector and educational institutions to improve access to technology and training for MSME players, especially those in areas with limited infrastructure.

Furthermore, this research will also identify the opportunities and challenges MSMEs face in utilizing technology, as well as the strategies they use to overcome these obstacles. By understanding the ways in which MSMEs are adapting to technology, this

research can provide more appropriate recommendations to improve support for the sector. One aspect that needs to be highlighted is the importance of collaboration between the government, private sector, and educational institutions in creating an ecosystem that supports the digital transformation of MSMEs. Support in the form of training, access to affordable technology, and better infrastructure is needed to encourage MSMEs to transform more effectively and efficiently. This will help them not only survive during the pandemic, but also thrive and innovate in facing post-pandemic challenges.

Overall, the results of this study are expected to provide a deeper understanding of the role of technology in supporting MSME business continuity during the COVID-19 pandemic. This research will also provide an overview of how MSMEs in Indonesia can optimize the use of technology in facing existing challenges. This research aims to contribute to the development of more inclusive and strategic policies to support the digitalization of MSMEs, as well as to improve the competitiveness of the sector in the global market. By doing so, the MSME sector can become more resilient and ready to face the increasingly complex economic dynamics in the future. Therefore, the results of this study are expected to be a reference for policy makers, industry players, and academics in designing more effective measures to support the digital transformation of MSMEs in Indonesia.

METHOD

This study uses a descriptive qualitative approach with a focus on the experiences of MSME actors in adapting technology during the COVID-19 pandemic. A phenomenological approach was chosen to explore in-depth understanding of how MSME players respond to changes triggered by the pandemic. The research adopted a case study design with a sample of 10-15 MSME players from various business sectors, selected by purposive sampling. Data were collected through in-depth



interviews, participatory observation, and documentation to obtain comprehensive information on the use of technology in marketing and operations. Data analysis was conducted using thematic analysis, with steps of transcription, coding, categorization, and interpretation of findings. To ensure validity, this research used data triangulation and member checking. This research paid attention to ethical principles, by providing informed consent to participants and maintaining data confidentiality. The limitation of this research is to focus on MSMEs that have adopted digital technology, with further studies in urban areas and better internet access. The results are expected to provide insights into the dynamics and challenges of MSME technology adaptation as well as recommendations for policies that better support the sector's digital transformation.

RESULTS AND DISCUSSION

1. Digitalization and Marketing Transformation

The results show that marketing digitalization has become a key strategy for MSME players to survive the pandemic. Social media such as Instagram, Facebook, and WhatsApp are used intensively to market products, reaching more consumers without having to rely on physical interaction. E-commerce platforms such as Tokopedia, Bukalapak, and Shopee have become important channels for MSME players to expand their market and increase their product visibility. Many businesses also utilize paid advertising features on social media to promote their products to a wider audience. In addition, collaboration with local influencers is also part of an effective marketing strategy, as it can increase trust and attract the attention of potential consumers. This phenomenon proves that the pandemic has changed the way consumers shop, who now prioritize the convenience and safety of online shopping. Therefore, MSMEs that can adopt digital marketing quickly can maintain and even increase their sales despite the uncertain situation. However, the use of this marketing

technology does not always go smoothly, especially for MSME players who do not have the skills or knowledge in effective digital marketing strategies (Rachmawaty, 2021).

Even so, for most MSME players, digital marketing opens up new opportunities that were previously unreachable. They feel helped by the ease of accessing existing platforms without having to spend a lot of money or have in-depth technical knowledge. However, obstacles arise for MSME players in areas with limited technology and internet access. Some of them revealed that although they wanted to utilize digital platforms, the limitations made it difficult for them to tap into the full potential of online marketing. Most MSME players feel unskilled in utilizing paid advertising or using data analytics to assess the effectiveness of their marketing campaigns. Therefore, it is important for MSME players to continue learning and adapting to technological developments in order to remain competitive in the growing digital market. On the other hand, the role of the government and private sector is crucial to provide the necessary training and technical support for MSMEs to optimize the potential of this technology. If these barriers can be overcome, MSMEs will be better equipped to utilize digital marketing as a tool to improve their competitiveness (Az-Zahra, 2021).

Not only limited to marketing, digitalization also opens up opportunities to improve the quality of customer service (Rahadi, & Wardiman, 2022). Communication platforms such as WhatsApp or chatbots on websites make it easier for MSME players to provide faster and more responsive services to customers. Some businesses report that using social media to interact directly with customers not only increases loyalty, but also strengthens relationships with consumers. However, making the most of social media also requires a good understanding of branding strategies and engaging content. Many MSME players still do not understand how to create content that can attract consumers' attention or how to manage their online reputation. Therefore, digital marketing strategies must be tailored to the characteristics of the business and the audience to be reached, so that their effectiveness can be



guaranteed. This also opens up opportunities for MSME players to innovate in offering products or services that are more in line with consumer needs in this digital era.

Finally, although many MSME players have turned to digital marketing, the difficulty in building a strong brand and recognizing the right audience remains a big challenge (Sumarnii, et.al., 2020). The success of digital marketing is not only determined by how many platforms are used, but also by how MSME players can adapt their strategies to the dynamic needs of the market. For example, for MSMEs selling local products or handicrafts, it is important to show the uniqueness of their products through stories that can touch consumers' emotions. Therefore, in addition to relying on technology to expand their market, MSME players also need to be more creative in marketing their products. Further training on how to manage social media, recognize market trends, and utilize digital analytics tools are key in increasing the success of digital marketing for MSMEs.

2. Operational Efficiency through Technology

The use of technology for operational efficiency among MSME players has also shown significant development during the pandemic. One of the most striking is the shift from manual recording to the use of digital cashier applications that make it easier for MSME players to monitor transactions and financial reports. This application allows real-time management of finances and stock of goods, thus minimizing the risk of recording errors that can harm the business (Pratama & Jefri, 2024). Digital inventory management systems allow MSME players to monitor stock of goods more efficiently, as well as organize a more structured and transparent flow of goods distribution. The implementation of this technology not only saves time and effort, but also allows businesses to focus on product development and customer service. Furthermore, the use of e-wallets and QR codes for digital payment systems simplifies transactions, reduces the hassle of manual payments, and increases convenience for

consumers who prefer contactless transactions (Mulya, 2024).

However, although the use of this technology provides many benefits, some MSME players still face barriers in accessing and implementing the technology systems needed. Some businesses revealed that they feel burdened by high initial costs for the necessary software and hardware. Investment in technology is indeed a limiting factor, especially for MSMEs that operate with limited capital and must consider their expenditures carefully (Syailendra et.al., 2024). In addition, some MSME players also experience difficulties in choosing the right technology for their operational needs. With a wide selection of applications and systems available, the wrong selection can lead to waste and failure to optimize the potential of existing technology. Therefore, although technology can improve efficiency, its implementation requires careful consideration and support from various parties, be it from government agencies, the private sector, or technology providers.

In addition, some MSME players revealed that they find it difficult to operate the newly implemented technology, especially for those who lack a technology background. The use of digital cashier systems and other management software requires technical skills that not all MSME players possess. Limitations in digital skills are a major barrier to technology adoption, especially for those who are not familiar with the software or applications used (Maimuna et.al., 2024). For this reason, it is important to have training and mentoring so that MSME actors can utilize technology more optimally. Training programs that focus on improving technological skills can help reduce the gap between MSME actors who have adapted to digitalization and those who have not. The government and related organizations need to work together to provide training that suits the needs of MSME players, so that they can take advantage of technology to optimize their business operations.

Not only that, the biggest challenge in technology adoption also comes from external factors, such as the availability of supporting infrastructure (Rohmana, 2023). Some MSMEs



in areas with limited internet access or unstable signals face difficulties in utilizing technology for daily operations. Dependence on good internet access is an issue that needs to be considered, because MSMEs that do not have a strong internet connection will find it difficult to operate cashier applications or cloud-based management systems. In addition, the high cost of internet subscriptions is also an obstacle for MSME players in certain areas. Therefore, improving infrastructure and providing more affordable and stable internet access should be a priority in supporting the digitalization of MSMEs, especially in underdeveloped areas.

3. Infrastructure Constraints and Digital Literacy

The main obstacle faced by MSME players in the technology adaptation process is the limited existing infrastructure, especially internet access that has not been evenly distributed throughout Indonesia. Many MSME players operating in remote or less developed areas experience difficulties in accessing high-speed internet, which hinders them from utilizing digital platforms to their full potential. In areas with poor network quality, using technology for online marketing or transactions becomes inefficient and time-consuming. This reduces the effectiveness of the technology adopted and hinders the growth of MSMEs in the digital era. These infrastructure limitations also impact the progress of the MSME sector as a whole, as they are unable to access the wider market available through digital platforms (Del Rosa, 2022).

In addition to infrastructure issues, the low level of digital literacy is also a major obstacle in the application of technology among MSME players (Rauf et.al., 2024). Many MSME players do not have sufficient understanding of how to optimize technology to improve their productivity and marketing. Most businesses find it difficult to understand the various applications and software that can improve their business efficiency. In addition, a lack of training on digital marketing strategies, social media management, and data analytics prevents them from optimizing the potential of available technology. Without adequate digital

skills, MSME players will find it difficult to utilize technology to improve their business performance, posing a major challenge in improving their competitiveness in the global market.

The difficulty in utilizing technology is also caused by a lack of support from various parties, be it the government, private sector, or educational institutions. Many MSME players find it difficult to find information about technology tools that suit their needs, and do not know how to implement them. Most MSME players do not have access to training that can improve their technology skills. For this reason, initiatives from the government and private sector are needed to provide more extensive training and digital empowerment programs. These programs should be tailored to the needs of MSME players in different sectors and regions, and be easily accessible, both in person and online (Suwali et.al., 2024).

To overcome this obstacle, the government plays an important role in providing training and mentoring programs that focus on improving digital literacy for MSME players. The government needs to ensure that MSME players in remote areas can also gain equal access to digital training programs. In addition, strengthening infrastructure is also key to ensuring that all MSME players can access technology smoothly. Therefore, there is a need for collaboration between the government, private sector, and educational institutions to comprehensively support the digitalization of MSMEs, so that they can compete and survive in a market that increasingly relies on technology (Novitasari, 2022).

CONCLUSIONS

Overall, this study found that technology has become an important element in the adaptation strategies of MSME players during the pandemic. Digitalization of marketing and the use of technology for operational efficiency provide many benefits, but constraints in terms of infrastructure and digital literacy are still significant barriers. For this reason, a joint effort is needed from the government, private sector, and educational institutions to improve



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technological infrastructure and provide more intensive training to MSME players. This is expected to accelerate a more equitable technology adaptation process across the MSME sector, allowing them to not only survive, but also thrive in the face of an ever-evolving digital era

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