



Post-Pandemic MSME's and Sustainable Development in Solo City

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Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in Indonesia's economy, accounting for approximately 60% of the national GDP and employing 97% of the workforce. However, the COVID-19 pandemic severely disrupted MSME sustainability, particularly in Solo, thereby impacting their contribution to the Sustainable Development Goals (SDGs). This study explores the role of MSMEs in advancing the SDGs and identifies the challenges they face. Employing a qualitative case study approach, data were collected through in-depth interviews with 15 purposively selected MSME actors. Thematic analysis revealed that MSMEs contribute significantly to SDG 8 (Decent Work and Economic Growth) by sustaining employment, to SDG 9 (Industry, Innovation, and Infrastructure) through digital adaptation, and to SDG 10 (Reduced Inequalities) by promoting inclusive entrepreneurship. Despite these contributions, MSMEs continue to face obstacles, including declining revenues, restricted access to financing, and supply chain disruptions. The findings underscore the need for targeted policy interventions, including streamlined financial access, capacity-building initiatives, and infrastructure support. Strengthening digital literacy and fostering collaborative business ecosystems are essential strategies to enhance the resilience and long-term sustainability of MSMEs in the post-pandemic recovery phase.

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in Indonesia's economic and social development (Maksum *et al.*, 2020). With more than 64 million business units, MSMEs contribute approximately 60% of the national Gross Domestic Product (GDP) and absorb around 97% of the total workforce (Setyowati *et al.*, 2024; Widodo *et al.*, 2024). At the local level, the city of Solo has experienced significant growth in the MSME sector, increasing from 11,100 units in 2021 to 13,200 units in 2022. However, the number declined to 12,872 units in 2023, reflecting the lingering impacts of the COVID-19 pandemic. Many MSMEs continue to face structural challenges, including declining sales—experienced by 56% of enterprises—and limited access to financing, affecting 22% of business owners (Sumarta & Supriyono, 2021; Kuncoro & Harjono, 2022).

Beyond being a public health crisis, the COVID-19 pandemic severely tested the economic resilience of MSMEs and their capacity to contribute to the Sustainable Development Goals (SDGs). In response, many enterprises adopted digital technologies, restructured their business processes, and developed new operational models to sustain their activities (Bai *et al.*, 2021; Gao *et al.*, 2023; Kawane *et al.*, 2024). Digital transformation has become increasingly crucial in the Industry 4.0 era, as MSMEs that can adapt to technology demonstrate greater resilience and operational continuity (Ghobakhloo & Iranmanesh, 2021; Ghobakhloo *et al.*, 2022).

The existing literature has extensively examined the contribution of MSMEs to national economic performance and their adaptive responses during the pandemic (e.g., Pu *et al.*, 2021; Ghobakhloo & Iranmanesh, 2021; Salim *et al.*, 2021; Sindhwani *et al.*, 2023; Singh *et al.*, 2023; Setyowati *et al.*, 2024; Widodo *et al.*, 2024). Several studies have also analyzed the general impact of the pandemic on MSME sustainability and resilience (Sahoo & Ashwani, 2020; Nordhagen *et al.*, 2021; Takeda *et al.*, 2022). However, limited research has explicitly

positioned MSMEs within the SDG framework in the post-pandemic context, particularly in linking enterprise-level strategies to specific SDG targets such as decent work and economic growth (SDG 8), industry, innovation, and infrastructure (SDG 9), and reduced inequalities (SDG 10) (Mukherjee *et al.*, 2020; Miftah *et al.*, 2023; Suresha *et al.*, 2023).

Moreover, prior studies tend to adopt macro-level or national perspectives, leaving a gap in localized, context-specific analyses of how MSMEs in particular regions contribute to SDG achievement after the crisis. Empirical evidence on the integration of MSME adaptation strategies and sustainability practices, and their measurable alignment with SDG targets at the city level, remains limited. In the case of Solo—recognized as a dynamic MSME hub, particularly in the culinary sector (Utami & Wahyudi, 2024)—no study has systematically and thematically examined how local MSMEs navigate post-pandemic recovery while supporting sustainable development objectives. This gap constrains a comprehensive understanding of how localized economic ecosystems contribute to global development agendas.

Addressing this gap is essential to clarify MSMEs' strategic position in the post-pandemic SDG landscape and to strengthen the empirical link between micro-level business resilience and broader development outcomes. By focusing on Solo City, this study positions itself at the intersection of MSME resilience, digital transformation, and local-level SDG implementation. Such positioning contributes to the literature by moving beyond generalized discussions of MSME recovery toward a more integrative framework that connects enterprise adaptation strategies with sustainable development targets.

This research analyzes the role of MSMEs in Solo City in supporting the achievement of the SDGs after the COVID-19 pandemic. It identifies the primary challenges MSMEs face in maintaining business sustainability, explores strategies adopted to survive and innovate—including digital transformation and business

model adaptation—and formulates policy recommendations to strengthen MSMEs' contributions to sustainable development.

By providing empirical evidence from a city-level case study, this research enriches the literature on MSMEs and sustainable development in three ways. First, it offers a contextualized analysis of post-pandemic MSME resilience within the SDG framework. Second, it integrates qualitative insights on adaptation strategies with development-oriented indicators. Third, it generates evidence-based policy recommendations for local governments, MSME associations, and other stakeholders to design targeted interventions that enhance the long-term sustainability and inclusiveness of MSME-driven growth. Through this contribution, the study reinforces the strategic importance of MSMEs as key actors in advancing inclusive and sustainable economic development in Indonesia.

RESEARCH METHODS

This study uses a qualitative case study approach (Rashid *et al.*, 2019) to analyze the role of Micro, Small, and Medium Enterprises (MSMEs) in supporting the achievement of the Sustainable Development Goals (SDGs) in the city of Solo after the COVID-19 pandemic. The case study method was chosen because it allows an in-depth exploration of MSMEs' dynamics, challenges, and adaptation strategies in dealing with economic crises during and after the pandemic. This research is located in the city of

Solo, Central Java (see Figure 1), and the research subjects are 15 MSME actors who continue to operate during the pandemic and apply sustainability principles. Informants were selected using purposive sampling techniques (Etikan *et al.*, 2016) based on three main criteria: (1) operational sustainability during the pandemic, (2) contribution to the SDGs through sustainable business practices, and (3) involvement in the informal economy sector.

The research data consists of primary and secondary data. Primary data were collected through in-depth interviews (Hollway and Jefferson, 1997) with MSME actors, using open-ended questions to explore their experiences with the pandemic's impact, the challenges they faced, and the strategies they implemented to survive and contribute to achieving the SDGs. Meanwhile, secondary data were obtained from various sources, including government policy documents on MSME development, Scopus-indexed scientific literature on the impact of COVID-19 on the economy, and relevant statistical data, such as regional economic reports and post-pandemic MSME surveys. Data was collected through two main techniques: in-depth interviews and documentation. In-depth interviews are used to obtain detailed information from MSME actors. At the same time, documentation techniques are used to gather relevant reports, policies, and prior studies to strengthen the analysis. Details of the interview questions are shown in Table 1.

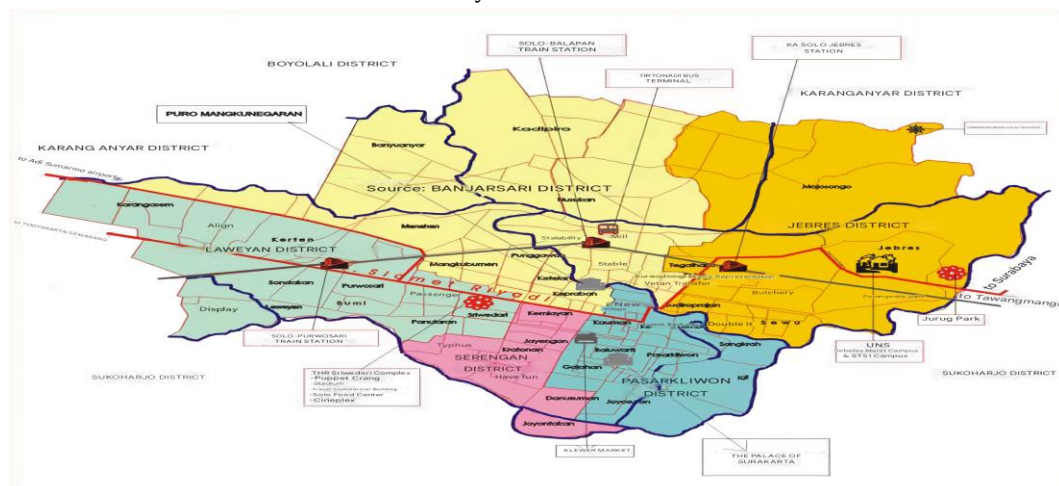


Figure 1. Respondent's Location in Solo City

The data were analyzed using a thematic analysis method (Clarke and Braun, 2017), which comprises three main stages. The first stage is data transcription, which is the process of recording all interview recordings in detail to ensure the accuracy of the information. The second stage is data reduction and thematic categorization, which involves grouping information by the main themes that emerge, such as the impact of COVID-19 on MSMEs, adaptation strategies and business innovation, and the contribution of MSMEs to achieving the SDGs. The third stage is drawing conclusions and interpretations, in which the main patterns in the categorized data are further analyzed and linked to the research questions. This study used source triangulation to ensure the validity and credibility of the data (Thurmond, 2001). This study compared the information from various informants and confirmed it with relevant secondary data. In addition, the data's consistency was tested through discussions and validation of findings with MSME actors and experts in economics and public policy. With this approach, the research is expected to provide comprehensive insights into the role of MSMEs in post-pandemic economic recovery and their contribution to achieving the SDGs in Solo City.

RESULTS AND DISCUSSION

MSMEs in Solo City play a strategic role in advancing the achievement of the Sustainable Development Goals (SDGs) following the COVID-19 pandemic. The role includes three main aspects: economic, social, and environmental. From an economic perspective, MSMEs create jobs and maintain local economic stability, especially amid a pandemic. Research by Nandeeswaraiah and Ramana (2020) shows that MSMEs play a vital role in the economies of developing countries by absorbing large numbers of workers. In addition, MSMEs increase economic resilience by diversifying community income sources (Sindhvani *et al.*, 2023). Ahmad Suryanto, the owner of a traditional culinary restaurant, emphasized that "MSMEs are the heart of the economy, especially in Solo. Many residents depend on small businesses, including

myself. In addition to opening jobs, MSMEs also help to promote local culture" (Interview, February 22, 2025).

In addition to the culinary sector, the confectionery industry in Solo has also been significantly impacted by MSMEs. Ridwan Maulana, the owner of the convection business, stated that "many local retail and distro businesses depend on small convection production like mine" (Interview, March 2, 2025). The study by Supari and Anton (2022) confirmed that MSMEs have an important role in post-crisis economic recovery through innovation and business resilience. Research by Kussudyarsana *et al.* (2023) also shows that MSMEs that can innovate their businesses during the crisis have a higher rate of economic recovery than businesses that rely solely on conventional methods. One of the main strategies MSMEs in Solo City have adopted to mitigate the impact of the pandemic is digital technology adoption and product diversification. Wahyu Hidayat, owner of an automotive workshop, said, "I never thought of using digital for a workshop before, but after the pandemic, I realized this is very important" (Interview, February 22, 2025). This digital transformation aligns with the findings of Gao *et al.* (2023), who show that MSMEs' adoption of digital technology increased business resilience during the COVID-19 pandemic.

In addition to playing a role in economic stability, MSMEs have a significant social impact, especially in empowering vulnerable groups such as women and informal workers. A study by Nandeeswaraiah and Ramana (2020) shows that MSMEs contribute to poverty reduction by providing employment opportunities for low-income communities. Furthermore, Abdurrohman (2023) emphasized that MSMEs managed by women have a greater impact on improving household welfare and children's education. Siti Nurjanah, the owner of a Muslim fashion online store, stated, "MSMEs are not only about making a profit but can also help others, for example, by opening jobs for housewives who need additional income" (Interview, February 22, 2025). Likewise, in the

culinary sector, Dian Puspitasari added that "many mothers who initially only tried to sell from home, eventually were able to develop into a real business" (Interview, March 2, 2025).

The social role of MSMEs is also strengthened by a network of entrepreneurial communities that help businesses adapt during the pandemic. Nurul Aisyah emphasized that "sharing experiences with fellow businessmen is more effective than learning alone" (Interview, February 28, 2025). The study by Pankov *et al.* (2021) supports these findings, stating that the entrepreneurial community plays an important role in improving MSME sustainability through knowledge sharing and collaboration. In addition, Coles *et al.* (2021) found that social networks among MSMEs play an important role in increasing business resilience by providing wider access to information and resources. However, the training programs provided to MSME actors still face limitations. Many informants stated that their training tended to be too theoretical and less applicable. Budi Santoso, a handicraft entrepreneur, revealed that "many trainings are still not relevant for the craft sector like me" (Interview, February 22, 2025). Anuradha and Ramesh (2020) noted that many MSME training programs remain general and have not been tailored to industry-specific needs. On the other hand, the study by Sutrisno *et al.* (20233) shows that skills-based training is more effective than theory-based training in increasing MSME competitiveness.

Although most MSMEs in Solo City are still focusing on economic and social aspects, some are starting to adopt more environmentally friendly business practices. This result aligns with SDG 12, which emphasizes sustainable production and consumption. Bambang Setiawan, a wooden furniture craftsman, stated, "I started using wood from a more environmentally friendly source so that this business can continue to run without damaging nature" (Interview, February 28, 2025). In the fashion industry, Laila Nurhidayah highlighted that "thrift fashion also supports sustainability because it reduces textile waste" (Interview, February 28, 2025). However, MSMEs'

implementation of sustainable business practices still faces challenges, especially in accessing more expensive, environmentally friendly raw materials. The study by Caldera *et al.* (2019) shows that limited capital and a lack of government incentives are the main obstacles to implementing sustainable business practices in the MSME sector. Therefore, policies that support incentives for MSMEs to implement environmentally friendly practices, such as subsidies for green raw materials or easier access to financing for investment in sustainable technology, are needed.

MSMEs in Solo City faced various challenges during the COVID-19 pandemic, which can be categorized into four main areas: declining turnover due to reduced consumer purchasing power, supply chain disruptions, difficulties accessing capital assistance and government programs, and obstacles to adapting to digital marketing. Most MSME actors experienced a significant decrease in turnover, mainly due to shifts in consumer spending that prioritized basic needs. A study by Fairlie (2020) shows that small businesses in various sectors experienced a sharp economic contraction due to restrictions on activities and decreased market demand. Lu *et al.* (2020) also revealed that the retail, culinary, and creative sectors were the most affected during the pandemic.

This issue was felt directly by Ahmad Suryanto, the owner of a traditional culinary restaurant, who revealed that "Restaurants that are usually crowded suddenly are quiet, turnover drops to more than half. I had thought about closing temporarily, but yes, employees still need a salary" (Interview, February 22, 2025). A similar challenge was experienced by Budi Santoso, a handicraft business actor, who explained that "Tourism stopped, yes, automatically my business was also affected. In addition, raw materials were also scarce because distribution was disrupted. I have to change my brain so that I can continue to produce without relying on materials that are difficult to get" (Interview, February 22, 2025). In the fashion sector, Siti Nurjanah added that the pandemic has made people prioritize basic needs over

fashion shopping: "Many people used to subscribe, but during the pandemic, they focused more on basic needs. Fashion is not a priority" (Interview, February 22, 2025). This finding aligns with Suasih and Budhi (2023), who reported that MSMEs in the non-essential sector experienced a drastic decrease in demand during the pandemic.

In addition to experiencing lower turnover, many MSMEs face supply chain disruptions that lead to shortages of raw materials and price increases. This disruption is confirmed by research by Diaz *et al.* (2024), which shows that global supply chain disruptions lead to increases in raw material prices and stock shortages across various industrial sectors. Wahyu Hidayat, a motorcycle repair shop owner, stated, "Spare parts are also difficult to get. Many distributors have empty stock or prices have increased" (Interview, February 22, 2025). A similar challenge was experienced by Bambang Setiawan, a wooden furniture craftsman, who had difficulty obtaining raw materials: "Wood is getting more expensive, but if I increase the price, customers run away" (Interview, February 28, 2025). In the food and beverage industry, Rina Kartika, a home catering owner, also revealed that "In addition to reduced orders, I was also affected by the rising price of raw materials. Sometimes I have to rack my brains to keep giving a reasonable price to customers" (Interview, February 22, 2025).

In addition, many MSME actors have difficulty accessing government capital assistance and economic stimulus programs. A study by Sahoo and Thakur (2023) found that complex bureaucracy and a lack of program socialization are the main obstacles to MSMEs utilizing available assistance. Siti Nurjanah stated, "There is a capital assistance program, but the process is complicated, and the requirements are very many, so I do not have time to take care of it" (Interview, February 22, 2025). The same thing was expressed by Sri Lestari, the owner of a basic food stall: "I had heard that there was capital assistance for MSMEs, but the process was complicated, so I did not participate in the list" (Interview, February 22, 2025). Agus Raharjo, a

horticultural farmer, also experienced a similar obstacle: "Financial assistance is also available, but the requirements are complicated, so many farmers cannot access it" (Interview, February 28, 2025). These barriers point to the need to reform the MSME assistance mechanism to make it more accessible to small business actors, as Singh *et al.* (2023) recommended. Lack of transparency and administrative complexity in aid distribution can hinder economic recovery for needy MSMEs.

Although digital marketing is the main solution for many MSMEs to survive during the pandemic, some business actors have had difficulty adopting digital technology. A study by Civelek *et al.* (2023) revealed that the lack of digital literacy is the main obstacle for MSMEs in optimizing e-commerce platforms. Ahmad Suryanto stated, "Honestly, I used not to understand the online system, but because of the situation, I did not want to learn" (Interview, February 22, 2025). A similar challenge was experienced by Bambang Setiawan, who revealed that "Honestly, at first I did not understand digital at all, Mas. But because of the forced circumstances, I studied slowly" (Interview, February 28, 2025).

On the other hand, some MSMEs trying to adopt digital marketing feel that the training available is still not applicable. Budi Santoso emphasized that "I had participated in digital marketing training from the government, but it was more theory than practice" (Interview, February 22, 2025). This result confirms the need for a more practice-based training program to enable MSMEs to optimize digital marketing effectively (Wongpun *et al.*, 2024). By providing training that is more applicable and easier to understand, MSMEs in Solo City are expected to adapt to market changes and maintain business continuity post-pandemic.

The COVID-19 pandemic has posed a major challenge for MSMEs, leading to declines in demand, supply chain disruptions, and limited access to capital (Nordhagen *et al.*, 2021). However, this study found that MSMEs in Solo City implemented various adaptation strategies to survive the crisis. These can be categorized

into three main areas: digital marketing, product diversification, and operational and financial strategies.

Digital transformation is the main strategy MSMEs adopt to reach more customers and maintain turnover (Martínez-Peláez *et al.*, 2023). Many MSME actors in Solo City who previously relied on offline sales have finally switched to digital marketing through social media and marketplaces. Ahmad Suryanto, the culinary restaurant owner, revealed, "I did not understand the online system at first. But, because of the situation, I wanted to learn. I started actively promoting through social media, even though I usually rely on regular customers" (Interview, February 22, 2025). A similar experience was reported by Budi Santoso, the owner of a handicraft business, who stated, "I used to sell more directly in stores, now I start selling through marketplaces and social media" (Interview, February 22, 2025). Meanwhile, Siti Nurjanah, the owner of a Muslim fashion online store, emphasized the role of social media in maintaining her business, saying, "I am increasingly aggressive in promoting on social media, giving discounts, and making giveaways to increase customer engagement" (Interview, February 22, 2025). These findings align with research by Gao *et al.* (2023), which showed that MSMEs that adopt digital marketing are more likely to survive than those that rely solely on conventional methods.

In addition to digitalization, many MSMEs are implementing product diversification strategies to remain relevant to changing market needs due to the pandemic (Nadyan *et al.*, 2021). This strategy allows MSMEs to tailor their products and services to dynamic market demand. For example, Ridwan Maulana, the owner of a confectionery business, adjusted production by saying, "I started producing cloth masks at the beginning of the pandemic because the demand was high" (Interview, March 3, 2025). Rina Kartika, the owner of a home catering business, also diversified by selling more durable products, stating, "I am slamming the steering wheel of selling ready-to-eat food and frozen food.

Usually, I focus on event catering, but because many events are canceled, I changed the concept to more durable food" (Interview, February 22, 2025). Meanwhile, Wahyu Hidayat, the owner of the workshop, also adjusted the service by opening an online order and a booking system for customers so that they do not have to queue, saying, "I made a booking system so that customers do not have to queue for a long time at the workshop" (Interview, February 22, 2025). This diversification strategy aligns with the findings of Meitiana *et al.* (2024), who noted that MSMEs that can adapt their products and services to market conditions have a higher level of business continuity.

On the other hand, to reduce the risk of excess stock and maintain healthy cash flow, some MSMEs implement a pre-order and reseller system as an operational strategy. This step aligns with the findings of Sreedevi and Saranga (2017), which show that a flexible stock management strategy can help MSMEs avoid large losses due to market uncertainty. Laila Nurhidayah, the owner of the thrift fashion business, stated, "I am more focused on the pre-order system now. I used to have much stock of goods, but now I am more selective in taking goods that are indeed in great demand" (Interview, February 28, 2025). Nurul Aisyah, an organic cosmetics entrepreneur, also adjusted her operations by saying, "I used to have much stock, now I use a pre-order system for certain products so that no items are piling up" (Interview, February 28, 2025). In addition, price adjustment and product bundling strategies are also widely applied to maintain customer purchasing power during an economic downturn (Lin *et al.*, 2020). Nurul Aisyah explained, "I make economical packages so that the product is more affordable for customers with limited budgets" (Interview, February 28, 2025). Rina Kartika added, "I tried a pre-order system for frozen food, so the capital is from customer money first" (Interview, February 22, 2025). A study by Wang *et al.* (2022) confirms that pre-order strategies can help MSMEs overcome liquidity issues and reduce the risk of over-inventory. In addition, research by Honhon and Pan (2017) states that product

bundling systems can increase customer purchasing power during economic recessions.

By implementing digital marketing strategies, product diversification, and adaptive operational and financial management, MSMEs in Solo City were able to survive amid economic pressure from the pandemic. Their success shows that flexibility in responding to market changes is key to maintaining business continuity in crises.

The COVID-19 pandemic has accelerated digital transformation in the MSME sector, making digitalization a key factor in helping small businesses adapt to market changes. Due to physical limitations imposed by the pandemic, digital technology enables MSMEs to continue operating and increase their resilience during economic crises (Khalil *et al.*, 2022; Putritamara *et al.*, 2023). This study found that most MSME actors in Solo City recognize the importance of digital innovation for their business recovery.

One of the most widely adopted forms of digital innovation is e-commerce platforms and digital payment methods. Many business actors who previously relied on offline sales have begun to switch to online marketplaces to reach a wider range of customers. A study by Gao *et al.* (2023) shows that digitalization improves MSME operational efficiency and expands market reach, especially amid limited mobility during the pandemic. Siti Nurjanah, a Muslim fashion online store owner, said, "Without digital, maybe my business would have closed during the pandemic. I sell a lot through Instagram, Shopee, and TikTok" (Interview, February 22, 2025). A similar thing was experienced by Budi Santoso, a handicraft entrepreneur, who stated, "I used to sell more directly in stores, now I start selling through marketplaces and social media" (Interview, February 22, 2025). Ridwan Maulana, the owner of the convection business, added that "now digital is mandatory. I started selling convection services via Instagram and WhatsApp, and now I even opened a store in the marketplace for individual screen printing orders" (Interview, March 3, 2025).

In addition to e-commerce, MSMEs are also increasingly adopting digital payment methods. A study by Kilay *et al.* (2022) shows

that transaction digitization increases payment efficiency and accelerates the capital turnover of MSMEs. In Indonesia, implementing QRIS as a digital payment method has enabled easier transactions and increased financial inclusion for small businesses (Fina *et al.*, 2023). Ahmad Suryanto, the owner of a traditional culinary restaurant, revealed that "In the past, I only used my cellphone for phone and WA, now I have to understand the online ordering system and QRIS for payment" (Interview, February 22, 2025).

Not only in transactions, but MSMEs also use digitalization to strengthen branding and marketing through social media. The study by Sinaga *et al.* (2024) revealed that MSMEs that actively use social media in their marketing strategies experience higher turnover growth than those who still rely on conventional methods. Meanwhile, research by Kumar *et al.* (2024) confirms that social media-based digital marketing fosters closer customer engagement and accelerates sales conversion. Nurul Aisyah, an organic cosmetics entrepreneur, said, "I use social media to educate customers about the benefits of organic cosmetics, and I also make more transactions through the marketplace now" (Interview, February 28, 2025). Laila Nurhidayah, the owner of a thrift fashion business, added that "now people prefer to see live videos rather than just photos, so I often do live shopping so that customers can see the details of their goods" (Interview, February 28, 2025). The same was done by Dian Puspitasari, the owner of a cake and bread business, who stated, "In the past, I only relied on orders from people around me, but now I am actively promoting on Instagram and WhatsApp" (Interview, March 3, 2025).

Digital marketing strategies that are increasingly popular post-pandemic include live selling and influencer collaborations. Live selling allows MSMEs to showcase their products directly and interact with customers in real time, while collaborations with influencers help increase brand visibility. Wongkitrungrueng *et al.* (2020) and Clement Addo *et al.* (2021) found that MSMEs adopting live selling strategies experienced a significant increase in customer

engagement compared with conventional marketing methods. Siti Nurjanah explained that "now, people prefer to see product videos rather than just photos, so I started making fashion haul content, mix, and match tutorials, that is it. Alhamdulillah, from there many new customers came" (Interview, February 22, 2025). Bambang Setiawan, a furniture craftsman, also tried a similar strategy: "I try to work with some small influencers to help promote products" (Interview, February 28, 2025).

While digital adoption brings many benefits, its implementation still has challenges. One of the main obstacles is the digital divide among MSMEs, particularly in terms of technology literacy and access to adequate digital infrastructure. Research by Gao *et al.* (2023) revealed that many MSME actors struggle to understand digital marketing, e-commerce logistics, and digital-based financial management. Therefore, collaborative efforts are needed between the government, digital platforms, and educational institutions to improve digital literacy and ensure that all MSMEs can fully benefit from digital transformation.

Government assistance and training during the COVID-19 pandemic are designed to help MSMEs survive significant economic impacts. However, the interviews show that this program still faces several obstacles in its implementation. One of the main problems is the difficulty of accessing capital assistance due to complicated administrative procedures. Although digitalization and online marketing training are quite helpful, their effectiveness is still limited because the material delivered often does not meet the specific needs of each MSME sector.

Most MSME actors in Solo City said the government's capital assistance program is ineffective due to complex, difficult requirements. This result aligns with the findings of Kurniawan *et al.* (2023), who found that many MSMEs in developing countries faced administrative obstacles to accessing financial assistance during the pandemic. These obstacles are often caused by business actors' inability to

meet legal requirements and strict banking requirements (Demirgüç-Kunt and Klapper, 2013). Siti Nurjanah, the owner of a Muslim fashion online store, stated that "at that time, there was a capital assistance program, but the process was complicated, and the requirements were very many, so I did not have time to take care of it" (Interview, February 22, 2025). The same thing was also expressed by Sri Lestari, the owner of a basic food stall, who said, "I had heard that there was capital assistance for MSMEs, but the requirements were many and complicated. So I did not join the list" (Interview, February 22, 2025).

This condition shows that, although the government has provided financial assistance to MSMEs, the distribution mechanism remains uninclusive and does not fully reach small business actors in need. Okuwhere and Osagie (2022) noted that financial assistance during the pandemic was more accessible to medium- to high-scale businesses than to microenterprises, which faced limitations in meeting administrative requirements. In addition, Maran (2022) notes that MSMEs in Southeast Asia face significant challenges in accessing funding due to low financial literacy and difficulties meeting formal credit requirements.

Regarding training, some MSME actors feel the government's digital training program is quite useful, especially for online marketing. However, many of them find the training materials too generic and not well-suited to their business's specific needs. Wahyu Hidayat, the owner of an automotive workshop, stated, "I had participated in digital marketing training, not bad to increase my knowledge. But if I have financial assistance, yes, I will survive more on my own" (Interview, February 22, 2025). The same thing was expressed by Ahmad Suryanto, the owner of a traditional culinary restaurant, who assessed that "digital training is good, but sometimes the material is not specific for culinary businesses like mine. If possible, there is more technical training" (Interview, February 22, 2025).

In this context, research by Marjukah (2022) shows that digital training programs for MSMEs during the pandemic tend to be overly

generic and fail to account for sector-specific needs. Research by Siregar *et al.* (2022) shows that MSMEs that receive industry-specific training are more likely to survive and grow during the pandemic. Estiarto *et al.* (2024) also emphasized that digitalization in MSMEs is more effective when supported by sector-based training and accompanied by direct assistance.

In addition to government training, many MSME actors in Solo City rely on the business community and independent training platforms to acquire digital skills and online marketing expertise. Nurul Aisyah, an organic cosmetics entrepreneur, stated, "The digital marketing training I participated in was quite helpful, especially in optimizing advertising on social media. However, there is also too general and irrelevant training for the beauty business" (Interview, February 28, 2025). This response indicates that MSME actors are more likely to seek training tailored to their specific business needs rather than participate in government-provided programs.

Research by Iturrioz *et al.* (2015) shows that entrepreneurial community networks are important for increasing MSME business adaptation by facilitating the sharing of experiences and innovation strategies. In addition, Caraka *et al.* (2023) found that collaboration among MSMEs in the business community can enhance business resilience, especially during economic crises. Therefore, a more community-based training approach tailored to the specific needs of the business sector can be a more effective solution in supporting the sustainability of MSMEs post-pandemic.

Based on interviews with MSME actors in the city of Solo, several policy recommendations can be implemented to strengthen MSMEs' long-term sustainable contribution. These recommendations include simplifying access to capital, business sector-based training programs, raw material subsidies, strengthening MSME community networks, and improving digital infrastructure and access to online marketing. The main obstacle MSMEs face is the difficulty of accessing capital, especially for small

businesses affected by the pandemic. Several MSME actors revealed that the procedure for government capital assistance is still too complicated and often does not align with field conditions.

Siti Nurjanah, the owner of a Muslim fashion online store, stated that "At that time, there was a capital assistance program, but the process was complicated, and the requirements were very many, so I did not have time to take care of it" (Interview, February 22, 2025). The same thing was conveyed by Agus Raharjo, a horticultural farmer, who added that "financial assistance exists, but the requirements are complicated, so many farmers cannot access it" (Interview, February 28, 2025). Research by Dewi *et al.* (2023) confirms that more flexible access to finance can increase MSME resilience in the face of crises. Therefore, the suggested policies include simplifying the process of applying for People's Business Credit (KUR) with easier administrative requirements for small and micro MSMEs, opening access to fintech-based funding to accelerate capital distribution to the MSME sector that traditional banks have not reached, and providing tax incentives and credit relief for MSMEs that are proven to contribute to the achievement of the SDGs, especially in the aspect of social and environmental empowerment.

In addition to access to capital, many MSME actors stated that the training programs available are still too common and not applicable to their specific industries. Budi Santoso, the owner of a handicraft business, stated that "There should be something more specific, for example, how to make handmade product branding or how to enter the export market" (Interview, February 22, 2025). Ridwan Maulana, the owner of a convection business, shared a similar opinion, saying, "I need more technical training on the efficiency of convection production and marketing, not just ordinary business theory" (Interview, March 3, 2025). According to Anuradha and Ramesh (2020), more relevant industry-based training can enhance MSME competitiveness. Therefore, policy recommendations include developing business

sector-based training programs, such as digital marketing for fashion MSMEs, export strategies for artisans, and production efficiency for the convection and small manufacturing sectors. In addition, a community-based mentoring approach, where senior MSME actors can practically guide beginner MSMEs in business management, and the provision of digital training modules that can be accessed anytime, are solutions to increase learning effectiveness for MSME actors with limited time.

The rise in raw material prices is a major challenge for many MSMEs, especially in the culinary, handicrafts, and manufacturing sectors. Bambang Setiawan, a wooden furniture craftsman, highlighted that "The price of materials continues to rise. If there is support from the government, it will be easier for small craftsmen like me to survive" (Interview, February 28, 2025). This situation is also felt by Sri Lestari, the owner of a grocery stall, who stated that "Sometimes distributors are late in delivering, the prices of rice, sugar, and oil continue to rise, while I cannot carelessly raise prices to customers" (Interview, February 22, 2025). According to Khurana *et al.* (2021), raw-material subsidies for MSMEs implementing sustainable production can increase their competitiveness. Therefore, the recommended policies include providing subsidies or price incentive schemes for MSMEs in sectors affected by fluctuations in raw material prices, logistics support for MSMEs in the agribusiness and food sectors to ensure supply chains remain stable, and encouraging cooperation between MSMEs and local raw material suppliers to reduce dependence on imports that are more vulnerable to global price increases.

In addition to challenges with capital, training, and raw materials, many MSME actors in Solo City have joined the business community to share information and business adaptation strategies. Wahyu Hidayat, the owner of an automotive repair shop, stated, "The community is very helpful! I often share with other workshop owners, so I can know their strategies to survive" (Interview, February 22, 2025). The same was expressed by Nurul Aisyah, who said, "Sharing

experiences with fellow businessmen is more effective than learning alone" (Interview, February 28, 2025). A study by Alshebami (2024) shows that the entrepreneurial community plays an important role in increasing MSME resilience through information exchange and collaboration. Policy recommendations in this aspect include the development of a digital-based MSME community ecosystem, such as information-sharing platforms facilitated by local governments, facilitating cooperation between MSMEs in the form of business incubators to increase competitiveness and expand the market, and providing regular discussion spaces between MSMEs and regulators, so that the policies implemented are more in line with the needs of business actors.

Digital transformation is the key to MSME growth in the future. Andi Saputra, owner of an educational technology start-up, stated that "now people are more open to technology, including in education. If in the past many were still skeptical about online learning, now they are starting to believe that technology can help business processes be more effective" (Interview, February 28, 2025). According to Gao *et al.* (2023), MSMEs that adopt digital technologies exhibit greater resilience to economic shocks. Therefore, the recommended policies include improving local digital infrastructure, expanding internet access for MSMEs in suburban areas, providing assistance programs in digital marketing such as SEO optimization, social media strategy, and e-commerce adoption, and encouraging cooperation between MSMEs and digital platforms to improve global market access. With the right policy implementation, MSMEs in Solo City can continue to play a strategic role in supporting the achievement of the SDGs, strengthening the local economy's resilience, and creating sustainable social and environmental impacts.

CONCLUSION

This research reveals that MSMEs in the city of Solo have a strategic role in achieving the Sustainable Development Goals (SDGs) after the

COVID-19 pandemic. From an economic perspective, MSMEs contribute to job creation and local economic stability. Meanwhile, in the social aspect, this sector empowers vulnerable groups and strengthens entrepreneurial networks. In addition, some MSMEs have begun adopting sustainable business practices that align with SDG 12 (Sustainable Consumption and Production), demonstrating the sector's potential to support sustainable development.

Although it has a crucial role in the economy and society, this study also finds various challenges MSMEs face. Declining turnover due to reduced people's purchasing power, supply chain disruptions, limited access to capital and government programs, and difficulties in adapting to digital marketing are the main obstacles. Many MSMEs implement survival strategies to face these challenges, such as business digitalization, product diversification, and operational and financial optimization. These findings show that the resilience of MSMEs depends not only on market conditions but also on the adaptability and innovation they develop.

Theoretically, the results of this study confirm that the resilience of MSMEs in facing crises is influenced not only by internal factors, such as business innovation and technology adoption, but also by external factors, including access to financing and supportive policies. From a practical perspective, digital transformation is a key factor for the sustainability of MSMEs, so more adaptive and inclusive policy interventions are needed to accelerate their adoption. Therefore, collaboration among the government, the private sector, and academia is crucial to ensuring that MSMEs can continue to develop amid changing economic dynamics.

Although this research provides in-depth insights into the roles and challenges of MSMEs, several limitations must be considered. One of the main limitations is the limited sample coverage of MSMEs in Solo City, which limits the generalizability of the results to other regions. In addition, this study has not examined the psychosocial factors that may affect MSMEs'

resilience during crises, such as individual resilience and social support.

The next study is recommended to conduct a comparative analysis with other regions to identify broader patterns in how MSMEs have adapted to the pandemic. In addition, the follow-up study can explore the effectiveness of various government policies to support MSMEs post-pandemic. Regarding policy, the government is expected to simplify access to financing, increase the effectiveness of sector-based training, and encourage incentives for MSMEs that implement sustainable business practices.

With the right policy support and innovative adaptation strategies, Solo City MSMEs can continue contributing to inclusive and sustainable economic growth. Furthermore, their role in achieving the SDGs in Indonesia will be even more significant, strengthening the resilient local economic foundations amid various global challenges.

REFERENCES

- Abdubrohim, D. (2023). Women's empowerment in MSMEs: analysis of social and economic impacts. *International Journal of Management and Business Economics*, 2(1), 49-53. <https://doi.org/10.58540/ijmebe.v2i1.467>
- Alshebami, A. S. (2024). Surviving the Storm: The Vital Role of Entrepreneurs' Network Ties and Recovering Capabilities in Supporting the Intention to Sustain Micro and Small Enterprises. *Sustainability*, 16(19), 8474. <https://doi.org/10.3390/su16198474>
- Anuradha, T. S., & Ramesh, H. N. (2020). Training as an effective tool for developing the performance of MSMEs: An empirical evidence. *Shanlax International Journal of Management*, 7(3), 82-88. <https://doi.org/10.34293/management.v7i3.1630>
- Bai, C., Quayson, M., & Sarkis, J. (2021). COVID-19 pandemic: lessons in digitization for the sustainable development of micro- and small enterprises. *Sustainable production and consumption*, 27(1), 1989-2001. <https://doi.org/10.1016/j.spc.2021.04.035>
- Caldera, H. T. S., Desha, C., & Dawes, L. (2019). Evaluating the enablers and barriers for successful implementation of sustainable business practice in 'lean'SMEs. *Journal of Cleaner Production*, 218(1), 575-590. <https://doi.org/10.1016/j.jclepro.2019.01.239>
- Caraka, R. E., Kurniawan, R., Chen, R. C., Gio, P. U., Jamilatuzzahro, J., Nasution, B. I., ... &

- Pardamean, B. (2023). Strategic insights for MSMEs: navigating the new normal with big data and business analytics. *Journal of Asia Business Studies*, 18(5), 1285-1307. <https://doi.org/10.1108/JABS-10-2022-0354>
- Civelek, M., Krajčák, V., & Ključnikov, A. (2023). The impacts of dynamic capabilities on SMEs' digital transformation process: The resource-based view perspective. *Oeconomia Copernicana*, 14(4), 1367-1392. <https://doi.org/10.24136/oc.2023.019>
- Clarke, V., & Braun, V. (2017). Thematic analysis. *The journal of positive psychology*, 12(3), 297-298. <https://doi.org/10.1080/17439760.2016.1262613>
- Clement Addo, P., Fang, J., Asare, A. O., & Kulbo, N. B. (2021). Customer engagement and purchase intention in live-streaming digital marketing platforms. *The Service Industries Journal*, 41(11), 767-786. <https://doi.org/10.1080/02642069.2021.1905798>
- Coles, T., Ritchie, B. W., & Wang, J. (2021). Building business resilience to external shocks: Conceptualizing the role of social networks to small tourism & hospitality businesses. *Journal of Hospitality and Tourism Management*, 48(1), 210-219. <https://doi.org/10.1016/j.jhtm.2021.06.012>
- Demirgüç-Kunt, A., & Klapper, L. (2013). Measuring financial inclusion: Explaining variation in use of financial services across and within countries. *Brookings papers on economic activity*, 2013(1), 279-340. <https://doi.org/10.1353/ECA.2013.0002>
- Dewi, N. G., Ridhasyah, R., & Wibawa, T. A. (2023). Financial Access and MSMEs Performance During the COVID-19 Pandemic: the Moderating Role of Digitization. *Journal of Developing Economies (JDE)*, 8(1), 144-152. <https://doi.org/10.20473/jde.v8i1.36843>
- Diaz, E. M., Cunado, J., & de Gracia, F. P. (2024). Global drivers of inflation: The role of supply chain disruptions and commodity price shocks. *Economic Modelling*, 140(1), 106860. <https://doi.org/10.1016/j.econmod.2024.106860>
- Estiarto, L. P., Suraji, R., Istianingsih, I., & Hapzi, H. (2024). Peningkatan Kinerja Usaha Mikro, Kecil, dan Menengah (UMKM) di Hjo Chi Minh, Vietnam Melalui Transformasi Digital dan Pelatihan Kewirausahaan. *Jurnal Pengabdian Masyarakat Dan Penelitian Terapan*, 2(1), 28-35. <https://doi.org/10.38035/jpmppt.v1i4.505>
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, 5(1), 1-4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Fairlie, R. (2020). The impact of COVID-19 on small business owners: Evidence from the first three months after widespread social-distancing restrictions. *Journal of Economics & Management Strategy*, 29(4), 727-740. <https://doi.org/10.1111/jems.12400>
- Fina, V., Rettobjaan, C., Widnyani, N. M., Riyan, K., & Richadinata, P. (2023). The influence of the QRIS payment system on the business performance of Denpasar City MSMEs. *Journal of Economics and Public Health*, 2(4), 155-162. <https://doi.org/10.37287/jeph.v2i4.2643>
- Gao, J., Siddik, A. B., Khawar Abbas, S., Hamayun, M., Masukujjaman, M., & Alam, S. S. (2023). Impact of E-commerce and digital marketing adoption on the financial and sustainability performance of MSMEs during the COVID-19 pandemic: An empirical study. *Sustainability*, 15(2), 1594. <https://doi.org/10.3390/su15021594>
- Ghobakhloo, M., & Iranmanesh, M. (2021). Digital transformation success under Industry 4.0: a strategic guideline for manufacturing SMEs. *Journal of Manufacturing Technology Management*, 32(8), 1533-1556. <https://doi.org/10.1108/JMTM-11-2020-0455>
- Ghobakhloo, M., Iranmanesh, M., Vilkas, M., Grybauskas, A., & Amran, A. (2022). Drivers and barriers of Industry 4.0 technology adoption among manufacturing SMEs: a systematic review and transformation roadmap. *Journal of Manufacturing Technology Management*, 33(6), 1029-1058. <https://doi.org/10.1108/JMTM-12-2021-0505>
- Hollway, W., & Jefferson, T. (1997). Eliciting narrative through the in-depth interview. *Qualitative inquiry*, 3(1), 53-70. <https://doi.org/10.1177/107780049700300103>
- Honhon, D., & Pan, X. A. (2017). Improving profits by bundling vertically differentiated products. *Production and Operations Management*, 26(8), 1481-1497. <https://doi.org/10.1111/poms.12686>
- Iturrioz, C., Aragón, C., & Narvaiza, L. (2015). How to foster shared innovation within SMEs' networks: Social capital and the role of intermediaries. *European Management Journal*, 33(2), 104-115. <https://doi.org/10.1016/j.emj.2014.09.003>
- Kawane, T., Adu-Gyamfi, B., Cao, Y., Zhang, Y., Yamazawa, N., He, Z., & Shaw, R. (2024). Digitization as an Adaptation and Resilience Measure for MSMEs amid the COVID-19 Pandemic in Japan: Lessons from the Food Service Industry for Collaborative Future Engagements. *Sustainability*, 16(4), 1550. <https://doi.org/10.3390/su16041550>
- Khalil, A., Abdelli, M. E. A., & Mogaji, E. (2022). Do digital technologies influence the relationship between the COVID-19 crisis and SMEs' resilience in developing countries?. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(2), 100. <https://doi.org/10.3390/joitmc8020100>
- Khurana, S., Haleem, A., & Mannan, B. (2019). Determinants for integration of sustainability with innovation for Indian manufacturing enterprises: Empirical evidence in MSMEs.

- Journal of Cleaner Production*, 229(1), 374-386. <https://doi.org/10.1016/j.jclepro.2019.04.022>
- Kilay, A. L., Simamora, B. H., & Putra, D. P. (2022). The influence of e-payment and e-commerce services on supply chain performance: Implications of open innovation and solutions for the digitalization of micro, small, and medium enterprises (MSMEs) in Indonesia—*Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 119.
- Kumar, A., Rayne, D., Salo, J., & Yiu, C. S. (2024). Battle of influence: Analyzing the impact of brand-directed and influencer-directed social media marketing on customer engagement and purchase behavior. *Australasian Marketing Journal*, 33(1), 14413582241247391. <https://doi.org/10.1177/14413582241247391>
- Kuncoro, T. W. D., & Harjono, B. (2022). Penyusunan Kajian Dampak Pandemi Covid-19 pada Kapasitas UMKM, IKM, Pedagang Sektor Informal Kota Surakarta Tahun 2021. *Jurnal Bengawan Solo: Pusat Kajian Penelitian Dan Pengembangan Daerah Kota Surakarta*, 1(1), 115-133. <https://doi.org/10.58684/jbs.v1i1.8>
- Kurniawan, Maulana, A., & Iskandar, Y. (2023). The effect of technology adaptation and government financial support on the sustainable performance of MSMEs during the COVID-19 pandemic. *Cogent Business & Management*, 10(1), 2177400. <https://doi.org/10.1080/23311975.2023.2177400>
- Kussudyarsana, K., Maulana, H. K., Maimun, M. H., Santoso, B., & Nugroho, M. T. (2023). The roles of social capital, innovation, and capabilities in MSME resilience during economic hard times. *Jurnal Manajemen Bisnis*, 14(1), 72-89. <https://doi.org/10.18196/mb.v14i1.15887>
- Lin, X., Zhou, Y. W., Xie, W., Zhong, Y., & Cao, B. (2020). Pricing and product-bundling strategies for e-commerce platforms with competition. *European Journal of Operational Research*, 283(3), 1026-1039. <https://doi.org/10.1016/j.ejor.2019.11.066>
- Lu, L., Peng, J., Wu, J., & Lu, Y. (2021). Perceived impact of the Covid-19 crisis on SMEs in different industry sectors: Evidence from Sichuan, China. *International Journal of Disaster Risk Reduction*, 55(1), 102085. <https://doi.org/10.1016/j.ijdrr.2021.102085>
- Maksum, I. R., Rahayu, A. Y. S., & Kusumawardhani, D. (2020). A social enterprise approach to empowering micro, small, and medium enterprises (SMEs) in Indonesia. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(3), 50. <https://doi.org/10.3390/joitmc6030050>
- Maran, R. (2022). Improving Micro, Small, and Medium Enterprises' Access to Start-up Financing in ASEAN Countries. *Journal of Research, Innovation and Technologies*, 1(2), 121-140. [https://doi.org/10.57017/jorit.v1.2\(2\).03](https://doi.org/10.57017/jorit.v1.2(2).03)
- Marjukah, A. (2022). Pengaruh Pelatihan Pemasaran Digital Terhadap Kinerja UMKM di Masa Pandemi Covid. *Jurnal Keuangan Dan Bisnis*, 20(1), 1-12. <https://doi.org/10.32524/jkb.v20i1.316>
- Martínez-Peláez, R., Ochoa-Brust, A., Rivera, S., Félix, V. G., Ostos, R., Brito, H., ... & Mena, L. J. (2023). Role of digital transformation for achieving sustainability: mediated role of stakeholders, key capabilities, and technology. *Sustainability*, 15(14), 11221. <https://doi.org/10.3390/su151411221>
- Meitiana, M., Kristinae, V., & Novan, N. (2024). Kinerja Bisnis UMKM: Peran Adaptasi Bisnis Dalam Memediasi Orientasi Kewirausahaan Dan Inovasi Produk. *Bahtera Inovasi*, 8(1), 52-61. <https://doi.org/10.31629/bi.v8i1.7010>
- Miftah, A. Z., Widianingsih, I., Muhtar, E. A., & Sutriadi, R. (2023). Reviving a city's economic engine: The COVID-19 pandemic impact and the private sector's engagement in Bandung City. *Sustainability*, 15(12), 9279. <https://doi.org/10.3390/su15129279>
- Mukherjee, M., Chatterjee, R., Khanna, B. K., Dhillon, P. P. S., Kumar, A., Bajwa, S., ... & Shaw, R. (2020). Ecosystem-centric business continuity planning (eco-centric BCP): A post-COVID-19 new normal. *Progress in Disaster Science*, 7(1), 100117. <https://doi.org/10.1016/j.pdisas.2020.100117>
- Nadyan, A. F., Selvia, E., & Fauzan, S. (2021). The survival strategies of micro, small, and medium enterprises in the new normal era. *Dinamika Ekonomi*, 12(2), 142-149. <https://doi.org/10.29313/DE.V12I2.7797>
- Nandeewaraiah, K., & Ramana, D. A. (2020). Role and performance of micro, small, and medium enterprises. *Journal of Management (JOM)*, 6(5), 10-17. <https://doi.org/10.34218/jom.6.5.2019.002>
- Nordhagen, S., Igbeka, U., Rowlands, H., Shine, R. S., Heneghan, E., & Tench, J. (2021). COVID-19 and small enterprises in the food supply chain: Early impacts and implications for longer-term food system resilience in low-and middle-income countries. *World Development*, 141(1), 105405. <https://doi.org/10.1016/j.worlddev.2021.105405>
- Okuwhere, M., & Osagie, O. (2022). Re-evaluating Small and Medium Enterprises' financial accessibility post COVID-19 pandemic in Nigeria. *Journal of Enterprise and Development*, 4(2), 274-291. <https://doi.org/10.20414/jed.v4i2.5857>
- Pankov, S., Schneckenberg, D., & Velamuri, V. K. (2021). Advocating sustainability in entrepreneurial ecosystems: Micro-level practices of sharing ventures. *Technological Forecasting and Social Change*, 166(1), 120654. <https://doi.org/10.1016/J.TECHFORE.2021.120654>
- Pu, G., Qamruzzaman, M. D., Mehta, A. M., Naqvi, F. N., & Karim, S. (2021). Innovative finance, technological adaptation, and SMEs sustainability: the mediating role of government

- support during the COVID-19 pandemic. *Sustainability*, 13(16), 9218. <https://doi.org/10.3390/su13169218>
- Putritamara, J. A., Hartono, B., Toiba, H., Utami, H. N., Rahman, M. S., & Masyithoh, D. (2023). Do dynamic capabilities and digital transformation improve business resilience during the COVID-19 pandemic? Insights from beekeeping MSMEs in Indonesia. *Sustainability*, 15(3), 1760. <https://doi.org/10.3390/su15031760>
- Rashid, Y., Rashid, A., Warraich, M. A., Sabir, S. S., & Waseem, A. (2019). Case study method: A step-by-step guide for business researchers. *International journal of qualitative methods*, 18(1), 1609406919862424. <https://doi.org/10.1177/1609406919862424>
- Sahoo, P. B. B., & Thakur, V. (2023). Enhancing the performance of Indian micro, small, and medium enterprises through supply chain finance: challenges emerging from the COVID-19 pandemic. *Benchmarking: An International Journal*, 30(6), 2110-2138. <https://doi.org/10.1108/BIJ-11-2021-0668>
- Sahoo, P., & Ashwani. (2020). COVID-19 and the Indian economy: Impact on growth, manufacturing, trade, and the MSME sector. *Global Business Review*, 21(5), 1159-1183. <https://doi.org/10.1177/0972150920945687>
- Salim, M. N., Susilastuti, D., & Astuty, P. (2021). Determinants of Indonesian MSME Exports and Their Performance during the Covid-19 Pandemic. *Economics and Business Quarterly Reviews*, 4(3), 162-173. <https://doi.org/10.31014/aior.1992.04.03.379>
- Saskara, I. A. N., & Setyari, N. P. W. (2022). Uncovering the indispensable role of women in nurturing resiliency: Evidence from MSMEs in Denpasar. *Journal of Innovation in Business and Economics*, 6(2), 115-120. <https://doi.org/10.22219/jibe.v6i02.21938>
- Setyowati, E., Yuliawan, D., Astuti, E. N., & Mahasti, H. S. G. D. (2024). Optimalisasi Usaha Mikro Kecil dan Menengah (UMKM) melalui Pelatihan Dasar Manajemen di Desa Duri Kecamatan Slahung Kabupaten Ponorogo. *Sewagati*, 8(1), 1173-1181. <https://doi.org/10.12962/j26139960.v8i1.806>
- Sinaga, M. P., Kabeakan, S. P., Damanik, Y. P., Khaira, I., & Siregar, Z. (2024). The Influence of Social Media on Increasing Sales of MSMEs (Case Study of MSMEs in Tanjung Morawa). *Economic: Journal Economic and Business*, 3(3), 102-107. <https://doi.org/10.56495/ejeb.v3i3.582>
- Sindhwani, R., Hasteer, N., Behl, A., Varshney, A., & Sharma, A. (2023). Exploring "what," "why," and "how" of resilience in the MSME sector: a m-TISM approach. *Benchmarking: An International Journal*, 30(6), 1884-1911. <https://doi.org/10.1108/BIJ-11-2021-0682>
- Singh, S., Chamola, P., Kumar, V., Verma, P., & Makkar, N. (2023). Explaining the revival strategies of Indian MSMEs to mitigate the effects of the COVID-19 outbreak. *Benchmarking: An International Journal*, 30(1), 121-148. <https://doi.org/10.1108/BIJ-08-2021-0497>
- Siregar, L. D., Igamo, A. M., & Effriandy, I. (2022). Pelatihan SDM "UMKM GO DIGITAL" Sebagai Strategi Bisnis Bagi UMKM di Masa Pandemi. *J-ABDI: Jurnal Pengabdian kepada Masyarakat*, 1(11), 3217-3224. <https://doi.org/10.53625/jabdi.v1i11.1961>
- Sreedevi, R., & Saranga, H. (2017). Uncertainty and supply chain risk: The moderating role of supply chain flexibility in risk mitigation. *International Journal of Production Economics*, 193(1), 332-342. <https://doi.org/10.1016/J.IJPE.2017.07.024>
- Suasih, N. N. R., & Budhi, M. K. S. (2023). Mitigation Policies for Fashion SMEs Affected by the COVID-19 Pandemic. *Quality-Access to Success*, 24(194), 274-285. <https://doi.org/10.47750/QAS/24.194.31>
- Sumarta, N. H., & Supriyono, E. S. (2021). Pendampingan Pengajuan Relaksasi Kredit Pada UMKM Terdampak Covid-19 di Kelurahan Kauman, Surakarta. *BUDIMAS: Jurnal Pengabdian Masyarakat*, 3(1), 123-128. <http://dx.doi.org/10.29040/budimas.v3i1.1636>
- Supari, S., & Anton, H. (2022). The impact of the national economic recovery program and digitalization on MSME resilience during the COVID-19 pandemic: a case study of Bank Rakyat Indonesia. *Economies*, 10(7), 160. <https://doi.org/10.3390/economies10070160>
- Suparji, S. (2021). Investment climate for MSMEs towards a green economy. *International Journal of Research in Business and Social Science*, 10(6), 153-158. <https://doi.org/10.20525/ijrbs.v10i6.1360>
- Suresha, K. P. (2023). Covid-19 and its Impact on MSMEs in Karnataka: A Study with Vijayapura District. *EPRA International Journal of Economic and Business Review*, 11(4), 1-5. <https://doi.org/10.36713/epra12949>
- Sutrisno, S. (2023). The Role of Business Mentors in Assisting the Growth of Education-Supported MSMEs. *Indo-MathEdu Intellectuals Journal*, 4(2), 332-346. <https://doi.org/10.54373/imeij.v4i2.201>
- Sutrisno, S., Permana, R. M., & Junaidi, A. (2023). Education and training as a means of developing MSME expertise. *Journal of Contemporary Administration and Management (ADMAN)*, 1(3), 137-143. <https://doi.org/10.61100/adman.v1i3.62>
- Takeda, A., Truong, H. T., & Sonobe, T. (2022). The impacts of the COVID-19 pandemic on micro, small, and medium enterprises in Asia and their responses to digitalization. *Journal of Asian Economics*, 82(1), 101533. <https://doi.org/10.1016/j.asieco.2022.101533>
- Thurmond, V. A. (2001). The point of triangulation. *Journal of Nursing Scholarship*, 33(3), 253-258.

- <https://doi.org/10.1111/j.1547-5069.2001.00253.x>
- Utami, A. M., & Wahyudi, T. N. (2024). The Role of Influencers and Digital Marketing in Boosting Sales for Culinary MSMEs in Solo. *Jurnal Manajemen Bisnis*, 11(1), 28-38. <https://doi.org/10.33096/jmb.v11i1.688>
- Widodo, S., Puspitasari, A. D., & Handono, W. D. (2024). Peran Kompetensi Sumber Daya Manusia untuk Mendorong Inovasi Produk dan Kinerja UMKM. *Eqien-Jurnal Ekonomi dan Bisnis*, 13(02), 186-194. <https://doi.org/10.34308/eqien.v13i02.1754>
- Wongkitrungrueng, A., & Assarut, N. (2020). The role of live streaming in building consumer trust and engagement with social commerce sellers. *Journal of Business Research*, 117(1), 543-556. <https://doi.org/10.1016/j.jbusres.2018.08.032>
- Wongpun, S., Cuijten, N., Inmor, S., Suwannahong, R., & Buaprommee, N. (2024). Design and develop an online digital marketing course to enhance Thai manufacturing MSME's digital marketing capabilities. *Journal of Infrastructure, Policy, and Development*, 8(8), 4885. <https://doi.org/10.24294/jipd.v8i8.4885>

APPENDIX

Appendix 1. Blueprint Interview Questions

No.	Question
1.	How would you describe the role of MSMEs in the city of Solo in supporting the achievement of the SDGs after the COVID-19 pandemic?
2.	How has the COVID-19 pandemic affected your operations and business turnover?
3.	What are the main challenges you faced during the pandemic?
4.	What adaptation strategy are you using to maintain business sustainability?
5.	To what extent does digital innovation play a role in supporting your business operations?
6.	How do changes in people's consumption patterns affect your business?
7.	Did you receive support from the government or related institutions during the pandemic? If so, what kind of support does it look like?
8.	How do you assess the effectiveness of training or mentoring programs in improving business competence?
9.	Are you restructuring your operations or changing your business model? Explain.
10.	How do you overcome financing constraints during a crisis?
11.	How do you ensure the long-term sustainability of your business?
12.	In your opinion, what is your business's contribution to economic, social, and environmental aspects within the framework of the SDGs?
13.	What is the role of community networks or MSME associations in helping business adaptation?
14.	Are new products or service innovations being developed in response to market dynamics? Explain.
15.	What are your expectations for government policies in supporting MSMEs in the future?