

Analysis of Challenges and Opportunities for Micro, Small, and Medium Enterprises (MSMEs) in the Digital Era in a Systematic Literature Review

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Abstract

This *Systematic Literature Review* explores the challenges and opportunities faced by Micro, Small, and Medium Enterprises (MSMEs) in the era of digital technology. This review aims to identify and analyse the challenges and opportunities of Micro, Small, and Medium Enterprises (MSMEs) in the digital era. The research method used was a thorough search of relevant literature using predetermined search criteria, resulting in 320 articles that met these criteria. These articles were further screened based on their relevance to the research questions, and finally, 58 articles were selected for analysis. The results show that the digital era offers significant opportunities for MSMEs, especially in terms of increased access to markets, resources and information. However, MSMEs also face various challenges, including a lack of digital literacy, limited resources, and intense competition. This study highlights the need for MSMEs to embrace digital technology and develop strategies to overcome these challenges. Overall, this systematic literature review provides valuable insights into the challenges and opportunities for MSMEs in the digital era and emphasises the importance of adapting to the changing business landscape. The findings of this research have practical implications for policymakers, MSMEs and other stakeholders interested in MSME development in the digital era.

Keywords: *MSMEs, digitalisation, industry 4.0, economy*

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Introduction

Today's digital era, information and communication technology has brought significant changes in various aspects of life including the business world. In the business world, digital technology has brought ease of access and use of information and increased efficiency and productivity. However, at the same time, digital technology also poses new challenges for small and medium enterprises (MSMEs). MSMEs around the world play an important role in national and local economies (Khan, 2014). However, in this digital era, MSMEs face various challenges in adopting digital technologies and utilising them optimally. Some of these challenges include difficulties in access to technology and skilled human resources, as well as a lack of digital knowledge and skills.

In this context, research investigating the challenges and opportunities for MSMEs in the digital era is essential. However, there are currently many different studies on this topic, and there is still a lack of a comprehensive understanding of the challenges and opportunities facing MSMEs in the digital era. Therefore, conducting a systematic research that studies the challenges and opportunities for MSMEs in the digital era can provide a better understanding of this topic. This research can provide insights and practical recommendations for businesses, government, and other stakeholders in supporting the growth and success of MSMEs in the digital era.

Digitalisation is a rapidly evolving phenomenon that has affected many aspects of human life, including business, communication and social interaction. As such, several international journals have published articles exploring the theoretical underpinnings of digitalisation in various domains. In the field of entrepreneurship, researchers have examined the impact of digitalisation on business models and innovation. For example, Chesbrough (2010) argues that digital technologies have created new opportunities and challenges for business model innovation. Teece (2010) highlights the importance of business models in facilitating innovation in the digital era. In the field of information systems, researchers have explored the role of digital technologies in transforming organisations and society. Laudon and Laudon (2016) provide an overview of how information systems have been used to manage digital SMEs, while Venkatraman (1994) explains how digital technology has enabled business transformation from automation to redefining the scope of business.

In the field of international political economy, researchers have examined the governance of global value chains facilitated by digital technologies. Gereffi et al. (2005) argue that digitalisation has led to the fragmentation of production across borders, creating new governance challenges for MSMEs and policymakers. In the area of innovation, researchers have explored the potential of digital platforms and mass collaboration to foster innovation. Tapscott and Williams (2010) explain how wikinomics has enabled mass collaboration and open innovation, while West and Lakhani (2018) examine the role of expertise diversity and task autonomy in driving crowd performance.

Finally, in the area of technology and society, researchers have examined the wider implications of digitalisation for human life and well-being. Brynjolfsson and McAfee (2014) explain how digital technologies have led to a second machine era, while Castells (1996) argues that the rise of the network society has changed

social, economic and political structures.

Taken together, these theoretical perspectives offer insights into the complex and multifaceted nature of digitalisation and its implications for various domains of human activity. By utilising this perspective, researchers can gain a deeper understanding of the challenges and opportunities presented by digital technologies, and develop strategies to effectively navigate and utilise them by MSMEs.

According to the International Finance Corporation (IFC), MSMEs are defined by the number of employees, annual sales revenue, and total assets. Micro enterprises typically have less than 10 employees, small enterprises have up to 50 employees, and medium-sized enterprises have up to 250 employees. In terms of annual sales revenue, micro enterprises typically have less than \$100,000, while small MSMEs have up to \$5 million and medium-sized MSMEs up to \$50 million. Total assets can also be used as criteria, with micro enterprises having up to \$100,000 in assets, small enterprises having up to \$10 million, and medium-sized enterprises having up to \$50 million. In the European Union (EU), MSMEs are defined by the number of employees and annual turnover or balance sheet total. Micro MSMEs have up to 10 employees and an annual total turnover or balance sheet of up to €2 million, small businesses have up to 50 employees and an annual total turnover or balance sheet of up to €10 million, and medium-sized MSMEs have up to 250 employees and an annual turnover or total balance sheet of up to €50 million. In the United States, the Small Business Administration (SBA) defines small businesses by industry and number of employees or annual revenue. For example, in the manufacturing industry, small businesses have up to 500 employees, while in the wholesale trade industry, small businesses have up to 100 employees. Overall, while definitions and criteria for MSMEs vary across countries and regions, there are some common traits such as number of employees, annual sales revenue, and total assets. These definitions and criteria are important for policymakers, researchers, and practitioners to accurately identify and support MSMEs, which play an important role in economic development and job creation.

Methodology

This study uses a *systematic literature review* method which is a research methodology that aims to identify, evaluate, and synthesise all available evidence on a particular research question or topic. The purpose of a systematic literature review is to provide a comprehensive and impartial summary of the existing literature on a particular subject. This study adopted four stages of *systematic literature review* research according to Kitchenham et al. (2007), including; (1) Planning, This involves defining the research question or topic, selecting relevant databases and search terms, and developing inclusion and exclusion criteria for the literature search; (2) Conducting the search: This involves searching for relevant studies in various databases using pre-defined search terms and inclusion criteria; (3) Screening and selection: This involves reviewing the titles, abstracts, and full-text articles of the identified studies to determine their relevance and eligibility for inclusion in the review; (4) Synthesising the evidence: This involves extracting data from the included studies and synthesising the findings using pre-

defined approaches, such as narrative synthesis, thematic analysis, or meta-analysis.

This research aims to systematically analyse the available literature on the challenges and opportunities of MSMEs in the digital era. A systematic literature search was conducted in databases, namely Crossref, Google Scholar. Harzing publish and perish was used to help retrieve most of the articles from the best Journals. Articles to be reviewed are obtained from journals such as Elsevier, Springer, and Research gate where each article selection process will be explained using the PRISMA model.

The PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*) model is a framework for conducting systematic reviews developed to improve the quality and transparency of reporting. The PRISMA model consists of four main stages: identification, screening, eligibility and inclusion. The PRISMA model is widely recognised and used in the field of systematic reviews and meta-analyses. The model can be adapted to different research questions and study designs, making it a flexible framework for conducting systematic reviews and meta-analyses (Moher D, 2009).

The keywords used in the journal search engine are micro, small, and medium-sized enterprises (MSMEs), digital era, challenges, opportunities, e-commerce, digitalisation, innovation. The following are the research questions that will be answered in this study; (1) What are the challenges faced by MSMEs in the digital era; (2) What are the opportunities available to MSMEs in the digital era; (3) How can MSMEs take advantage of opportunities in the digital era to improve their business performance and sustainability?

The inclusion criteria for this research include; Publication in international and national journals; Research that focuses on the challenges and opportunities of MSMEs in the digital era; Research published from 2010 to the present; Research that uses quantitative and qualitative data; Case studies of MSMEs in various countries in the world; Research that compares the performance of MSMEs before and after implementing digital technology.

While the exclusion criteria applied to this research include; Publication in the form of books or reports; Research that does not discuss the challenges and opportunities of MSMEs in the digital era; Research that only discusses technical aspects without discussing their impact on MSME performance; Research published before 2010; Research that cannot be accessed online; Articles published in languages other than English and Indonesian; Is a conference proceeding; thesis or thesis. The data generated from this research will be analysed qualitatively by synthesising and summarising the findings from the selected literature. The results of the analysis will be categorised by theme and will be presented in narrative form.

Result and Discussion

A thorough search was conducted following the search criteria as given in the search strategy. The total records selected included 1000 research articles. By following the search criteria 320 articles were found eligible based on keywords, abstracts, as well as complete meta data and these 320 articles were further screened based on suitability to the research questions

and finally 58 articles were selected for systematic review. The article sorting process is described in the following prism model:

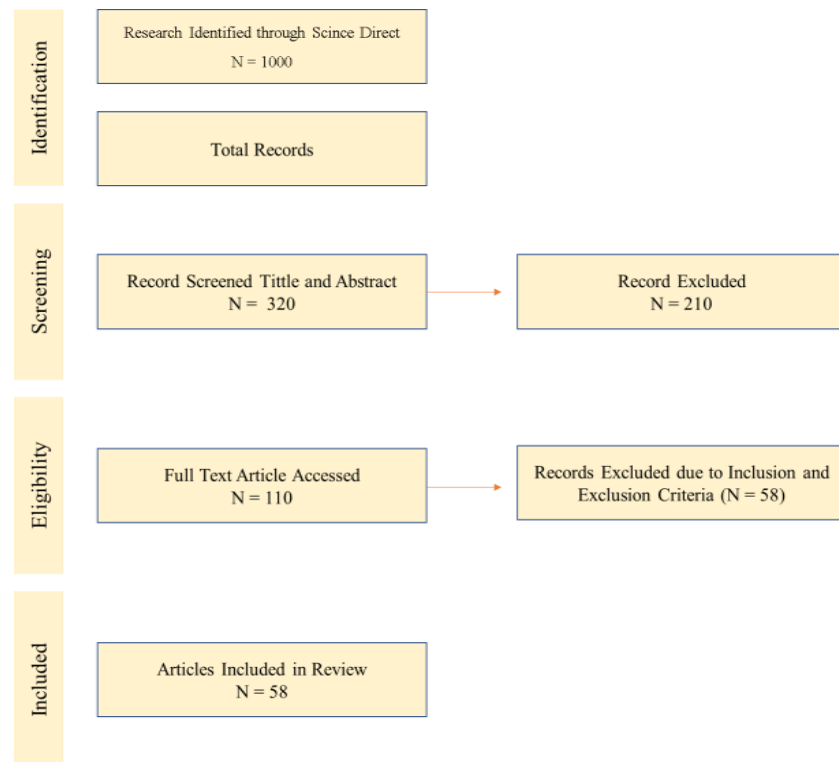


Figure 1. Prisma Model

The 58 articles were then selected based on their abstracts before being analysed bibliometrically using VOSviewer software (version 1.6.13), which was created specifically for bibliometric mapping (Perianes-Rodriguez et al., 2016). The first analysis applied using VOS viewer was to merge all bibliographic documents, then create a map based on the previously collected bibliographic data in RIS format. To improve the quality of SLR research results, the collection of articles certainly needs to be filtered again to ensure the quality of articles analysed and recommended (Amjad et al., 2020).

Due to the increasing interest in the domain of *digitalisation and MSMEs*, as evidenced by several studies, this research only applies the criteria of clustering documents with a minimum of two citations. The aim is to strengthen the insights revealed by the bibliography-based document analysis, i.e. to identify the most important trends on the topic of *digitalisation and MSMEs*, a keyword co-occurrence analysis was conducted. The following mapping is generated based on a collection of RIS with the topic of MSME economy in the digital era.

are faced with new challenges and opportunities on the international scene. The COVID-19 pandemic has further exacerbated the situation, forcing MSMEs to find survival techniques aided by expanded public policy prerogatives. The shock has left MSMEs in a state of existential crisis (Mura, L., 2017). Inadequate financing, lacking social infrastructure, managerial skills, and sudden shocks caused by economic and tax reforms are issues that greatly affect the performance of small businesses at different levels of their operations (Idah, Y. M., & Pinilih, M. 2020). MSMEs also face challenges in shaping the behavioural intentions of MSMEs in the food sector when utilising digital applications. The three dimensions explain changes in consumer consumption patterns (coercive), business competition (mimetic), and the business environment Harianto, R. A., & Sari, P. N. (2021).

Finally, digitalisation also creates challenges in terms of data privacy and security. As more data is collected and analysed, there is a risk of data breaches, cyber-attacks and surveillance. This has led to new regulatory frameworks and ethical considerations around the use of digital technologies.

Opportunities available to MSMEs in the digital era

In addition to these challenges, digitalisation also creates some opportunities. One of the most significant opportunities for digitalisation is the ability to collect and analyse large amounts of data. Davenport (2014) argues that big data can be used to improve decision-making, customer service and operational efficiency. This leads to the development of data-driven business models that rely on analytics and machine learning to generate insights and predictions (Hazen et al., 2016).

Digital technologies can enhance connectivity and information sharing within and beyond MSMEs and catalyse user involvement in product innovation (Chavez et al., 2017). Digital technologies can also influence the relationship between supply chain partners and customers, for example by involving users and suppliers in product design through digital platforms (Holmström et al., 2017). Another opportunity for digitalisation is the ability to leverage digital platforms and networks for mass collaboration and open innovation. Tapscott and Williams (2010) describe how wikinomics has enabled mass collaboration and co-creation across borders, while West and Lakhani (2018) examine the role of skill diversity and task autonomy in driving crowd performance.

Digitalisation has also facilitated the emergence of smart and connected products that can communicate and exchange data with other devices and systems. Porter and Heppelmann (2014) argue that this has led to new opportunities for product innovation, customer engagement and service delivery. However, it also presents challenges in terms of data privacy, security and interoperability.

Digitalisation supports the development and acquisition of new skills, competencies and knowledge, which in turn can lead to new products and processes (Nambisan et al., 2020). Moreover, absorptive capacity, as an integral element of MSME innovation processes, is highly dependent on access to internal and external knowledge. So, if digitalisation improves access to existing knowledge or provides new knowledge (Agostini et al., 2020), through, e.g. big data analytics, it depletes the absorption capacity of MSMEs, and consequently, increases the likelihood of new products and processes.

By adopting digital technology, MSMEs can develop unique resources that can increase productivity and efficiency, giving them a competitive advantage over their competitors (Saleem et al., 2020). In addition, digital transformation can entail the acquisition of new skills, competencies and knowledge that can stimulate MSMEs to introduce new products and processes. Digitalisation can also facilitate easier and faster communication between MSMEs when accessing external knowledge sources (Ardito et al., 2021).

Digitalisation has had a significant impact on the entrepreneurial landscape, with many businesses now operating online and leveraging technology to streamline their operations. From e-commerce platforms to social media marketing, digital tools have enabled entrepreneurs to reach a wider audience and operate more efficiently.

Overall, the results of the theoretical study on digitalisation in the context of entrepreneurship can provide insights into the ways digital technologies are changing the entrepreneurial landscape and the strategies entrepreneurs can use to navigate these changes successfully.

Utilisation of Digitalisation to improve performance and business sustainability in MSMEs

Industry 4.0 can offer tremendous opportunities for the creation of new products and services, better ways to serve customers, increased integration across and along the value chain, and the adoption of innovative business models (Müller et al., 2018). Digital transformation is changing the way MSMEs create and capture value (Bharadwaj et al., 2013; Lucas et al., 2013).

The digital era opens up great opportunities for MSMEs to improve business sustainability. In today's digital era, MSMEs can utilise social media, marketplaces, or websites to market their products. This expands market reach and increases engagement with consumers Liao, Y., Li, Y., & Huang, H. (2021). In addition, the digital era also makes it easier for MSMEs to do bookkeeping and financial management, with applications or software that can help MSMEs in this regard Kaur, J., & Soin, P. (2021). MSMEs can also utilise technology to improve production efficiency, such as the use of machines or software that speeds up the production process. By utilising the opportunities available in the digital era, MSMEs can also improve their skills and knowledge through e-learning platforms that can be accessed online.

MSMEs use and seek to adopt new digital technologies for various innovation-related purposes at different stages of their innovation process. It is important to assess the opportunities, threats, risks and implications of using digital technologies, not only for MSMEs, but also for society as a whole. It is important to know how MSMEs need to organise themselves for these technologies to be implemented with the highest benefit (Raguseo, E, 2016). Only effective digital transformation allows MSMEs to increase their competitiveness in the global market. Digital innovation technologies are associated with the support of knowledge management processes. These tools have significant potential to streamline internal and external knowledge, and facilitate knowledge dissemination among MSME employees (Gastaldi, L, 2019). Business models are also closely linked to digitalisation. MSMEs must constantly change and improve their business models to compete with competitors, or to gain a

competitive advantera for a period of time. "Innovation", therefore, does not only apply to processes or products. It also applies to business model innovation and all areas of MSMEs in general.

Digitalisation is an important factor in business model optimisation and improvement. Digitalisation, in business models, helps MSMEs to maximise their profits and business returns (Westerman, 2011). Digital technology is an important factor in achieving the sustainability goals of the Green Deal in various sectors.

Digital transformation is very costly and time-consuming for MSMEs Jacqueline, O., & Verdin, R. (2021). Therefore, MSMEs need to clearly identify in their digital strategy which areas of digital transformation are prioritised for them. One of the key areas of digital transformation consists of threat and opportunity manerament. On the basis of trends that represent new opportunities or threats for them, businesses are forced to embrace change and implement new innovative solutions related to digital transformation. It is not only about introducing new software and hardware solutions, but also about innovation processes, methodologies, and business models aimed at sustainable products and services for customers (Sebastian, 2017). The focus of MSMEs on innovation will enable these MSMEs to improve their market position, and to increase or maintain their competitive advantera (Vidmar, D., Marolt, M., & Pucihar, A. 2021). The proposed concept of managing threats and opportunities in digital transformation will enable MSMEs to better identify and manera changes associated with green and digital transformation.

Conclusion

Digitalisation affects almost every aspect of our lives, and MSMEs have to face the opportunities and threats associated with it (Straková, J. (2021), Korauš, A.. (2021)) . The opportunities and threats associated with digital transformation can have positive but also negative impacts on a sustainable world (Mihalčová, B., 2021). In the context of these aspects, the findings of this research propose a concept for managing the opportunities and threats associated with digital transformation.

Micro, small and medium enterprises (MSMEs) face both challenges and opportunities in the digital era. On the one hand, the rise of e-commerce and online marketplaces presents new channels for MSMEs to reach customers and grow their businesses. The increasing use of digital technology also allows MSMEs to automate processes, streamline operations, and improve efficiency.

However, the digital era also poses some challenges for MSMEs. Many MSMEs are struggling to keep up with the rapidly changing technological landscape, and may lack the skills and resources needed to adopt and integrate digital technologies into their operations. In addition, the increased competition brought about by the digital marketplace means that MSMEs must constantly innovate and differentiate themselves to remain competitive.

Overall, the opportunities and challenges of digitalisation are complex and diverse. By understanding these opportunities and challenges, policymakers, businesses and individuals can develop strategies to effectively utilise digital technologies while addressing the associated risks and challenges. Overall, while the digital era presents both challenges and opportunities for MSMEs, it is clear that those who are able to embrace and capitalise on digital technologies will be

better positioned to thrive in the modern business environment. MSMEs that can adapt to the new digital landscape, stay ahead of technology trends, and deliver value to their customers through innovative products and services will be more likely to succeed in the long run.

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