



Integration of Blue and Green Economy in the Digital Transformation of MSMEs in Indonesia

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Abstract.

Digital transformation has become a major driver in the development of Micro, Small and Medium Enterprises (MSMEs) throughout the world. In Indonesia, MSMEs contribute around 60% to Gross Domestic Product (GDP) and absorb more than 97% of the workforce (Ministry of Cooperatives and SMEs, Integration of the Blue and Green Economy in the Digital Transformation of MSMEs in Indonesia 2021). The integration of blue and green economies is important to ensure that economic growth is not only sustainable, but also environmentally friendly. The concept of a blue economy, which focuses on sustainable use of marine resources, and a green economy, which emphasizes reducing carbon emissions and efficient use of resources, can help. Digital transformation has become a major driver in the development of Micro, Small and Medium Enterprises (MSMEs) throughout the world. In Indonesia, MSMEs contribute around 60% to In the digital era, MSMEs have greater access to technology that can increase operational efficiency and expand markets. Huge challenges remain in adopting sustainable digital transformation. Many MSMEs do not yet have sufficient knowledge or resources to implement new technology. This research aims to explore how the integration of the blue and green economy can be carried out in the context of the digital transformation of MSMEs in Indonesia. By identifying challenges and opportunities, it is hoped that it can provide useful recommendations for developing policies and strategies for MSMEs.

Keywords: Green Economy, Blue Economy, Digital Transformation UMKM.

1 Introduction

In recent years, Indonesia has undergone a significant transformation in the Micro, Small and Medium Enterprises (MSMEs) sector, which is the backbone of the national economy. Around 99% of the total business units in Indonesia are MSMEs, which absorb more than 97% of the workforce and contribute around 60% to the country's Gross Domestic Product (GDP) (Ministry of Cooperatives and SMEs, 2021). However, major challenges are faced by MSMEs, especially in terms of adapting to environmental changes and digitalization. In this context, the integration of blue and green economies has become very relevant. The blue economy refers to

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the sustainable use of marine resources, while the green economy focuses on sustainable economic growth by reducing negative impacts on the environment. The digital transformation of MSMEs not only involves the adoption of technology, but also the expansion of insights into sustainability. With increasing awareness of environmental issues, consumers now prefer environmentally friendly and sustainable products. Therefore, MSMEs need to diversify their products by integrating blue and green economic principles in their business strategies

2 Research Objectives

The main objective of this study is to analyze how MSMEs in Indonesia can integrate blue and green economic principles in their digital transformation process. Specifically, this study aims to: (1) Identify the factors that encourage MSMEs to switch to blue and green economies; (2) Analyze the impact of the integration of blue and green economies on the business performance of MSMEs; (3) Developing recommendations for MSMEs in implementing sustainable strategies; and (4) Exploring the experiences and best practices of MSMEs that have been successful in this integration

3 Research methodology

In this study, the research methodology we use is to focus on literature analysis and the results of existing research are often referred to as literature studies or literature reviews. This method is used to evaluate, criticize, and synthesize existing knowledge related to the research topic. In the context of the integration of the blue and green economy and the digital transformation of MSMEs in Indonesia, this method can provide a deeper picture of what has been researched and identified by previous researchers.

The step in the research we use is Scoping Review (Initial Review). This approach is used to map existing research and identify knowledge gaps. This process helps you to understand what has been researched related to the blue economy, green economy, and digital transformation of MSMEs

The steps we use are: Identify the main keywords related to the topic (e.g., "blue economy", "green economy", "MSMEs", "digital transformation"), Browse various literature sources such as academic journals, books, government reports, and documents of international organizations, and summarize relevant research and map out the topics that have been discussed and aspects that are still not explored

4 literature review

The Blue Economy is an innovative approach to utilizing sustainable marine resources to support economic growth and improve community welfare. The blue

economy sector covers various important sectors, including fisheries, renewable energy, tourism, water transportation, waste management, and climate change mitigation. The blue economy has important potential as a source of sustainable economic growth.

Meanwhile, the green economy or what is better known as green economy is a new concept that can be a tool in sustainable development and will contribute to people's prosperity, as well as generating new economic opportunities (Soesanto, 2019). The green economy concept focuses on environmentally friendly economic activities, by providing various policy standards and sanctions for activities that have the potential to damage the environment (Wahyuni et al., 2022). The green economy concept as a form of support for sustainable business transformation refers to change strategic and operational business actors to focus more on environmentally friendly and sustainable business practices (Anwar, 2022).

Through the integration of the Blue and Green Economy programs, it is hoped that it can create sustainable economic growth for MSMEs

n a study of the journal Extension on Green Business Models for MSMEs in Encouraging Green Economic Transformation (Fathina et al., 2024) Training and counseling methods and guidance, so that MSME business actors can understand the concept of green business, are successful in encouraging sustainable green economic development in MSMEs.

In the Blue Economy Study in TheJournalish: Social and Government with the theme Blue Economy: Opportunities for Implementing Regulations in Indonesia (Muhammad Rafi Darajati, 2023) the research approach used in the title "The Urgency of Implementing Blue Economy Principles in Indonesian Maritime Regulations" is normative juridical. This research has a prescriptive nature, which means it aims to get suggestions about what should be done to overcome certain problems.

In an effort to implement the blue economy as the backbone of the Indonesian economy in 2045, several strategies are needed within the regulatory and policy framework, namely the preparation and design of regulatory instruments that regulate the establishment of an institution that specifically manages sectors related to the blue economy as well as other operations that support welfare. sustainable communities and sustainable ecosystem protection

5 Research result

Blue and Green Economy Concept

The blue and green economy are two concepts that complement each other in creating sustainable development. The blue economy focuses on the sustainable use of marine resources, including fisheries, marine tourism and renewable energy from the sea. Meanwhile, a green economy emphasizes practices that reduce environmental impacts, such as reducing carbon emissions, using renewable energy, and efficient waste management. According to the OECD report, a green economy can increase global economic growth by up to 2.5% by 2050 (OECD, 2019).

In Indonesia, the potential for the blue economy is very large, considering that this country has more than 17,000 islands and a long coastline. The fisheries and marine sector contributes around 3% to national GDP and absorbs millions of workers (Central Statistics Agency, 2021). However, the sector also faces serious challenges, such as overfishing and marine pollution. Therefore, implementing blue economy principles is very important to ensure the sustainability of marine resources.

On the other hand, the green economy also offers opportunities for MSMEs to adapt to the demands of an increasingly environmentally conscious market. For example, environmentally friendly products, such as organic food or recycled goods, are increasingly sought after by consumers. Data from Nielsen shows that 66% of global consumers are willing to pay more for products that come from companies committed to sustainability (Nielsen, 2018). This shows that MSMEs that adopt green economic practices have the potential to increase their competitiveness in the market.

Integration between these two concepts can be done in an innovative way. For example, MSMEs operating in the marine tourism sector can implement environmentally friendly practices, such as the use of renewable energy and good waste management, while promoting the natural beauty of the sea. This will not only attract environmentally conscious tourists, but also help maintain a healthy marine ecosystem.

By understanding and implementing the concepts of the blue and green economy, MSMEs can contribute to sustainable development while improving their economic performance. Therefore, it is important for MSME players to receive education and training regarding these two concepts, as well as support from the government and related institutions to implement them in daily practice.

Challenges in Blue and Green Economy Integration

Even though the potential for integrating the blue and green economy in the digital transformation of MSMEs is enormous, there are various challenges that must be faced. One of the main challenges is the lack of understanding and knowledge among MSME players about the concepts and practices of the blue and green economy. According to research from UNDP, around 70% of MSMEs in Indonesia do not understand the importance of sustainability in their business (UNDP, 2021). This lack of knowledge prevents them from adopting more environmentally friendly practices.

Apart from that, access to the technology needed to implement blue and green economic practices is also an obstacle. Many MSMEs do not have the financial resources to invest in new technologies, such as waste management systems or energy efficient production equipment. A study by the World Bank shows that 40% of MSMEs in Indonesia consider technology costs to be the main obstacle in their digital transformation (World Bank, 2020). Without financial support and access to technology, it is difficult for MSMEs to shift to a more sustainable business model. Another challenge is regulations that do not fully support the integration of the blue and green economy. Some existing policies may not be flexible enough to encourage innovation in the MSME sector. For example, strict regulations regarding waste management can discourage MSMEs from investing in environmentally friendly practices. Therefore, it is necessary to revise and develop policies that are more supportive for MSMEs to implement sustainable practices. Apart from that, the existence of intense competition in the market is also a challenge in itself. MSMEs often have to compete with large companies that have more resources to adopt environmentally friendly technologies and practices. This can make MSMEs feel pressured to maintain low costs, thereby ignoring sustainability aspects. In this context, it is important for the government and related institutions to create incentives that encourage MSMEs to invest in sustainability. Lastly, the lack of collaboration between MSMEs, government and the private sector is also an obstacle to the integration of the blue and green economy. Without strong partnerships, it is difficult to create an ecosystem that supports innovation and sustainability. Therefore, joint efforts are needed to build collaborative networks that can help MSMEs implement blue and green economic practices.

Opportunities in Blue and Green Economy Integration

Although there are challenges, the integration of the blue and green economy in the digital transformation of MSMEs also offers various attractive opportunities. First, with increasing consumer awareness of environmental issues, MSMEs that implement environmentally friendly practices can attract more customers. A study by PwC shows that 78% of consumers prefer to buy products from companies that have a commitment to sustainability (PwC, 2021). This shows that MSMEs that adopt the green and blue economy can increase their competitiveness in the market.

Second, integration between these two economies can open access to international markets. Many countries now apply strict sustainability standards to imported products. MSMEs that are able to meet these standards will have greater opportunities to enter the global market. For example, fishery products that are certified environmentally friendly have a higher selling value on the international market, thus providing additional profits for business actors.

Third, digital technology can be an effective tool to support the integration of blue and green economies. By leveraging technologies such as IoT (Internet of Things) and blockchain, MSMEs can increase operational efficiency and transparency in their supply chains. For example, the use of blockchain technology in the fisheries sector can help trace the origin of products and ensure that the fish sold comes from sustainable fishing practices (Hatch, 2020).

Fourth, support from the government and financial institutions can also be an opportunity for MSMEs to invest in environmentally friendly practices. Assistance and incentive programs offered by the government can help reduce the cost burden that must be borne by MSMEs. Apart from that, financial institutions can also provide easier access to financing for MSMEs who want to adopt green and blue technology. Ultimately, collaboration between MSMEs, government and the private sector can create an ecosystem that supports innovation and sustainability. Through strong partnerships, various parties can share knowledge, resources and technology to encourage sustainable MSME growth. By taking advantage of this opportunity, MSMEs can contribute to more inclusive and sustainable economic development.

6 Conclusions and Recommendations

In facing increasingly complex global challenges, the integration of the blue and green economy in the digital transformation of MSMEs in Indonesia has become a necessity. By exploiting existing potential and overcoming various challenges, MSMEs can play an active role in creating sustainable development. Recommendations that can be given include increasing access to education and training regarding blue and green economic practices, financial support for MSMEs to adopt environmentally friendly technology, as well as developing policies that support innovation and sustainability.

In this case, collaboration between the government, private sector and society is very necessary to create a conducive ecosystem for MSMEs. With the right steps, the integration of the blue and green economy will not only provide benefits for MSMEs, but also for society and the environment as a whole.

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