

Digital Transformation and the Performance of Coastal MSMEs from a Blue Economy Perspective: A Systematic Literature Review

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ABSTRACT



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Digital transformation plays a vital role in improving the competitiveness and sustainability of coastal Micro, Small, and Medium Enterprises (MSMEs) while supporting blue economy principles. This study examines the impact of digital transformation on coastal MSME performance through a Systematic Literature Review (SLR) based on PRISMA 2020 guidelines. Articles were collected from Scopus, ScienceDirect, and Web of Science, with 20 studies selected from 128 identified records for thematic analysis. The findings indicate that digital transformation enhances operational efficiency, market access, innovation, and business competitiveness. Four major themes emerged: digital transformation and MSME performance, enabling and inhibiting factors, business sustainability, and the blue economy perspective. Digital literacy, human resource capabilities, government support, and technological infrastructure were identified as key success factors. The study proposes a conceptual framework integrating digital transformation, digital capabilities, coastal MSME performance, and blue economy principles to support sustainable coastal development.

Keywords: Digital Transformation, Coastal MSMEs, Blue Economy, MSME Performance, Systematic Literature Review, PRISMA

1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) are a key pillar of economic development, contributing to job creation, increased community income, and strengthening local economies. In recent years, advancements in digital technology have transformed the way MSMEs conduct business activities through the adoption of e-commerce, social media, digital payment systems, financial technology (fintech), cloud computing, business intelligence, and various other data-driven technologies. Digital transformation is no longer viewed as a strategic option but rather a necessity for maintaining business competitiveness in an increasingly dynamic and competitive business environment. Various studies have shown that digital transformation can improve operational efficiency, expand market access, strengthen innovation, and enhance overall organizational performance (Khan et al., 2025; Li & Zhao, 2026; Rahman et al., 2024).

The importance of digital transformation is increasingly apparent for MSMEs operating in coastal areas. Unlike MSMEs in urban areas,

coastal MSMEs face various challenges, such as limited market access, poor supporting infrastructure, dependence on natural conditions, and high product distribution costs. These conditions impact business productivity and competitiveness. In this context, digital transformation offers opportunities to overcome geographical barriers by utilizing digital platforms that expand market access, improve supply chain efficiency, strengthen relationships with consumers, and increase the added value of coastal products. Research in the fisheries and maritime sector shows that the use of digital technology can increase transparency, distribution efficiency, and the competitiveness of marine products (Martins et al., 2024; Pratama et al., 2025).

In addition to improving economic performance, digital transformation also contributes to achieving sustainable development. Digitalization enables businesses to increase resource efficiency, optimize supply chains, reduce waste, and develop more environmentally friendly innovations. From a

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sustainable development perspective, digital transformation can be an instrument that supports the balanced achievement of economic, social, and environmental goals through the development of more adaptive and innovative business models. Various studies have shown that digitalization has a positive relationship with improving the sustainability performance of MSMEs when supported by adequate innovation and organizational capabilities (Chen et al., 2025; Rof et al., 2023; Al Mamun et al., 2022).

In the context of coastal development, sustainability issues are increasingly linked to the concept of the blue economy. The blue economy is a development approach that emphasizes the productive use of marine and coastal resources while preserving the environment and improving community well-being. This concept seeks to create a balance between economic growth, social inclusion, and ecosystem sustainability as the foundation for sustainable maritime development. Various studies have shown that the use of digital technology can support the implementation of the blue economy by increasing the efficiency of marine resource management, strengthening fishery product traceability systems, developing digital supply chains, and optimizing data-driven maritime economic activities (Zhang et al., 2024; Liu et al., 2026).

The relationship between digital transformation and the blue economy is also gaining increasing attention in academic literature. Digital technology acts as a catalyst in creating a more efficient, transparent, and sustainable coastal economic system. Digitalization can reduce information asymmetry, increase production efficiency, strengthen connectivity between business actors, and expand access to markets and financial services. Integrating digital technology with blue economy principles also has the potential to increase the competitiveness of coastal MSMEs while supporting environmental sustainability and the well-being of coastal communities (Garcia et al., 2026; Putri et al., 2026).

However, successful digital transformation does not occur automatically. Various studies have shown that digital literacy, innovation capacity, institutional support, access to technology, human resource quality, and organizational capabilities are critical factors determining the success of digital transformation implementation. An organization's ability to adapt to change and manage digital resources is a strategic factor in creating sustainable competitive advantage (Schallmo et al., 2021; Ferreira et al., 2023; Muler et al., 2024).

However, studies on digital transformation, MSME performance, and the blue economy are still developing separately. Most research focuses on the relationship between digital transformation and MSME performance in general, while research on the blue economy focuses more on marine resource management and sustainable coastal area development. Meanwhile, research on digitalization and sustainability is also developing as a separate

field of study. This situation indicates that the relationship between digital transformation, coastal MSME performance, and blue economy implementation has yet to be widely studied in an integrated manner.

Furthermore, various previous studies and Systematic Literature Reviews (SLRs) generally discuss MSME digitalization, digital entrepreneurship, innovation, or sustainability separately. Studies that specifically integrate digital transformation, coastal MSME performance, and the blue economy within a single conceptual framework are still relatively limited, both theoretically and empirically. This is despite the fact that coastal MSMEs have distinct characteristics from MSMEs in general, such as dependence on marine resources, limited market access, vulnerability to environmental change, and geographic barriers that impact business activities. Therefore, a more comprehensive understanding of how digital transformation can improve coastal MSME performance while supporting the implementation of the blue economy is still needed. These limitations indicate a research gap that needs to be addressed through a more systematic study. The novelty of this research lies in its integration of three areas of study that have been largely studied separately: digital transformation, coastal MSME performance, and the blue economy. Unlike previous research, which tends to address these three aspects in isolation, this study develops a conceptual perspective that explains how digital transformation can strengthen the capabilities and performance of coastal MSMEs while contributing to the achievement of blue economy goals, which include economic growth, social inclusion, and environmental sustainability. Therefore, this research is expected to expand the literature on digital transformation and the blue economy and provide a more comprehensive understanding of sustainable coastal economic development.

Based on these research gaps, this study aims to answer several research questions: (1) how is the implementation of digital transformation progressing among coastal MSMEs; (2) how does digital transformation affect the performance of coastal MSMEs; (3) what factors support and hinder the implementation of digital transformation; (4) how does digital transformation contribute to the implementation of the blue economy; and (5) what conceptual model can explain the relationship between digital transformation, coastal MSME performance, and the blue economy. To answer these questions, this study uses a Systematic Literature Review (SLR) approach to synthesize various empirical findings and develop an integrated conceptual framework to support sustainable coastal economic development.

Figure 1. Research Conceptual Framework

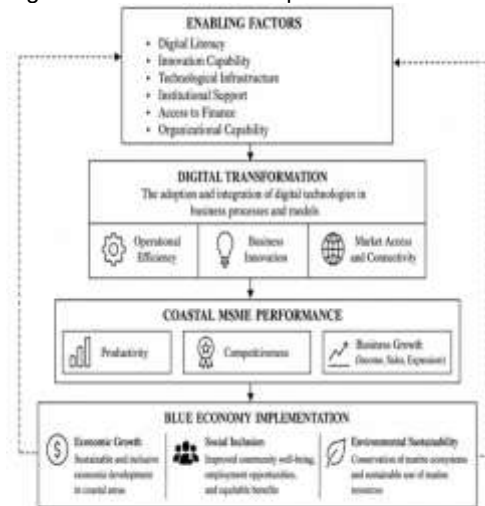


Figure 1. Proposed Conceptual Framework of Digital Transformation, Coastal MSME Performance, and Blue Economy Implementation.

Figure 1 shows that various supporting factors, such as digital literacy, innovation, technological infrastructure, institutional support, access to financing, and organizational capabilities, influence the success of digital transformation in coastal MSMEs. Digital transformation subsequently improves operational efficiency, innovation, and market access, which impacts the performance of coastal MSMEs. Improved performance is expected to support the implementation of the blue economy by achieving inclusive economic growth, improving the welfare of coastal communities, and promoting environmental sustainability.

2. Method

This study uses a Systematic Literature Review (SLR) approach to comprehensively analyze the relationship between digital transformation, coastal MSME performance, and the blue economy. The SLR approach was chosen because it allows for systematic, transparent, and replicable identification, evaluation, and synthesis of literature, resulting in a more comprehensive understanding of research developments in this field. To ensure the research's methodological quality, the review process adopted the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines developed by Page et al. (2021). The literature search was conducted in three reputable international databases: Scopus, ScienceDirect, and Web of Science. These three databases were selected because of their extensive international publication coverage, rigorous peer-review processes, and widespread use in systematic literature reviews. The use of multiple databases aims to increase the comprehensiveness of the literature and minimize the possibility of missing relevant research. The search was conducted using Boolean-based keyword combinations such as "digital transformation" AND "MSME"

AND "coastal," "digitalization" AND "blue economy," and "coastal SMEs" AND "sustainability."

Inclusion criteria included articles from international journals in English, indexed by Scopus, open access, published between 2020 and 2026, and directly relevant to the topics of digital transformation, coastal MSMEs, and the blue economy. Proceedings, books, editorials, irrelevant articles, and duplicate publications were excluded from the selection process. In addition to meeting the inclusion and exclusion criteria, selected articles were also evaluated based on topic relevance, methodological clarity, consistency of research results, and their scientific contribution to the development of studies on digital transformation, coastal MSMEs, and the blue economy. Only articles meeting these quality standards were retained for further analysis.

The article selection process followed the four main stages of PRISMA: identification, screening, eligibility, and inclusion. During the identification stage, 128 articles were obtained from the initial search results across the three databases. After removing duplicate articles, 102 articles remained, which were screened based on the title, abstract, and research keywords. This stage yielded 46 articles deemed relevant to the research focus. A full-text review was then conducted during the eligibility stage, yielding 27 articles that met all inclusion criteria. In the final inclusion stage, 20 articles were selected as the final sample for further analysis. This number was deemed representative of research developments on digital transformation, coastal MSMEs, and the blue economy, as they met all established selection and quality criteria.

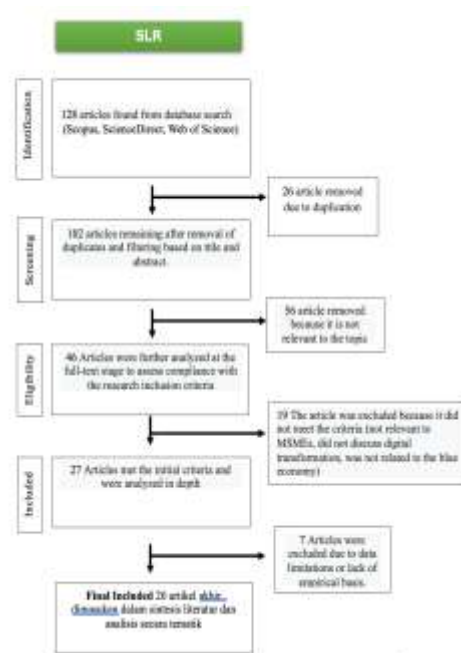
Data analysis was conducted using a thematic analysis approach through coding, categorization, and synthesis of research findings. The thematic coding process was conducted systematically by identifying key concepts from each article, grouping findings with similar characteristics, and organizing key themes based on patterns of relationships emerging in the literature. The analysis yielded four main themes: (1) digital transformation as a driver of coastal MSME performance; (2) supporting factors and barriers to digital transformation; (3) digital transformation and business sustainability; and (4) digital transformation from a blue economy perspective.

To maintain the validity and reliability of the research results, the article selection, data extraction, and theme grouping processes were systematically conducted based on the PRISMA 2020 guidelines. Furthermore, the analysis results were verified by checking the consistency between the research objectives, methods, and key findings of each article. The validation process was also supported by

peer discussion and thematic triangulation through comparisons of research results from various databases, research methods, and geographic contexts to minimize subjectivity of interpretation and increase the credibility of the synthesis results.

This study has several limitations that should be considered. The study only used articles from the Scopus, ScienceDirect, and Web of Science databases and was limited to articles from peer-reviewed, English-language international journals. Furthermore, proceedings, books, and other types of publications were not included in the analysis, potentially introducing publication bias. Nevertheless, these limitations were implemented to maintain the quality, consistency, and reliability of the resulting literature synthesis

Chart 1. Stages of Systematic Literature Review



Literature Synthesis Digital Transformation Literature Matrix on MSME Performance

(1) Navigating MSMEs' Performance Through Innovation and Digital IT Capabilities in Business Strategy (2025) demonstrates that digital capabilities and innovation significantly improve MSME performance and competitiveness. (2) How Digital Transformation Enhances Sustainable Performance Through Dynamic Capabilities and Open Innovation Practices in SMEs (2026) further reveals that dynamic capabilities mediate the relationship between digital transformation and sustainable performance. (3) Linking Environmental Sustainability, Digital Transformation, and Innovation: Evidence from MSMEs (2025) shows that digital transformation promotes innovation while enhancing environmental sustainability among MSMEs. (4) Do We Consider Sustainability When We Measure SMEs' Performance Passing Through Digital Transformation? (2023) argues that MSME performance measurement should include sustainability dimensions in addition to financial indicators. (5) The Long Path to Achieving Green Economy Performance for MSMEs (2022) finds that green innovation and digitalization positively contribute to green economic performance. (6) Theoretical Model of Green Entrepreneurship and Digital Transformation in Enhancing Sustainability of MSMEs (2026) proposes that digital transformation strengthens green entrepreneurial practices and long-term business sustainability.

(7) Spurring SMEs' Performance Through Business Intelligence and Innovation (2024) highlights that business intelligence improves decision-making quality and enhances organizational performance. (8) Can Advanced Society 5.0 Technology Create Economic and Social Value for MSMEs? (2025) demonstrates that advanced digital technologies generate both economic and social value for MSMEs. (9) Towards Understanding Enablers of Digital Transformation in SMEs (2021) identifies leadership, organizational

culture, and technology as key drivers of digital transformation. (10) Exploring the Enablers of Digital Transformation in SMEs (2023) emphasizes that digital infrastructure and human resource competencies are critical for successful digital transformation. (11) Building and Development of an Organizational Competence for Digital Transformation in SMEs (2024) concludes that organizational capabilities provide the foundation for effective digital transformation initiatives.

(12) The Impacts of Digital Transformation on Fisheries Policy and Sustainability: Lessons from Timor-Leste (2024) demonstrates that digitalization improves fisheries governance and the sustainability of marine resources. (13) A Transition to Sustainable Marine Living Resources: Why Does Digital Transformation Matter? (2024) suggests that digital technologies support more efficient management of marine living resources. (14) How Does the Digital Economy Empower High-Quality Marine Development? (2026) finds that the digital economy enhances productivity and promotes high-quality development in the marine sector. (15) Disruptive Sustainability Through Digital Innovations: Overcoming Information Asymmetries to Benefit Small-Scale Producers (2026) indicates that digital innovations reduce information asymmetries and improve the welfare of small-scale producers.

(16) E-BLUE: Implementation of an Integrated Blue Economy Ecosystem to Increase Coastal MSMEs Competitiveness (2024) reveals that integrating digital technologies into the blue economy ecosystem enhances the competitiveness of coastal MSMEs. (17) Digitalization and Sustainability Synergies: Empowering Coastal SMEs in the Blue Economy Era (2026) highlights that the synergy between digitalization and sustainability strengthens the resilience of coastal enterprises. (18) Unveiling the Interplay of Triple Bottom Line and Blue Economy in Empowering Coastal MSMEs (2025) demonstrates that eco-

conomic, social, and environmental performance mutually reinforce the development of coastal MSMEs. (19) Synergy of Digitalization and Sustainability: A Green Business Model for MSMEs in the Era of Industry 5.0 (2025) proposes that integrating digitalization and sustainability creates more adaptive and resilient MSME business models. Finally, (20) E-Business Transformation for Coastal Fishery Development: Economic Assessment of Value-Added Strategies (2025) concludes that e-business transformation enhances value creation and expands market access for coastal fishery products.

Overall, the twenty studies indicate that digital transformation has evolved beyond technological adoption to become a strategic mechanism for improving MSME performance, fostering sustainability, strengthening organizational capabilities, supporting blue economy development, and enhancing the competitiveness and resilience of coastal MSMEs. Collectively, these findings suggest the need for integrated approaches that combine digital transformation, sustainability, and blue economy principles to achieve long-term sustainable development for coastal MSMEs.

3. Results

a. Integration of Theoretical Perspectives

This research is built on the integration of several theoretical perspectives to explain the relationship between digital transformation, coastal MSME performance, and blue economy implementation. The Resource-Based View (RBV) perspective explains that digital capabilities are strategic resources that can create competitive advantage and improve MSME performance. Furthermore, Dynamic Capability Theory emphasizes the importance of an organization's ability to integrate, build, and reconfigure resources to adapt to technological changes and a dynamic business environment. From a sustainability perspective, Sustainability Theory explains that improving economic performance must be balanced with the creation of social benefits and environmental preservation. Meanwhile, Blue Economy Theory emphasizes the importance of productively utilizing marine and coastal resources while maintaining ecosystem sustainability and the well-being of coastal communities. The integration of these four perspectives provides a conceptual foundation that digital transformation not only improves the competitiveness and performance of coastal MSMEs but also supports the implementation of a sustainable blue economy.

b. Descriptive Characteristics of Analyzed Studies

Based on the results of a Systematic Literature Review using the PRISMA protocol, 20 articles meeting the inclusion criteria were analyzed to identify general characteristics of research on digital transformation, MSME performance, and the blue economy. Temporally, the distribution of publications showed a significant increase over the past five years, particularly in the 2023–2026 period. This indicates growing academic attention to the role of digital transformation in enhancing MSME competitiveness and supporting sustainable

development. The increased adoption of digital technology following the COVID-19 pandemic is one factor driving the development of research in this area (Navigating MSMEs' Performance Through Innovation and Digital IT Capabilities in Business Strategy, 2025; Exploring the Enablers of Digital Transformation in SMEs, 2023).

Geographically, the majority of research was conducted in Asia, particularly Indonesia, China, Vietnam, Malaysia, and Timor-Leste. Several studies also originated from European and Latin American countries, focusing on MSME digital transformation and business sustainability. The dominance of the Asian region demonstrates that digital transformation is a crucial agenda for increasing the competitiveness of MSMEs in developing countries, which still face various limitations in infrastructure and technology access. Furthermore, several studies have begun to examine digitalization in the coastal and fisheries economic sectors as part of the implementation of a blue economy (The Impacts of Digital Transformation on Fisheries Policy and Sustainability: Lessons from Timor-Leste, 2024; How Does the Digital Economy Empower High-Quality Marine Development?, 2026).

Methodologically, the analyzed research predominantly uses a quantitative approach, using Structural Equation Modeling (SEM), Partial Least Squares (PLS), and multivariate regression to measure the impact of digital transformation on organizational performance. Some studies use a qualitative approach through case studies and in-depth interviews to explore the digital technology adoption process in MSMEs. Several other studies use conceptual approaches and theoretical models to explain the relationship between digitalization, innovation, and business sustainability (Building and Development of an Organizational Competence for Digital Transformation in SMEs, 2024; Theoretical Model of Green Entrepreneurship and Digital Transformation in Enhancing Sustainability of MSMEs, 2026).

Based on the focus of the study, the articles analyzed can be classified into four main groups: digital transformation and MSME performance, factors driving and inhibiting digitalization, digital transformation and business sustainability, and digitalization in the context of the blue economy. Interestingly, most recent studies have begun to integrate economic, social, and environmental dimensions within a single analytical framework, indicating a shift from a conventional business approach to a sustainable development approach based on digital technology.

c. Thematic Analysis

Thematic analysis of the 20 selected articles yielded four main themes that consistently emerged in the literature: (1) digital transformation as a driver of MSME performance, (2) factors supporting and inhibiting digital transformation, (3) digital transformation and business sustainability, and (4) digital transformation from a blue economy perspective. These four themes are interrelated and form a conceptual framework explaining how digitalization can improve MSME performance

while supporting sustainable coastal development.

Theme 1. Digital Transformation as a Driver of MSME Performance

The synthesis results indicate that digital transformation generally has a positive impact on the performance of coastal MSMEs by improving operational efficiency, expanding market access, increasing innovation, and strengthening business competitiveness. Various digital technologies such as e-commerce, social media, digital payment systems, and business intelligence enable MSMEs to optimize business processes and expand consumer reach. However, these benefits do not occur automatically, as they are influenced by the level of digital capability, organizational readiness, and innovation capabilities of each business actor.

These findings demonstrate that digital transformation is not merely a process of technology adoption but also a strategy for building sustainable competitive advantage. In the context of coastal MSMEs, digitalization plays a more important role than in other sectors because it can overcome geographical limitations, shorten distribution chains, and reduce information asymmetries between producers and consumers. These results reinforce the view that digital transformation can be a strategic instrument in increasing the productivity and economic resilience of coastal communities.

Theme 2. Supporting Factors and Barriers to Digital Transformation

Research results indicate that the success of digital transformation is influenced by various internal and external factors. Internal factors include digital literacy, innovation capacity, organizational capability, and human resource readiness. Meanwhile, external factors include digital infrastructure, access to financing, government support, and institutional policies that support the digitalization of MSMEs.

Conversely, various studies also indicate that low digital competency, limited technological infrastructure, and unequal internet access remain major obstacles to implementing digital transformation, particularly in coastal areas and developing countries. These findings demonstrate that successful digital transformation requires a collaborative approach through synergy between the government, the private sector, educational institutions, and the community. Therefore, developing a digital ecosystem is crucial for accelerating the sustainable transformation of coastal MSMEs.

Theme 3. Digital Transformation and

The synthesis of these findings indicates that digital transformation not only contributes to improving the economic performance of MSMEs but also supports the achievement of sustainable development goals. The use of digital technology enables more efficient resource management, reduced operational costs, increased supply chain transparency, and the development of more environmentally friendly business innovations.

However, several studies indicate that the sustainable benefits of digital transformation

depend heavily on MSMEs' ability to integrate technology with business strategies and organizational innovation. Digitalization is not an end in itself, but rather a means to create a balance between economic growth, social welfare, and environmental preservation. Therefore, the success of digital transformation requires a commitment to sustainable business practices so that the resulting economic benefits can have broader social and environmental impacts.

Theme 4. Digital Transformation from a Blue Economy Perspective

The study results show that digital transformation has a strategic role in supporting the implementation of the blue economy. Digital technology is able to increase the efficiency of coastal and marine resource management, strengthen fishery product tracking systems, expand market access, and increase transparency in the marine product supply chain. These conditions provide opportunities for coastal MSMEs to increase the added value of their products while strengthening their competitiveness in domestic and international markets.

However, literature that integrates digital transformation, coastal MSME performance and the blue economy is still relatively limited. Most studies discuss the relationship between digitalization and the performance of MSMEs or the blue economy separately, so the relationship between these three concepts has not been explained comprehensively. These findings show that digital transformation can be positioned as a link between increasing the competitiveness of coastal MSMEs and implementing blue economy principles. In the context of Indonesia as a maritime country, the integration of digitalization and the blue economy has the potential to become a coastal development strategy capable of creating economic growth, improving community welfare, and maintaining the sustainability of marine resources.

d. Synthesis of Key Findings

The synthesis of 20 articles shows that digital transformation plays a significant role in improving MSME performance by increasing operational efficiency, expanding market access, strengthening innovation, and enhancing business productivity. Digital technology enables MSMEs to reduce geographical barriers, accelerate business processes, and improve adaptability to increasingly dynamic business environments. These findings demonstrate that digitalization has become a key source of competitive advantage for MSMEs in the digital economy era.

In addition to its economic impact, digital transformation also contributes to business sustainability by increasing resource efficiency and developing sustainable innovation. Various studies have shown that the integration of digital technology and sustainable business practices can generate economic benefits while reducing environmental impacts. Thus, digital transformation serves not only as an

instrument for improving business performance but also as a mechanism for achieving sustainable development goals.

In the context of coastal areas, digital transformation has broader implications because it can support the implementation of a blue economy. Digitalization enables more effective management of marine resources through data utilization, increased supply chain transparency, and the development of more efficient distribution systems. Through digital technology, coastal MSMEs can improve market access, strengthen the added value of marine products, and reduce dependence on conventional distribution chains, which have been a major obstacle to coastal business development.

However, the synthesis also shows that the success of digital transformation is heavily influenced by various supporting factors, such as digital literacy, human resource quality, government policy support, technological infrastructure, and organizational capabilities. Without these factors, the benefits of digital transformation are difficult to realize optimally. Therefore, developing an inclusive digital ecosystem is a key prerequisite for improving the performance of coastal MSMEs and supporting the sustainable implementation of the blue economy.

Overall, the results of this study indicate that digital transformation, MSME capabilities, and the blue economy are three interrelated components that form an integrated system. Digital transformation enhances organizational capabilities, these capabilities drive improved coastal MSME performance, and ultimately contribute to the achievement of blue economy goals of economic growth, social inclusion, and environmental sustainability. These findings form the basis for developing a conceptual model that integrates these three dimensions within a framework for sustainable coastal economic development.

4. Discussion

4.1 Digital Transformation as a Driver of Coastal MSME Performance

The literature synthesis shows that digital transformation is a strategic factor in improving MSME performance, both financially and non-financially. The majority of studies found that the adoption of digital technologies such as e-commerce, social media, digital payment systems, business intelligence, and data-driven technologies can increase business productivity, expand market access, and improve operational efficiency. This finding aligns with the study "Navigating MSMEs' Performance Through Innovation and Digital IT Capabilities in Business Strategy" (2025), which demonstrated that digital capabilities contribute significantly to improving business performance by strengthening innovation and business strategy.

This improved performance occurs because digital technology can alleviate various limitations currently faced by MSMEs,

particularly regarding access to information and market reach. The study "Spurring SMEs' Performance Through Business Intelligence and Innovation" (2024) showed that the use of information technology enables MSMEs to obtain real-time market information, enabling them to respond more quickly to changing consumer needs. Similar findings were also found in the study "Can Advanced Society 5.0 Technology Create Economic and Social Value for MSMEs?" (2025), which explains that the use of digital technology not only increases business revenue but also creates social value by enhancing connectivity between businesses and consumers.

In the context of coastal MSMEs, digital transformation plays a more strategic role because it can overcome geographical barriers, which have historically been a major obstacle to business development. Digital technology enables coastal businesses to market products directly to consumers without relying entirely on traditional intermediaries. Thus, digitalization has the potential to increase product added value and strengthen MSMEs' bargaining position in the fisheries and marine supply chain.

Theoretically, these findings support the Resource-Based View (RBV) perspective, which states that the ability to utilize digital technology is a strategic resource that can create sustainable competitive advantage. Digital capabilities serve not only as operational tools but have become organizational assets that determine the success of MSMEs in facing increasingly complex business competition.

4.2 Supporting Factors and Barriers to Digital Transformation in Coastal MSMEs

Although digital transformation offers various benefits for MSMEs, the study shows that its success is heavily influenced by various internal and external factors. The literature consistently identifies digital literacy, human resource competency, government support, organizational readiness, and the availability of technological infrastructure as key drivers of successful digital transformation.

The study "Towards Understanding Enablers of Digital Transformation in SMEs" (2021) demonstrates that organizational leadership and a culture of innovation play a crucial role in driving the adoption of digital technology. Meanwhile, "Exploring the Enablers of Digital Transformation in SMEs" (2023) emphasizes the importance of technological infrastructure support and organizational ability to manage change. The study "Building and Development of an Organizational Competence for Digital Transformation in SMEs" (2024) even found that organizational digital competence is the most dominant factor in determining the success of digital transformation implementation.

On the other hand, various obstacles remain in the digitalization process for MSMEs. Limited capital, low digital literacy,

lack of technological training, and limited internet access remain key challenges faced by MSMEs, particularly in coastal areas. These conditions contribute to a digital divide between MSMEs in urban and coastal areas.

In the context of Indonesia's coastal economy, these obstacles are further complicated by the fact that most businesses still rely on conventional marketing methods and have limited access to information technology. Therefore, successful digital transformation requires support from an ecosystem involving the government, financial institutions, universities, and the private sector to create a conducive environment for MSME digitalization.

4.3 Digital Transformation and MSME Sustainability

In addition to improving economic performance, studies show that digital transformation also contributes to business sustainability. Various studies have found that digital technology enables companies to increase resource efficiency, reduce operational costs, and develop more environmentally friendly innovations.

The study "How Digital Transformation Enhances Sustainable Performance Through Dynamic Capabilities and Open Innovation Practices in SMEs" (2026) shows that digital transformation improves sustainable performance by strengthening dynamic capabilities and open innovation. These findings are supported by the study "Linking Environmental Sustainability, Digital Transformation, and Innovation: Evidence from MSMEs" (2025), which found that digitalization can improve organizations' ability to develop innovations oriented towards environmental sustainability.

Similar findings were also reported by "The Long Path to Achieving Green Economy Performance for MSMEs" (2022) and "Theoretical Model of Green Entrepreneurship and Digital Transformation in Enhancing Sustainability of MSMEs" (2026). Both studies demonstrate that digitalization can be a catalyst for green business development by increasing energy efficiency, reducing waste, and optimizing production processes.

The synthesis results indicate that the relationship between digital transformation and sustainability is not direct, but rather mediated by an organization's ability to develop innovation and manage change. In other words, digital technology will only impact sustainability if supported by adequate organizational capabilities. This finding reinforces the concept of Dynamic Capability Theory, which explains that an organization's ability to integrate and utilize resources is a key factor in creating a sustainable competitive advantage.

4.4 Digital Transformation from a Blue Economy Perspective

The final theme emerging from the literature synthesis is the role of digital transformation in supporting the

implementation of a blue economy. Although the number of studies on this theme is still relatively limited compared to other themes, the results indicate that digitalization has significant potential to accelerate the development of a sustainable coastal economy.

The study, "The Impacts of Digital Transformation on Fisheries Policy and Sustainability: Lessons from Timor-Leste" (2024), shows that the use of digital technology can improve the efficiency of fisheries sector management through more accurate and transparent information systems. Meanwhile, "A Transition to Sustainable Marine Living Resources: Why Does Digital Transformation Matter?" (2024) explains that digitalization plays a crucial role in supporting sustainable marine resource management by strengthening monitoring systems and data-driven decision-making.

The study "How Does the Digital Economy Empower High-Quality Marine Development?" (2026) shows that the digital economy can improve the quality of maritime development by optimizing supply chains, increasing productivity, and strengthening innovation in the marine sector. These findings are reinforced by the study "Digitalization and Sustainability Synergies: Empowering Coastal SMEs in the Blue Economy Era" (2026), which confirms that digitalization can strengthen the competitiveness of coastal MSMEs while supporting blue economy goals through increased efficiency, social inclusion, and environmental sustainability.

Based on the synthesis of all articles, digital transformation can be positioned as a key enabler in the implementation of the blue economy. Digital technology enables coastal MSMEs to increase market access, improve supply chain efficiency, strengthen marine product traceability systems, and optimize the utilization of coastal resources. Thus, digital transformation not only improves business performance but also supports the achievement of the three main pillars of the blue economy: economic growth, social inclusion, and environmental sustainability.

4.5 Integrative Synthesis

Based on these four themes, it can be concluded that the relationship between digital transformation, coastal MSME performance, and the blue economy forms an integrated mechanism. Digital transformation enhances organizational capabilities by strengthening digital literacy, innovation, and market access. These capabilities subsequently improve coastal MSME performance in the form of increased income, productivity, and competitiveness. In the next stage, this improved performance contributes to the implementation of the blue economy by strengthening local economic growth, improving the welfare of coastal communities, and promoting more sustainable use of marine resources.

This synthesis model is the research's main theoretical contribution because it integrates three concepts that have been largely studied separately—digital transformation, coastal MSME performance, and the blue economy—into a single, comprehensive conceptual framework.

4.6 Theoretical Contributions

This research makes several important theoretical contributions to the growing literature on digital transformation, MSME performance, and the blue economy. First, the results of a synthesis of 20 articles indicate that digital transformation not only serves as an instrument for increasing operational efficiency but also serves as a strategic resource capable of creating sustainable competitive advantage for MSMEs. This finding reinforces the Resource-Based View (RBV) perspective, which positions digital capabilities as valuable, difficult-to-imitate organizational assets capable of generating superior performance. Various studies analyzed demonstrate that the use of digital technologies such as e-commerce, business intelligence, fintech, cloud computing, and social media consistently contributes to increased productivity, innovation, and competitiveness of MSMEs.

Second, this study expands on the development of Dynamic Capability Theory by demonstrating that the success of digital transformation is determined not only by technology adoption but also by an organization's ability to effectively integrate, develop, and utilize digital resources. The results of the synthesis indicate that digital literacy, organizational competence, innovation, and institutional support are important factors mediating the relationship between digital transformation and MSME performance. These findings confirm that dynamic capabilities are a key mechanism enabling MSMEs to adapt to changes in an increasingly complex and digitalized business environment.

Third, this research contributes to the development of the blue economy literature by integrating a digital transformation perspective into a framework for sustainable coastal economic development. Most previous research has addressed digital transformation and the blue economy separately. Through a synthesis of 20 articles, this research demonstrates that digitalization can act as an enabler in the implementation of the blue economy by increasing the efficiency of the fisheries supply chain, strengthening the traceability system for marine products, optimizing market access, and improving coastal resource management. Thus, this research broadens understanding of the relationship between digital technology and sustainable maritime economic development.

Fourth, the main theoretical contribution of this research is the development of an integrative conceptual model that links digital transformation, MSME digital capabilities, coastal MSME performance, and blue

economy outcomes within a single, comprehensive analytical framework. This model explains that digital transformation enhances organizational digital capabilities, these capabilities drive improved coastal MSME performance, and ultimately contribute to the achievement of blue economy goals, which encompass economic growth, social inclusion, and environmental sustainability. This model fills the research gap that has previously separated the study of MSME digitalization, coastal development, and the blue economy.

4.7 Practical Contributions

The results of this study also provide practical implications for various stakeholders involved in the development of coastal MSMEs and the implementation of the blue economy. For the central and regional governments, the research findings demonstrate the importance of strengthening the digital ecosystem through the development of information technology infrastructure, expanding internet access in coastal areas, and developing policies that support the digitalization of MSMEs. A digital transformation program integrated with the blue economy agenda can be a strategic instrument for improving the welfare of coastal communities while maintaining the sustainability of marine resources.

For the Cooperatives and MSMEs Office, this study demonstrates that improving digital literacy and technological capabilities are critical factors for the success of digital transformation. Therefore, ongoing training programs related to digital marketing, e-commerce platform management, fintech utilization, business data analysis, and the development of technology-based innovations are needed. This approach can help MSMEs increase their competitiveness and expand market access, both nationally and internationally.

For the Maritime Affairs and Fisheries Office, the research results indicate that digital transformation can be used to improve the efficiency of the fishery and marine product supply chain through the development of a seafood marketplace, a fishery product traceability system, a digital fisheries ecosystem, and a technology-based market information platform. The implementation of this technology can improve transparency, product quality, and the added value of fishery commodities produced by coastal MSMEs.

For coastal MSMEs, this study demonstrates that digital transformation is a crucial strategy for improving business performance. Adopting digital technology not only expands market access but also improves operational efficiency, strengthens customer relationships, and supports product innovation. Businesses need to improve their digital competencies and adaptability to technological developments to capitalize on emerging opportunities in the digital economy.

For financial institutions and the private sector, the study findings demonstrate the need to develop more inclusive digital-based financing and mentoring services for coastal MSMEs. Access to digital financing, fintech, and technology-based financial services can help overcome capital constraints, which have been a major obstacle to the digital transformation process.

5. Conclusion

This study aims to analyze the relationship between digital transformation, coastal MSME performance, and the blue economy through a systematic literature review of 20 articles indexed by Scopus and other reputable scientific sources. The study's results indicate that digital transformation is a strategic factor capable of improving MSME performance by increasing operational efficiency, expanding market access, strengthening innovation, and enhancing business competitiveness. The adoption of digital technologies such as e-commerce, social media, financial technology (fintech), business intelligence, and various other digital platforms has been proven to have a positive impact on business growth and sustainability, including in the coastal and marine-based business sector.

The synthesis also shows that the success of digital transformation is not solely determined by the availability of technology, but is also heavily influenced by digital literacy, human resource competency, government support, organizational readiness, and adequate technological infrastructure. These factors act as enablers, enabling MSMEs to optimize the benefits of digital technology to increase productivity and create added value for their businesses. Conversely, limited digital competency, access to technology, and financing remain key barriers that need to be addressed to accelerate the digitalization process, particularly for MSMEs operating in coastal areas.

This study also found that digital transformation has a significant contribution to the implementation of the blue economy. The use of digital technology can support more efficient management of coastal and marine resources through strengthening information systems, digitizing supply chains, improving fishery product traceability, and developing sustainability-based innovations. Thus, digitalization not only generates economic benefits in the form of increased income and competitiveness for MSMEs, but also supports blue economy goals by improving the welfare of coastal communities, efficient resource utilization, and environmental sustainability.

The main contribution of this study is the development of a conceptual framework that integrates digital transformation, MSME digital capabilities, coastal MSME performance, and the blue economy into a single, comprehensive model. The model demonstrates that digital transformation

enhances organizational capabilities by strengthening digital literacy, innovation, and market access; these capabilities, in turn, drive improved performance of coastal MSMEs; and ultimately contribute to the achievement of blue economy goals, which include economic growth, social inclusion, and environmental sustainability.

However, this study has limitations because it only used articles that met specific inclusion criteria and did not conduct empirical testing of the resulting conceptual model. Therefore, further research is recommended to empirically test the model on coastal MSMEs in various regions, using quantitative approaches such as SEM-PLS or CB-SEM. Further research could also develop new variables, such as digital capability, innovation capability, government support, and blue economy orientation, to gain a more comprehensive understanding of the mechanisms of digital transformation in supporting sustainable coastal economic development.

Overall, the research findings confirm that digital transformation is a strategic instrument that not only improves the performance of coastal MSMEs but also serves as a crucial catalyst for realizing a sustainable blue economy. Therefore, strengthening the digital ecosystem, increasing human resource capacity, and integrating digitalization policies with the blue economy agenda should be priorities in coastal development in Indonesia.

Reference

- Al Mamun, A., et al. (2022). The Long Path to Achieving Green Economy Performance for MSMEs. *Journal of Innovation and Entrepreneurship*.
- Chen, X., et al. (2025). Linking Environmental Sustainability, Digital Transformation, and Innovation: Evidence from MSMEs. *Journal of Innovation and Knowledge*.
- Ferreira, J., et al. (2023). Exploring the Enablers of Digital Transformation in SMEs. *DigitalBusiness*.
- Garcia, M., et al. (2026). Disruptive Sustainability Through Digital Innovations: Overcoming Information Asymmetries to Benefit Small-Scale Producers. *Research Policy*.
- Hidayat, R., et al. (2025). Synergy of Digitalization and Sustainability: A Green Business Model for MSMEs in the Era of Industry 5.0. *Journal of Economic, Entrepreneurship and Accounting Education (JPEKA)*.
- Khan, A., et al. (2025). Navigating MSMEs' Performance Through Innovation and Digital IT Capabilities in Business Strategy. *Heliyon*.
- Li, Y., & Zhao, H. (2026). How Digital Transformation Enhances Sustainable Performance Through Dynamic Capabilities and Open Innovation Practices in SMEs. *Discover Sustainability*.
- Liu, Z., et al. (2026). How Does the Digital Economy Empower High-Quality Marine

- Development? Ocean and Coastal Management.
- Martins, J., et al. (2024). The Impacts of Digital Transformation on Fisheries Policy and Sustainability: Lessons from Timor-Leste. Marine Policy.
- Müller, T., et al. (2024). Building and Development of an Organizational Competence for Digital Transformation in SMEs. Digital Transformation Review.
- Nugroho, A., et al. (2025). Triple Bottom Line and Blue Economy Performance in Coastal MSMEs. Journal of Economic, Entrepreneurship and Accounting Education (JPEKA).
- Pratama, D., et al. (2025). E-Business Transformation for Coastal Fishery Development: Economic Assessment of Value-Added Strategies. International Journal of Management and Economic Analysis.
- Putri, N., et al. (2026). Digitalization and Sustainability Synergies: Empowering Coastal SMEs in the Blue Economy Era. Atlantis Press Proceedings.
- Rahman, M., et al. (2024). Spurring SMEs' Performance Through Business Intelligence and Innovation. Heliyon.
- Rof, A., et al. (2023). Do We Consider Sustainability When We Measure SMEs' Performance Passing Through Digital Transformation? Sustainability.
- Schallmo, D., et al. (2021). Towards Understanding Enablers of Digital Transformation in SMEs. DigitalBusiness.
- Suryani, E., et al. (2024). E-BLUE Model: Digital Ecosystem Development for Coastal MSMEs. Journal of Economics and Business.
- Wang, H., et al. (2025). Can Advanced Society 5.0 Technology Create Economic and Social Value for MSMEs? Asian Journal of Technology Innovation.
- Wijaya, A., et al. (2026). Theoretical Model of Green Entrepreneurship and Digital Transformation in Enhancing Sustainability of MSMEs. Sustainable Futures.
- Zhang, L., et al. (2024). A Transition to Sustainable Marine Living Resources: Why Does Digital Transformation Matter? Technological Forecasting and Social Change.
- Zhao, Q., et al. (2025). Digital Transformation and Sustainable Business Development in Coastal Economies. Sustainability.