

The Impact of Digital Transformation on MSMEs Agility and Business Performance in The Modern Era

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Abstract

Digital transformation has become a key driver of business development in the modern era, especially for Micro, Small, and Medium Enterprises (MSMEs). In West Sumatra, despite numerous challenges in adopting technology, digitalization offers significant opportunities to enhance organizational agility and business performance. This study aims to examine the impact of digital transformation on business agility and business performance in the modern era. Digital transformation is a crucial factor driving organizational change, improving operational efficiency, and increasing competitiveness. The study uses a sample of 120 MSMEs from various sectors in West Sumatra. A Structural Equation Modeling (SEM) approach with Partial Least Squares (PLS) analysis was used to assess the relationships between digital transformation, business agility, and performance outcomes. The research results show that changes in information technology have a positive and significant influence on organizational performance. There is a significant positive relationship between changes in information technology and MSME business performance. Organizational performance has a positive and significant influence on MSME business performance. Business performance plays an important role as an intermediary between changes in information technology and MSME business performance in West Sumatra.

Keyword : Digital Transformation, Business Agility, Business Performance, MSMEs,

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Introduction

Technological changes have become an important obstacle in the formation of trading techniques and operations in the modern era MSMEs. In West Sumatra, even though the availability of technology is increasing, many MSMEs still face serious challenges in achieving technological progress due to limited resources, infrastructure and digital education. However, despite these obstacles, technological change provides great opportunities for improving trade skills, enhance operational efficiency, and foster sustainable growth in a rapidly evolving market environment.

MSMEs are recognized as the backbone of many economies, contributing significantly to

employment and economic growth. In Indonesia, MSMEs account for over 99% of the total number of businesses and 60% of the workforce (World Bank, 2021). However, their capacity to compete universally is usually limited by limited access to innovation, funding and data. This is especially true in regions like West Sumatra, where MSMEs are primarily traditional and face difficulty adapting to the digital landscape.

Digital transformation can help MSMEs increase agility, allowing them to respond quickly to market changes, enhance customer experiences, and innovate in their products and services. According to a study by Rachmawati, (2024), In the continuously evolving digital era, Changes in data innovation have had a significant impact on the world of commerce. For Small and

Medium Enterprises, data digitization is not just an option, but a necessity that remains important in an increasingly competitive market. In this context, digital marketing strategies have emerged as the key to expanding reach, enhancing visibility, and strengthening customer engagement. The digitalization of business processes in MSMEs enables them to streamline operations, reduce costs, and improve decision-making. Additionally, research by Mubarak et al., (2019) found that the use of technological advances such as e-commerce platforms and cloud computing significantly improved MSMEs' operational efficiency and competitiveness.

Nevertheless, challenges remain, as many MSMEs still struggle with integrating digital tools due to limited digital skills, inadequate infrastructure, and resistance to change. Hendrawan et al., (2024) Computerized change refers to the choice of advanced innovation to advance operational productivity, expand market reach, and increase competitiveness. For MSMEs which often have limited resources, digitalization offers an important opportunity to compete with larger, more established companies. However, behind these opportunities, there are various challenges in managing technology. More advanced changes in Small, Medium and Small and Medium Enterprises (MSMEs) can be an effort used to change the economy, educate people and society as a whole at a systemic level. Digital transformation in MSMEs can be interpreted as an effort to increase trade operational efficiency, create untapped trade opportunities, and generate significant profits. MSMEs play an important role in the world economy, including in developing countries such as Indonesia, which provide a total contribution to GDP and employment. The success of digital adoption is often linked to the ability of business owners to recognize the long-term benefits and align their business strategies with digital advancements Juwita & Handayani, (2022). Furthermore, business performance is heavily influenced by how well MSMEs adapt to new

technologies. A research study by Roman & Rusu, (2022). confirmed that businesses that invested in digital transformation experienced a marked improvement in both operational efficiency and financial performance. These studies highlight the growing need for MSMEs in West Sumatra to adopt digital transformation to stay competitive and agile in a digital economy.

Although there is considerable research on digital transformation and its impact on business performance globally, studies focusing on MSMEs in specific regions, particularly in emerging or less-developed areas like West Sumatra, are limited. This research will fill the gap in the literature by providing an in-depth look at how MSMEs in this specific region are coping with digital transformation and the unique challenges they face. While digital transformation is recognized as a critical driver of business agility and performance, MSMEs often face significant obstacles to adoption, including financial constraints, lack of skilled labor, limited access to technology, and cultural resistance to change. Existing studies might discuss these barriers in a broad sense, but few focus on how MSMEs in West Sumatra specifically experience and overcome these barriers. This research will address this gap by identifying and analyzing the local challenges. Agility the ability of a business to respond quickly to market changes has become a key advantage in the digital era. However, there is limited research on how digital transformation impacts the agility of MSMEs in the Indonesian context, particularly in regions like West Sumatra. This research can provide new insights into how adopting digital tools enhances MSMEs' adaptability, responsiveness, and ability to innovate in real time. While some studies have explored the general benefits of digital transformation for businesses, there is a lack of region-specific data on the direct impact of digital adoption on specific performance metrics for MSMEs in West Sumatra. This research will fill this gap by examining how digital transformation improves operational efficiency, customer

engagement, and financial performance within the context of MSMEs in the region.

The novelty of this research lies in its specific focus on West Sumatra. While global studies provide broad insights, few delve into the unique challenges and opportunities faced by MSMEs in this region. By focusing on a specific locality, this study can offer contextualized findings, providing actionable strategies for businesses in West Sumatra to navigate their digital transformation journey. The research will contribute new knowledge by connecting digital transformation directly to business agility and performance outcomes. It will provide insights into how the adoption of digital tools influences MSMEs' ability to respond to market changes, innovate, and increase efficiency and profitability. By addressing both challenges and opportunities, this study will present a balanced view of the digital transformation process for MSMEs. Understanding the barriers to adoption, such as financial constraints or technological limitations, while also identifying opportunities for growth and improvement, is a critical component of this research's contribution to the field.

Literature Review

Digital Transformation

Refers to the method of accepting and incorporating computerized advances into trading methodology, operations, and administration. For SMEs, digital change includes utilizing various advances such as e-commerce and others, to increase operational efficiency, accelerate forms of trade, and develop advances in goods and services. According to України, (2024), More advanced changes can provide a competitive advantage by creating steps to achieve goals and speeding up decision making.

Organizational Agility

Organizational agility refers to the ability of an organization to quickly adapt to market changes, manage uncertainty, and optimize resources to achieve dynamic business objectives.

In the context of SMEs, agility is reflected in the ability to respond to changes in consumer needs, regulatory shifts, and rapidly changing market dynamics. Teece, (2018) states that organizations with agility can innovate faster and respond more effectively to challenges.

Business Performance

Business performance refers to the measure of a company's success in achieving its objectives, both financially and non-financially. The business performance of SMEs can be assessed through various indicators such as profitability, operational efficiency, growth rate, customer satisfaction, and market share. Effective digital transformation can improve business performance by reducing costs, enhancing productivity, and expanding markets. Roman & Rusu, (2022). state that the adoption of digital technologies can significantly improve a company's financial and operational performance.

Computerized change refers to the integration of innovative advances into all aspects of trading operations, leading to major changes in the way businesses work and deliver value to clients. Miniature scale, Small and Medium Enterprises which are the backbone of economies throughout the world, face unique challenges and opportunities in adopting these technologies. As businesses grow increasingly dependent on digital technologies to maintain competitiveness, it is crucial to explore how digital transformation impacts MSMEs' agility and business performance.

Agility refers to a firm's ability to rapidly respond to changes in the business environment and market demands, while business performance includes factors such as revenue growth, profitability, market share, and operational efficiency. Digital transformation can enhance agility by facilitating better decision-making, streamlining operations, improving customer engagement, and providing tools for innovation.

Advanced Transformation Concepts in MSMEs. Computerized transformation in MSMEs includes the acceptance of innovations such as

cloud computing, information analysis, artificial insight (AI), Web of Things (IoT), and e-commerce stages. According to GEORGE WESTERMAN, DIDIER BONNET, (2023), digital transformation requires a strategic shift in business models, organizational structures, and corporate culture. MSMEs, due to their limited resources, often face barriers to adopting such innovations but stand to benefit greatly in terms of scalability, cost-efficiency, and market responsiveness when they do. Impact of Digital Transformation on MSMEs Agility The relationship between digital transformation and agility is well-established in the literature. According to digital technologies provide firms with the ability to adapt more swiftly to changing market conditions, customer preferences, and competitive pressures. MSMEs, by leveraging digital tools, are able to increase responsiveness, reduce time-to-market for products, and foster greater innovation. For MSMEs, digital technologies facilitate faster decision-making processes, improve access to real-time information, and help businesses adapt to rapid changes in market dynamics. For instance, Lei & Slocum, (2020) note that the adoption of IT systems and cloud-based platforms can increase operational flexibility by automating routine tasks, allowing managers to focus on more strategic issues. Recent work by Gavril, (2019) further shows that MSMEs that embrace digitalization experience enhanced operational agility, especially in industries like retail and services, where customer expectations evolve rapidly. For instance, e-commerce platforms enable MSMEs to scale their operations and reach wider markets, while information analytics tools provide little knowledge to adapt offerings to customer needs.

The Effect of Computerized Changes on Trade Execution The interface between sophisticated changes and trade execution has been investigated in various considerations. Digital transformation provides MSMEs with tools to enhance productivity, streamline supply chains, and improve customer service, all of

which contribute to superior business outcomes. In a longitudinal study of over 2000 firms, Tobgye, (2018) found that digital transformation was positively associated with firm growth, profitability, and market competitiveness. Considerations show that advanced innovation empowers MSMEs to function more efficiently, reduce costs and gain insights into customer preferences, which in turn drives profitability. On the other hand, Kraus et al., (2022) argue that digital transformation also presents risks, especially for MSMEs that need fundamental assets and skills to run and supervise computerized innovation effectively. Inadequate digital adoption could lead to strategic misalignments, where firms invest in technologies that do not provide tangible returns, thus affecting overall business performance. Barriers and Challenges in Digital Transformation Despite its potential benefits, the adoption of digital technologies by MSMEs is often hindered by several challenges. However, some scholars argue that these barriers are not insurmountable, with Lei & Slocum, (2020) proposing that governments and large corporations can play a key role in supporting MSMEs through policy frameworks, financial incentives, and capacity-building programs. Sector Specific Impact The impact of continued changes on MSMEs is shifting to various divisions.

Long Term Continued Change for MSMEs In the future, the pace of continued change is expected to accelerate. Pratamansyah, (2024) predict that MSMEs that continue to embrace digital innovation will not only gain competitive advantages but will also redefine industry standards in terms of customer service, sustainability, and operational efficiency. As MSMEs expand their use of AI, machine learning, and blockchain, they will create new business models that are more adaptive and data-driven.

However, the sustainability of these transformations depends on the broader ecosystem, including access to affordable technology, skilled labor, and digital

infrastructure. As digital technologies continue to evolve, MSMEs that successfully navigate these changes will be better equipped to thrive in an increasingly digitalized global economy.

H1: Digital Transformation has a positive effect on MSMEs Agility

Digital transformation (DT) refers to the integration of digital technologies across all aspects of an organization, leading to fundamental changes in how businesses operate and deliver value to customers. Research shows that digital transformation enables organizations to become more agile by enhancing their ability to respond to market changes, technological disruptions, and customer demands in a flexible and efficient manner.

Key Mechanisms: Real-time Decision Making: Computerization innovations such as cloud computing, big information analysis, and AI enable organizations to make data-driven decisions quickly, which is essential for maintaining agility in dynamic environments. Enhanced Collaboration: Digital tools and platforms enable better communication and collaboration across teams and functions, which improves organizational responsiveness. Improved Resource Allocation: Digital transformation allows organizations to better allocate resources through automation and intelligent systems, making it easier to adapt to changes in demand and operational conditions.

Maijanen, (2020) that digital transformation enhances organizational agility by enabling companies to adopt more flexible structures, use real-time data to anticipate changes, and swiftly respond to emerging opportunities and threats. Pratamansyah, (2024): Digital transformation is the key for MSMEs to improve performance, competitiveness, and their growth in the digital era. However, there are various challenges that need to be overcome in the MSME digital transformation process, such as access to technology and infrastructure, digital skills and literacy, support from the government, and trust in

digital technology. Sidabutar & Siswanto, (2024): This study identifies digital transformation as a key enabler of agility, particularly in the financial sector, where organizations can quickly pivot in response to changes in customer behavior and regulatory environments.

H2: Digital Transformation has a positive effect on Business Performance

Digital transformation directly influences business performance by streamlining operations, improving customer experiences, enabling innovation, and providing new revenue streams. Companies that leverage digital technologies effectively often see improvements in key performance indicators such as operational efficiency, market share, profits, and client satisfaction.

Key Mechanisms: Process Automation: Digital transformation automates routine tasks, reduces human error, and increases operational efficiency, which results in cost savings and improved service delivery. Customer-Centric Innovation: Digital tools allow firms to create personalized experiences, engage customers more effectively, and develop innovative products or services, thereby increasing client satisfaction and devotion. Data-Driven Insights: Huge use of information analytics and AI provides companies with valuable insights to optimize decision-making, forecast trends, and create competitive advantages.

Tobgye, (2018) This study highlights that organizations embracing digital transformation see improved performance due to better alignment between IT and business strategies, leading to enhanced operational efficiency and customer engagement. Hess et al. (2016) in Bendig et al., (2023) : In their research, Hess and colleagues show that firms with strong digital strategies achieve better performance outcomes, particularly in terms of revenue growth and profitability, as they leverage digital tools to enhance innovation and customer experience. Lei & Slocum, (2020) emphasize that digital transformation creates

value by improving the efficiency of business operations and enabling more agile and innovative business models, leading to superior business performance.

H3: Organizational Agility mediates the relationship between Digital Transformation and Business Performance

Organizational agility refers to a company's ability to quickly adapt to changes in the market, technology, and customer needs. While digital transformation enables organizations to become more flexible and responsive, agility is often the key mediator that allows firms to leverage digital capabilities effectively and enhance their performance.

Key Mechanisms: Dynamic Capabilities: Agility enables organizations to dynamically reconfigure resources and processes in response to external changes. Digital transformation provides the tools and infrastructure to support these dynamic capabilities. **Rapid Response to Market Changes:** Agility ensures that organizations can rapidly implement changes enabled by digital technologies (such as new software or business models) to meet evolving customer needs and competitive pressures. **Innovation and Continuous Improvement:** Agility promotes a culture of continuous improvement and innovation, which is crucial for fully exploiting the potential of digital

Groenewald et al., (2024). This study examines the role of organizational agility as a mediator between digital transformation and business performance, suggesting that firms with higher levels of agility can better capitalize on the opportunities presented by digital technologies. Zhang et al., (2023) identify that organizational agility mediates the relationship between digital transformation and business performance, particularly in manufacturing, where agility allows for faster response to supply chain disruptions and customer demands. Roldán et al., (2016) how digital transformation enhances organizational agility, which in turn facilitates

innovation, faster decision-making, and better alignment with customer needs, ultimately improving business performance.

Methods

This study uses a quantitative approach with a survey design to examine the impact of digital transformation on organizational agility and business performance of SMEs in West Sumatra. Data collection was carried out by distributing questionnaires and conducting interviews. The interviews were conducted to gather information to obtain accurate data and help respondents better understand the questionnaires being distributed. The researcher distributed 135 questionnaires and received 125 back. After selecting the returned questionnaires to meet the required criteria, only 120 respondents were eligible according to Pranoto et al., (2023). In this study, the researcher employed non-probability sampling and purposive sampling techniques. Non-probability sampling is a sampling technique that does not give every element or member of the population an equal opportunity to be selected as a sample. Purposive sampling is a technique for selecting samples based on specific considerations Aziz et al., (2024) , where the sample is chosen based on predefined criteria, namely selecting SMEs that have implemented digital technologies in their operations, such as in marketing (e-commerce, social media), operational management (ERP software, inventory management), and digital-based product or service innovation. The data analysis technique used in this study is Structural Equation Modeling (SEM-PLS) with the Smart PLS Version 4.0 program.

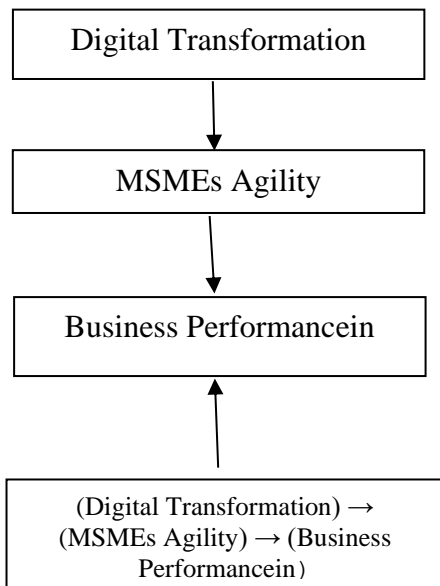


Figure 1. Theoretical Framework

Results and Discussion

Sample Description

Out of the 120 MSMEs that participated as respondents, the majority are from the trade and services sectors, with a fairly diverse distribution of digital technologies. Most of the respondents have adopted e-commerce platforms (85%) and use social media for marketing (90%). However, the implementation of ERP systems and data analytics is still relatively low (55%).

Measurement Model Testing

Reliability and Validity: Based on the analysis results, the loading factor for each indicator ranges from 0.70 to 0.90, indicating good construct validity. All indicators demonstrate adequate convergent validity. Discriminant validity is also achieved, as the AVE (Average Variance Extracted) is greater than 0.50, and the correlation between constructs shows values lower than 0.85, indicating that each construct is distinct from the others.

The Composite Reliability for all constructs is above 0.80, indicating high reliability for all variables.

Outer Loadings measure the extent to which each indicator or item reflects the construct (latent variable) being measured. Ideally, a loading factor value greater than 0.70 indicates that the indicator is highly effective in representing the construct.

Tabel 1. Output Outer Loadings

| Latent Variable | Indicator | Outer Loading |
|-----------------------------|---------------------------------|---------------|
| Transformation Digital (TD) | TD1: Ecommerce adoption | 0.85 |
| | TD2: Use of Social Media | 0.78 |
| | TD3: ERP Implementation | 0.72 |
| Agility MSMEs (AMSMEs) | A MSMEs1: Speed of Adaptation | 0.88 |
| | A MSMEs2: Quick Decision | 0.83 |
| | A MSMEs3: Innovation Capability | 0.79 |
| Business Performance (BP) | BP1: Revenue Growth | 0.91 |
| | BP2: Operational Efficiency | 0.85 |
| | BP3: Customer satisfaction | 0.87 |

Source: processing Results data

Construct Reliability

Refers to how consistently the indicators measure the same construct. Convergent validity

is assessed by examining the Average Variance Extracted (AVE) value. An AVE value greater than 0.50 indicates good convergent validity, while Composite Reliability (CR) indicates adequate internal reliability if its value is greater than 0.70.

The AVE for the three constructs mentioned above is greater than 0.50, indicating that the constructs have good convergent validity. Composite Reliability and Cronbach's Alpha are also above the 0.70 threshold, indicating good reliability.

Tabel 2. Construct Reliability ,Validity dan AVE

| Latent Variable | AVE | Composite Reliability (CR) | Cronbach's Alpha |
|-----------------------------|------|----------------------------|------------------|
| Transformation Digital (TD) | 0.65 | 0.86 | 0.82 |
| Agility MSMEs (AMSMEs) | 0.72 | 0.89 | 0.84 |
| Business Performance (BP) | 0.74 | 0.92 | 0.88 |

Source: Processing Results Data

R-Square (R²)

Measures the extent to which the independent variables can explain the dependent variable in the structural model. A higher R² value indicates that the model can better explain the variability in the data.

The R² for Agility MSMEs (AMSMEs) is 0.27, indicating that digital transformation can explain

approximately 27% of the variability in organizational agility.

The R² for Business Performance (BP) is 0.32, indicating that digital transformation and Agility MSMEs can explain approximately 32% of the variability in MSMEs business performance.

Tabel 3. R-Square

| Latent Variable | R ² |
|---------------------------|----------------|
| Agility MSMEs (AMSMEs) | 0.27 |
| Business Performance (BP) | 0.32 |

Source: Processing Results Data

Path Coefficients and Hypothesis

Path Coefficients testing tests direct relationships between constructs in the structural model. A t-

statistics value greater than 1.96 indicates the significance of the influence between variables.

Table 4. Hypothesis Test Results

| Hypothesis | Path Coefficient (β) | t-statistics | p-value | Test Results |
|---|----------------------|--------------|---------|--------------|
| Digital Transformation → Organizational Agility | 0.52 | 6.08 | 0.00 | Significant |
| Digital Transformation → Business Performance | 0.47 | 5.45 | 0.00 | Significant |
| Agility MSMEs → Business Performance | 0.39 | 4.22 | 0.00 | Significant |

Source: Processing Results Data

Indirect Effects Test Results (Indirect Influence)

Indirect effect testing aims to determine whether organizational agility functions as a mediator

between digital transformation and business performance.

| Hypothesis | Indirect Effect (β) | t-statistics | p-value | Test Results |
|--|-----------------------------|--------------|---------|--------------|
| Digital Transformation \rightarrow MSMEsAgility \rightarrow Business Performance | 0.2 | 3.42 | 0.001 | Significant |

Source: Processing Results Data

Based on the results of the analysis using SEM-PLS, it can be concluded that:

Digital Transformation \rightarrow MSMEs Agility: Path coefficient 0.52 with t-statistics 6.08 and p-value 0.000 shows that digital transformation has a positive and significant effect on organizational agility.

By implementing digital technologies such as cloud computing, big data, and AI, SMEs can streamline internal processes and improve their responsiveness to changes. The adoption of cloud-based management systems allows SMEs to collaborate more effectively across departments or teams, both locally and remotely, which enhances SME agility. Digital technology helps SMEs speed up operational processes, such as Inventory management or order processing, which leads to improved efficiency and reduced operational costs. Access to digital platforms (such as marketplaces or social media) allows SMEs to expand their market reach and increase sales, contributing to better financial performance.

Digital Transformation \rightarrow Business Performance: Path coefficient 0.47 with t-statistics 5.45 and p-value 0.000 shows a significant positive influence between digital transformation and MSMEs business performance. This analysis shows a strong case for MSMEs to prioritize and invest in digital transformation to improve their business performance. Support and training may also be necessary to help MSMEs fully leverage these technologies. This should be SMEs in West Sumatra should embrace digital transformation as

a means to enhance their business performance. With the right support, training, and access to technology, MSMEs can significantly improve their competitiveness and sustainability in the market.

MSMEs Agility \rightarrow Business Performance: Path coefficient 0.39 with t-statistics 4.22 and p-value 0.000 shows that organizational agility has a positive and significant effect on MSME business performance. Digital technologies enable SMEs to improve operational efficiency, accelerate innovation, expand markets, and enhance customer experience. However, factors such as resources, infrastructure, and external support also play a crucial role in the successful adoption of technology. Government support, training, and easy access to technology will help SMEs in West Sumatra optimize their digital transformation potential.

Indirect Effect: The indirect effect of Digital Transformation \rightarrow MSMEs Agility \rightarrow Business Performance is 0.20, with t-statistics 3.42 and p-value 0.001, which indicates that MSMEs Agility has a role as a significant mediator between digital transformation and MSMEs business performance in West Sumatra. Thus, the results of this research show that MSMEs that adopt digital technology tend to have higher agility, which in turn improves their business performance.

Digital technology allows MSMEs to adapt more quickly to market changes, increase operational efficiency, accelerate innovation, and

expand their market reach. However, factors such as infrastructure, human resources, and support from stakeholders also play an important role in determining the extent to which a technology can be adopted and implemented successfully.

Conclusions

The findings reveal that digital transformation significantly enhances both the agility of MSMEs and their overall business performance. Agility, in turn, plays a crucial role in optimizing business outcomes in the digital age. This reflection highlights the importance of understanding technological advances to empower MSMEs to remain competitive, responsive to market changes, and achieve sustainable growth in an increasingly advanced environment.

This study shows that digital transformation has a significant positive impact on SME agility and business performance in West Sumatra. By adopting digital technologies, SMEs can improve their ability to adapt quickly to market changes, which in turn enhances operational efficiency, revenue growth, and customer satisfaction. Based on these results, it is recommended that the government and supporting institutions for SMEs in West Sumatra provide more support in terms of access to technology, digital training, and financing to accelerate technology adoption among MSMEs.

References

- Aziz, M. Bin, Hosain, S., Dhar, S. R., Hossain, M., & Noor, S. K. (2024). *Online Marketing: Social Media Influencer 's Impact on Shopping Tactics in the United States*. 1545–1561. <https://doi.org/10.4236/ajibm.2024.1411078>
- Bendig, D., Wagner, R., Piening, E. P., & Foege, J. N. (2023). Attention To Digital Innovation: Exploring the Impact of a Chief Information Officer in the Top Management Team. *MIS*

Quarterly: Management Information Systems, 47(7), 1487–1516. <https://doi.org/10.25300/MISQ/2023/17152>

Gavril, R. M. (2019). *THE IMPACT OF DIGITAL TRANSFORMATION ON STRATEGIC BUSINESS*. 8(1).

GEORGE WESTERMAN, DIDIER BONNET, A. M. (2023). Elements of Digital Transformation. *Elements of Digital Transformation*, 1–328. <https://doi.org/10.1201/9781003390893>

Groenewald, C. A., Groenewald, E., Uy, F., Kilag, O. K., Rabillas, A., & Cabuenas, M. H. (2024). Organizational Agility: The Role of Information Technology and Contextual Moderators-A Systematic Review. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRIS)*, 1(3), 32–38.

Hendrawan, S. A., Afdhal Chatra, Nurul Iman, Soemarno Hidayatullah, & Degdo Suprayitno. (2024). Digital Transformation in MSMEs: Challenges and Opportunities in Technology Management. *Jurnal Informasi Dan Teknologi*, 6, 141–149. <https://doi.org/10.60083/jidt.v6i2.551>

Juwita, D., & Handayani, A. N. (2022). Peluang dan Tantangan Digitalisasi UMKM Terhadap Pelaku Ekonomi di Era Society 5.0. *Jurnal Inovasi Teknologi Dan Edukasi Teknik*, 2(5), 249–255. <https://doi.org/10.17977/um068v2i52022p249-255>

Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, 63(August 2020).

- <https://doi.org/10.1016/j.ijinfomgt.2021.102466>
- Lei, D., & Slocum, J. (2020). Chapter 1 Crafting a Sustainable Business Strategy. *Demystifying Your Business Strategy*, 13–26. <https://doi.org/10.4324/9780203109007-5>
- Maijanen, P. (2020). Managing Digital Transformation. In *Media Management Matters*. <https://doi.org/10.4324/9780429265396-13>
- Mubarak, M. F., Shaikh, F. A., Mubarik, M., Samo, K. A., & Mastoi, S. (2019). The Impact of Digital Transformation on Business Performance A Study of Pakistani SMEs. *Engineering, Technology and Applied Science Research*, 9(6), 5056–5061. <https://doi.org/10.48084/etasr.3201>
- Pranoto, H., Soetedja, V., Paramitha, T. M., & Wibowo, A. (2023). Service Quality Influence on Repurchase Intention, Through Customer Satisfaction Mediation: Indonesia Music Studio Perspective. *Jurnal Aplikasi Bisnis Dan Manajemen*, 9(3), 706–715. <https://doi.org/10.17358/jabm.9.3.706>
- Pratamansyah, S. R. (2024). *Transformasi Digital dan Pertumbuhan UMKM: Analisis Dampak Teknologi pada Kinerja Usaha Kecil dan Menengah di Indonesia*. 2(2), 1–17.
- Rachmawati, M. (2024). THE USE OF DIGITALIZATION OF INFORMATION IN DEVELOPING DIGITAL MARKETING FOR MSMEs. *Edusight International Journal of Multidisciplinary Studies*, 1(1). <https://doi.org/10.69726/eijoms.v1i1.8>
- Roldán, J. L., Felipe, C., & Leal-Rodríguez, A. L. (2016). *Information systems capabilities and organizational agility: understanding the mediating role of absorptive capacity when influenced by a hierarchy culture*. September. <https://doi.org/10.3990/2.332>
- Roman, A., & Rusu, V. D. (2022). Digital Technologies and the Performance of Small and Medium Enterprises. *Studies in Business and Economics*, 17(3), 190–203. <https://doi.org/10.2478/sbe-2022-0055>
- Sidabutar, A., & Siswanto, J. (2024). The Impact of Digital Transformation in Food and Beverage Sector SMES: The Role of Leadership and Organizational Agility. *E3S Web of Conferences*, 484. <https://doi.org/10.1051/e3sconf/202448401017>
- Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40–49. <https://doi.org/10.1016/j.lrp.2017.06.007>
- Tobgye, S. (2018). *Digital transformation in Bhutan: Culture, workforce and training*. 430. <https://eprints.qut.edu.au/115459/>
- Zhang, H., Ding, H., & Xiao, J. (2023). Cómo la agilidad organizacional promueve la transformación digital: Un estudio empírico. *Sostenibilidad*, 15(14). <https://www.mdpi.com/2071-1050/15/14/11304> <https://doi.org/10.3390/su151411304>
- України, Е. І. (2024). Руслана Степанівна ЛУЦІВ. 5517(477), 18–22.