

THE IMPACT OF DIGITAL TRANSFORMATION ON ORGANIZATIONAL AGILITY: A COMPARATIVE STUDY OF EMERGING MARKET**DAMPAK TRANSFORMASI DIGITAL TERHADAP KETANGKASAN ORGANISASI: STUDI PERBANDINGAN PASAR BERKEMBANG****Farikhul Muafiq**

ITSNU Pekalongan, Central Java, Indonesia

*farikhul@gmail.com

Corresponding Author*ABSTRACT**

Digital transformation (TD) is the key to increasing organizational agility (OA) in a competitive era, but emerging markets face unique challenges due to limited resources. This research aims to identify key barriers to achieving OA through TD in resource-limited emerging markets, and offers literature-based recommendations for overcoming them. By using the method Systematic Literature Review (SLR) based on the PRISMA framework, this research analyzes 28 articles relevant data from Scopus databases, Web of Science, and others. Results show that key barriers include limited digital infrastructure, lack of managerial skills, and cultural resistance to change, while proposed solutions involve cross-sector collaboration, increased digital capacity, and government policies that support innovation ecosystems. The implications of this research provide strategic insights for policymakers, organizational leaders, and practitioners to drive effective TD in emerging markets.

Keywords: digital transformation, organizational agility, obstacles, emerging markets, resource limitations

ABSTRAK

Transformasi digital (TD) menjadi kunci untuk meningkatkan agility organisasi (OA) di era kompetitif, namun pasar berkembang menghadapi tantangan unik karena keterbatasan sumber daya. Penelitian ini bertujuan untuk mengidentifikasi hambatan utama dalam mencapai OA melalui TD di pasar berkembang yang terbatas sumber dayanya, serta menawarkan rekomendasi berbasis literatur untuk mengatasinya. Dengan menggunakan metode Systematic Literature Review (SLR) berbasis kerangka kerja PRISMA, penelitian ini menganalisis 28 artikel yang relevan dari database Scopus, Web of Science, dan lainnya. Hasil menunjukkan bahwa hambatan utama mencakup keterbatasan infrastruktur digital, kurangnya keterampilan manajerial, dan resistensi budaya terhadap perubahan, sementara solusi yang diusulkan melibatkan kolaborasi lintas sektor, peningkatan kapasitas digital, dan kebijakan pemerintah yang mendukung ekosistem inovasi. Implikasi penelitian ini memberikan wawasan strategis bagi pembuat kebijakan, pemimpin organisasi, dan praktisi untuk mendorong TD yang efektif di pasar berkembang.

Kata Kunci: transformasi digital, agility organisasi, hambatan, pasar berkembang, keterbatasan sumber daya

1. INTRODUCTION

Organizational agility (OA) has become a critical capability for organizations to maintain competitiveness in an era characterized by rapid change and uncertainty. OA enables organizations to quickly adapt to market disruptions, technological advances, and changing customer needs. In this context, digital transformation (DT) serves as a key driver of OA, providing organizations with the tools, processes and technologies necessary to increase their adaptability in a dynamic business environment. The relationship between OA and DT is very close, where organizations that successfully implement digital initiatives can better respond to external challenges and opportunities (Mao et al., 2020; Gong & Ribi re, 2023).

However, the success of DT in encouraging OA is strongly influenced by contextual factors surrounding the transformation process. In developed countries, a mature digital

ecosystem and the availability of abundant resources significantly support the success of DT initiatives. Organizations in these regions often benefit from sophisticated technological infrastructure as well as a skilled workforce, which collectively increases their capacity to become more agile (Ly, 2023; Zhang et al., 2023). In contrast, organizations in emerging markets face unique challenges, such as inadequate digital infrastructure, limited funding, and limited technology skills among employees. These barriers can hinder the effective implementation of DT, thereby limiting the potential to achieve OA (Troise et al., 2022; Bueechl et al., 2021).

The challenges facing organizations in emerging markets are exacerbated by high levels of economic, social and political uncertainty. These resource limitations may prevent organizations from fully exploiting the benefits offered by DT. However, this market also holds great opportunities due to its dynamic nature and increasing technology adoption. Understanding the barriers to achieving OA through DT in this context is critical to providing strategic guidance for organizations and policy makers (Esamah, 2023; Ibrahimi, 2023). By identifying and addressing these challenges, organizations can better navigate the complexities of digital transformation and increase their agility in responding to market changes (Hutter et al., 2023; Duvivier, 2023). In conclusion, although OA is an important element for organizations to survive in a changing environment, the successful integration of DT as an OA driver depends on the specific context in which this transformation takes place. Organizations in developed markets may find it easier to implement DT thanks to favorable conditions, while organizations in emerging markets must face various obstacles that can slow their progress. Therefore, a deep understanding of these dynamics is essential for organizations seeking to increase their agility through digital transformation (Giudice et al., 2021; Gonçalves et al., 2020; Teece et al., 2016).

Although the literature on DT and OA has grown rapidly, most research focuses on the context of developed countries that have access to abundant resources. Research related to emerging markets is often limited to individual case studies or specific sectoral contexts without addressing the systemic barriers that organizations face in resource-constrained conditions. Additionally, little research offers practical guidance and strategic recommendations for overcoming these barriers. A more comprehensive approach is needed to understand these unique barriers in emerging markets, including the interaction between technology, culture and the local business environment. This research aims to fill this gap with a special focus on barriers to organizational agility through DT in the context of resource-limited emerging markets.

This research aims to identify the main obstacles faced by organizations in efforts to achieve organizational agility (OA) through digital transformation (DT) in developing markets with limited resources. These obstacles include various challenges that are unique to emerging markets, such as technology gaps, financial limitations, lack of managerial capabilities, and social and cultural resistance. Apart from that, this research also aims to provide literature-based recommendations for overcoming these obstacles, so that it can become a practical guide for organizations, policy makers and academics. Thus, this research not only contributes to the development of theory and literature related to DT and OA, but also provides practical insights relevant to emerging market contexts.

As the main focus of this research, the question asked is: What are the key barriers to achieving organizational agility through digital transformation in resource-constrained emerging markets, and how can these be overcome? These questions are designed to uncover systemic and structural barriers that prevent organizations from achieving agility through digital transformation, while exploring mitigation strategies that are relevant and applicable in a variety of emerging market contexts. By answering this question, it is hoped that this research will be able to make a substantial contribution to both the development of literature

and practice related to digital transformation (DT) and organizational agility (OA) in emerging markets.

2. METHODS

2.1. Study Design

This research uses the method Systematic Literature Review (SLR) to provide a comprehensive picture of the main obstacles to achieving *organizational agility (OA)* through *digital transformation (DT)* in emerging markets with limited resources. This approach follows a framework PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) to ensure transparency, accuracy, and replication in the process of identification, selection, and analysis of relevant literature. SLR was chosen because it allows researchers to synthesize existing information in a systematic and organized manner, providing in-depth insight into research themes that have not been widely explored. The results are expected to not only contribute to the academic literature but also produce practical recommendations for organizations in emerging markets.

2.2. Data Sources

This research utilizes several major academic databases to ensure broad, high-quality literature coverage:

1. Scopus: A database indexing high-quality scientific journals across various disciplines.
2. Web of Science: Focus on peer-reviewed articles with multidisciplinary coverage.
3. IEEE Xplore: The leading source for articles related to digital technology and innovation.
4. ProQuest: Provides access to business, economics, and technology literature, including dissertations and industry reports.

2.3. Keywords and Boolean Search:

- "digital transformation" AND "organizational agility" AND "barriers" AND "emerging markets" AND "resource-constrained".
- A variety of synonyms and Boolean combinations are used to increase search sensitivity.

The search was carried out on articles published between 2010 to 2024 to ensure relevance to recent developments in the DT and OA literature.

2.4. Inclusion and Exclusion Criteria

To ensure the quality and relevance of the reviewed literature, the following criteria were applied:

- Inclusion Criteria:
 - Peer-reviewed article.
 - Issued between 2010-2024.
 - Context-focused studies *emerging markets*.
 - Article discussing DT barriers related to OA.
 - Article in English.
- Exclusion Criteria:
 - Studies that focus on developed countries or advanced economies.
 - Articles that are not relevant to OA or DT.
 - Articles that only discuss the sectoral context without generalizing the findings to emerging markets.
 - Gray literature such as internal company reports or blogs that have not gone through a peer-review process.

2.5. Data Extraction

Data was taken from articles that met the selection criteria to identify and group key information related to the research theme. Extracted data components include:

- Emerging Market Context: The country, sector, or industry in focus.
- Digital Transformation Barriers: Key challenges faced, such as financial, technological, or organizational culture.
- Impact on Organizational Agility: How these obstacles affect an organization's ability to adapt dynamically.
- Proposed Solution: Approach or strategy for overcoming obstacles.

These data are systematically coded using tools such as Excel or reference management software (e.g., Zotero or Mendeley) to simplify analysis.

2.6. Analysis Framework

Approach thematic analysis disguised to identify main patterns and themes from the literature reviewed. The analysis process includes the following steps:

1. Familiarization: Reading selected articles in depth to understand the context and key findings.
2. Coding: Identify initial codes based on barriers, impacts, and solutions reported in the literature.
3. Theme Development: Group codes into main themes, such as technological, financial, managerial, or socio-cultural barriers.
4. Review and Refinement: Validate themes with additional literature to ensure accuracy and relevance.

The results of the analysis are used to answer research questions and provide comprehensive literature-based recommendations.

3. RESULTS

3.1. Descriptive Analysis

The results of this SLR process include descriptive analysis to provide an overview of the characteristics of the literature reviewed:

1. Article Number Statistics:
 - Total articles that met the selection criteria: 28 articles.
 - Year of publication: The majority of articles were published between 2018–2024, reflecting a trend of increasing interest in the topic *digital transformation* (DT) and *organizational agility* (OA).
2. Geographical Distribution of Studies:
 - Articles that focus on emerging markets mostly come from Asia (40%), Africa (30%), Latin America (20%), and the Middle East (10%).
 - Studies in Asia are dominant in India, Indonesia, and the Philippines; while Africa focuses on Nigeria and South Africa.
3. Industry Sectors Studied:
 - Manufacturing (35%) and service (30%) industries dominate, followed by the education (20%) and health (15%) sectors.
 - The diversity of sectors shows that DT barriers are multidimensional, although their intensity varies by industry.

3.2. Identified Barriers

From the literature analysis, four main categories of barriers to achieving OA through DT in resource-constrained emerging markets were identified:

1. Technological Barriers:

- Inadequate Digital Infrastructure: Limited internet network, low penetration of information technology, and lack of technical support are the main obstacles.
- Lack of Access to Advanced Technology: High costs and low purchasing power of organizations lead to a technology gap between emerging markets and developed countries.
- 2. Financial Barriers:
 - Funding Constraints: Organizations in emerging markets often face capital constraints, both for initial investment and maintenance of digital technology.
 - Dependence on Donors: Many organizations, especially in the social sector, depend on foreign aid, which is not always sustainable.
- 3. Managerial Barriers:
 - Digital Skills Shortage: Many managers lack the technical competency or strategic understanding of DT's potential to enhance OA.
 - Lack of Transformational Leadership: Leaders tend to be less proactive in driving organizational change through DT.
- 4. Social and Cultural Barriers:
 - Resistance to Change: Staff often show reluctance to adopt new technology, especially if training is inadequate.
 - Challenges in Adopting a Digital Work Culture: Hierarchical organizational structures and lack of cross-functional collaboration hinder the adoption of a dynamic, technology-based work culture.

3.3. Proposed Solutions

Based on literature findings, several proposed solutions to overcome these obstacles are as follows:

1. Investment in Digital Infrastructure:
 - Public-Private Collaboration: The government and private sector can work together to build better digital infrastructure, such as expanding high-speed internet networks in remote areas.
 - Affordable Technology Approach: Prioritize open-source or cloud-based technologies that are less expensive and accessible to small organizations in emerging markets.
2. Increased Managerial Capacity:
 - Technology-Based Training: Training programs that target managerial digital skills, such as data analytics, DT strategy, and innovation leadership.
 - Strategic Partnerships: Collaboration with higher education institutions and global technology providers to provide certification programs or managerial training.
3. Government Policy Making:
 - Incentives for Technology Adoption: Providing tax incentives or subsidies to organizations that adopt digital technology.
 - Digital Innovation Ecosystem: Creating a regulatory environment that supports local technology startups and innovation, as well as providing access to venture capital.

These results suggest that a multidimensional approach involving technology, management, and public policy is needed to overcome DT barriers in emerging markets. The proposed solutions are not only relevant for organizations but also important for policy makers in supporting the digital ecosystem as a whole.

4. DISCUSSIONS

4.1. Interpretation of Results

4.1.1. Comparison of Findings with Literature in Developed Countries

Digital transformation (DT) presents a unique set of challenges in emerging markets compared to developed countries. In developed countries, DT barriers tend to be technical or strategic in nature, focused on aligning business strategies with rapidly evolving technologies and dynamic market needs (Teichert, 2019; Kraus et al., 2021). In contrast, in emerging markets, the complexity of DT barriers increases due to resource constraints, such as inadequate infrastructure and limited funding, which significantly hinder the adoption of digital technologies (Mohammadi, 2023; Conde, 2021; Onyeabor, 2023). For example, many organizations in developing countries face poor internet connectivity, unstable electricity supplies, and low levels of digital literacy—challenges rarely encountered in developed countries (Onyeabor, 2023; Hicks, 2021).

Cultural factors also play an important role in the digital transformation landscape. Emerging markets often exhibit higher levels of cultural resistance to technology adoption than developed countries, where work cultures that support digitalization are more established (Conde, 2021; Syed et al., 2023). This resistance can stem from a lack of understanding of digital tools and a workforce that is not trained enough to use technology effectively (Mohammadi, 2023; Onyeabor, 2023). In addition, organizational culture in many developing countries often does not support the agility and innovation required for DT success, resulting in the transformation process moving more slowly (Merten et al., 2022; Schiuma et al., 2021).

The implications of this obstacle are significant. Organizations in emerging markets often face a higher risk of failure in their digital transformation initiatives. Studies show that between 70% and 95% of DT projects in the region are unsuccessful due to the complexity of the challenges faced (Mohammadi, 2023; Conde, 2021). This is in stark contrast to developed countries, where the focus is more on refining existing digital strategies than on overcoming fundamental obstacles. Therefore, to face the unique challenges in emerging markets, tailored strategies are needed that take into account the existing technological and cultural context (Olubusola, 2024; Ndulu et al., 2023).

Overall, while digital transformation is an important driver of growth and efficiency worldwide, the obstacles faced in emerging markets are much more complex. These barriers include a combination of resource limitations and cultural resistance that require a different approach than that used in developed countries.

4.1.2. The Specific Effect of Limited Resources in Emerging Markets on Organizational Agility (OA):

Resource limitations in emerging markets significantly affect organizational agility (OA) in various dimensions, including technological, financial, and socio-cultural barriers. Each of these obstacles presents unique challenges that organizations must overcome to remain flexible and responsive in the face of an ever-changing environment.

a. Technological Barriers

Weak infrastructure in emerging markets often hinders the adoption of new technologies, which is a key element to increasing organizational agility. Research shows that a robust IT infrastructure is critical to strengthening an organization's ability to respond to market changes (Lee et al., 2015). Without adequate technology support, organizations struggle to implement agile practices that depend on real-time data and communications. For example, Chan et al. highlighted that small and medium-sized enterprises (SMEs) face greater pressure to adapt to market conditions due to their limited resources, which is exacerbated by inadequate technological capabilities (Chan et al., 2018). Additionally, IT's lack of ambidexterity—the ability to balance the exploitation of existing capabilities with the exploration of new opportunities—can further limit agility (Lee et al., 2015).

b. Financial Barriers

Access to capital is an important factor influencing organizational agility, especially in emerging markets where financial resources are often limited. Organizations tend to prioritize short-term financial stability over long-term strategic investments, which can hinder innovation and adaptability (Tang et al., 2022). For example, Tang et al. emphasized that organizations with a high level of agility can leverage resource bricolage to drive breakthrough innovation, but this depends on the availability of adequate financial resources (Tang et al., 2022). In addition, the financial constraints faced by SMEs often force them to be reactive rather than proactive to market changes, thereby limiting their ability to take advantage of new opportunities (Akkaya & Iqbal, 2021).

c. Socio-Cultural Barriers

Resistance to change within an organization can significantly hinder the integration of new technologies and processes, ultimately reducing the effectiveness of transformation efforts to increase agility. Jager et al. highlighted that organizational trust and employee attitudes towards change play an important role in determining the success of agility initiatives (Jager et al., 2021). When employees show resistance to change, adoption of agile practices can slow, making it difficult for organizations to respond quickly to market dynamics. Additionally, cultural aspects of organizational agility, as noted by Gonçalves et al., can influence how effectively organizations innovate and adapt in dynamic environments (Gonçalves et al., 2020). A culture that encourages adaptability and openness to change is critical to overcoming resistance and increasing agility.

Resource constraints in emerging markets pose major challenges to organizational agility. Technological barriers limit adoption of tools necessary for responsiveness, financial barriers hinder investment in long-term agility improvement initiatives, and socio-cultural barriers create resistance to change that slows transformation efforts. Overcoming these obstacles is the key for organizations to be able to thrive in dynamic market conditions.

4.2. Theoretical Implications

1. Contributions to the DT and OA Literature in Emerging Market Contexts:
 - This research fills a gap in the literature by offering a unique perspective on the challenges of DT in emerging markets, especially in the context of resource limitations.
 - This study identifies a direct relationship between financial and socio-cultural barriers to OA, which has rarely been discussed in previous literature.
 - Barrier-based approach (barrier-driven approach) enriches the DT theoretical framework by highlighting the importance of local dynamics in technology adoption.

4.3. Practical Implications

1. Recommendations for Policy Makers:
 - Governments in emerging markets need to encourage investment in digital infrastructure, for example through tax incentives or partnerships with the private sector.
 - Policies that support workforce training and digital literacy must be prioritized to build a work culture that is more adaptive to technology.
2. Recommendations for Organizational Leaders:
 - Organizations must adopt strategies *low-cost digital transformation*, such as using cloud-based technology or open-source platforms to reduce costs.
 - Prioritize training and development of digital skills for employees at all levels, especially managerial, to increase adaptation to technological changes.
3. Recommendations for Industry Players:

- Inter-industry collaboration can be an effective solution for sharing resources and knowledge to overcome financial and technical limitations.
- Community-based innovation initiatives, such as local tech hubs, can help create an ecosystem that supports digital transformation.

4.4. Limitations

1. Geographical Limitations of the Articles Reviewed:
 - The reviewed literature may not fully reflect the situation in all emerging markets, especially in regions with limited data such as Central America or Central Asia.
2. Possible Bias in the Literature:
 - The majority of studies in global databases tend to focus on countries with better data access, which can create bias geographic or sectoral.
 - The emphasis on academic literature ignores sources from industry or international organization reports that might offer more practical insights.

4.5. Future Research Directions

1. Primary Data Based Empirical Study:
 - Field studies using primary data from organizations in emerging markets can test the effectiveness of the solutions proposed in this research.
 - Quantitative approaches such as cross-industry surveys can provide a more comprehensive picture of DT barriers and solutions.
2. Sectoral Analysis:
 - In-depth research into specific sectors, such as education, health, or manufacturing, can help understand the barriers unique to each industry.
 - Sectoral studies can also identify more focused and relevant solutions to overcome DT barriers.
3. Long Term Research:
 - Longitudinal research is needed to evaluate the long-term impact of DT on OA in emerging markets, including how certain solutions can be adapted over time.

5. CONCLUSIONS

5.1. Summary of Findings

This research identifies the main barriers to achieving organizational agility (OA) through digital transformation (DT) in resource-constrained emerging markets. These barriers include:

1. Technological Barriers: Inadequate digital infrastructure and limited access to advanced technology.
2. Financial Barriers: Limited funding and the organization's inability to make strategic investments.
3. Managerial Barriers: Lack of digital skills at leadership level and inability to manage complex transformations.
4. Social and Cultural Barriers: Resistance towards change, as well as work culture gaps that hinder technology adoption.

As a solution, this study recommends:

- Digital Infrastructure Improvement: Adopt a collaborative approach between government, the private sector and international organizations.

- Digital Skills Development: Organizing training and capacity building programs for managers and employees.
- Inclusive Policy: The government must create policies that support innovation and digital ecosystems in emerging markets.
- Collaboration Between Industries: Leverage partnerships to share resources and reduce financial burden.

Reaching organizational agility through digital transformation in emerging markets requires a collective and cross-sector approach. Therefore:

1. Cross-Sector Collaboration:
Governments, the private sector, and educational institutions must work together to build infrastructure, create inclusive policies, and improve workforce skills.
2. Investment in Research and Development:
Organizations should support further empirical research to understand local challenges and develop solutions that can be implemented effectively.
3. Long Term Commitment:
Digital transformation is not a one-shot process; it requires long-term vision, continuous adaptation, and strategic investment to ensure sustainability and success.

In conclusion, by addressing these obstacles strategically, emerging markets can harness the potential digital transformation to increase organizational flexibility and competitiveness in an increasingly dynamic global era.

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