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Integrating Digital Transformation and Ambidextrous Innovation for Organizational Resilience Under Environmental Dynamism

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Abstract

The world is evolving into a new economic era cultivated by global geopolitical tension and market volatility just after the world's recovery from the pandemic of Covid-19. These conditions highlight the urgent need to enhance organizational resilience. However, research on how firms can sustain resilience through digital transformation and ambidextrous innovation remains limited. The objective of this study is to develop a conceptual framework integrating digital transformation and ambidextrous innovation as enablers of organizational resilience, with environmental dynamism considered as a moderator mechanism. This study applies a systematic literature review using the TCCM (theory, context, characteristics, and methodology) approach to analyze relevant articles from reputable journals. The expected finding suggests that digital capabilities, combined with balanced innovation (exploration and exploitation), strengthen adaptive capacity and strategic agility, which are core to resilience. This proposed framework and proposition will contribute to the knowledge and practice on the topic. For the organization, this article could provide a holistic view on the elements of organizational resilience. Further, empirical exploration research of the framework using quantitative methods across various dimensions that differentiate organization profiles with specific sectors is needed

Keywords: Organizational Resilience, Digital Transformation, Environmental Dynamism, Ambidextrous Innovation

Introduction

Today, human beings are witnessing situations that have evolved into a new world order. Volatile and uncertain global conditions drive organizations to be resilient while focusing on sustainable business growth. Relevant to the research findings between 1994 and 2014, the resilience concept is related to the organization's response to external threats (Linnenluecke, 2017). A resilient organization can rapidly learn from experiences and adapt to conditions through innovation or the establishment of new strategies (Wakibi et al., 2024).

The evolving digitalization is driven by various emerging technologies propelling the new era of Industry 5.0 (Ghobakhloo et al., 2024). The integration of the digital (cyber) and physical worlds is a fundamental driver of contemporary society, enabling the generation of high-quality data to create innovative solutions and address societal and industrial challenges (Rohayati & Abdillah, 2024). Organizations that prioritize digital transformation are better positioned to anticipate market changes, leverage business model innovation, and adapt their value propositions accordingly (Rachinger et al., 2019). Digital transformation has become a strategic imperative, with evidence showing its significant role in enhancing organizational resilience (Zhang, 2021).

In line with the current dynamic global condition, this article performs a systematic literature review on organizational resilience as the primary topic. While the concept of organizational resilience is becoming more popular, most research on this phenomenon has divided it into two important factors of organizational management, namely organizational capital and individual capital, respectively. Therefore, this study will focus on the organization's holistic perspective with the aim to construct a conceptual framework that integrates digital transformation and ambidextrous innovation as synergistic enablers of organizational resilience. It further explores how environmental dynamism moderates these relationships. By bridging conceptual insights across technology management, innovation strategy, and resilience theory, this article seeks to fill a critical gap in understanding how organizations in turbulent environments can remain adaptive and robust.

Literature Review

Organizational Resilience

The notion of resilience originates from psychological and ecological research, and within the field of management, it has primarily been applied in the context of crisis and disaster management studies (Kantur, 2015). An organization's resilience is defined as its extensive response mechanism to perceive, adapt to, and recover from a crisis (Zhang et al., 2021). An increasing number of scholars have explored how organizational resilience can be achieved under different crises (Linnenluecke, 2017; Williams et al., 2017; Chen, 2021; Parker & Ameen, 2018; Awad & Rojas, 2024) and different types of organizational scale (Kantur, 2015; Dahlgaard & Anninos, 2022; Parker & Ameen, 2018; Awad & Rojas, 2024). Resources and capabilities of the organization are among the vital aspects for resilience (Gayed & Ebrashi, 2023), such as buildings, suppliers, technologies, equipment, people, decision-makers, and inter-organization communication. Elaboration on aspects mentioned was assessed over a decade ago and categorized into three main aspects: situation awareness, management of keystone vulnerabilities, and adaptive capacity. Resilience must be central to long-term strategy; rather than approaching resilience as an independent issue, it should be embedded as a fundamental element within long-term strategic frameworks (World Economic Forum & McKinsey, 2025).

Derived from published articles related to organizational resilience, the dynamic organizational capability view expands the resource-based view (RBV) of the organization to include the ability to learn, sense, integrate, and coordinate their resources in order to adapt and survive the environmental disruption (Zhang et al., 2021; Gayed & Ebrashi, 2023; Parker & Ameen, 2018; Gu et al., 2023; Awad & Martín-Rojas, 2024; Browder et al., 2024; Rahi, 2019; Duchek, 2020). Organizations must be agile and provide fast responses and flexibility to short-

term changes and demand (Aboah et al., 2019; Moe & Mikalsen, 2020); (World Economic Forum & McKinsey, 2025; Kantur, 2015); (Do, 2022). Adaptive capacity encompasses various organizational elements, potentially including leadership, mobilization of resources, employee engagement, access to information, decentralized decision-making, and the extent to which the organization has analytical capabilities (He, 2023; Aboah et al., 2019; Rahi, 2019; Liu et al., 2023).

Digital Transformation

The digital transformation of organizations entails profound changes to business processes, emphasizing the digitization of all elements that are capable of being converted into digital form (Hagberg et al., 2016). Another definition states that digital transformation refers to the restructuring of business processes, organizational culture, and internal systems in response to market demands, driven by the adoption of digital technologies (Nasiri et al., 2020; He, 2023). To successfully implement digital transformation, organizations must progress through stages of digital maturity by addressing both digital intensity and transformation management intensity (Westerman et al., 2012). As the business landscape becomes more digital, IT capability has regained significance as a key enabler for establishing seamless digital integration across activities and stakeholders within the value chain.

Ambidextrous Innovation

The concept of innovation ambidexterity, explored through the framework of knowledge taxonomy and organizational learning, is categorized into two distinct types, namely exploitative innovation and exploratory innovation. Repetition and incremental improvement in established practices result in both exploitative and exploratory increased efficiency and proficiency in those activities (March, 1991). Preliminary research (March, 1991) stated that exploitation focuses on leveraging current resources and capabilities to enhance and expand existing products. Its goal is to optimize the value of these resources by lowering costs, boosting efficiency, and implementing gradual improvements. Exploitative innovation, which contributes to short-term performance, involves the deepening of existing knowledge through the refinement of core competencies and enhancement of current capabilities (Zhou et al., 2023). It focuses on efficiently utilizing available resources to retain customers and foster loyalty. In contrast, exploratory innovation involves a broader search for new opportunities, expanding the organization's knowledge base into uncharted domains (March, 1991). An expansion in a firm's knowledge base width (KBW) reflects a broader and more diverse set of knowledge resources, suggesting greater integration of heterogeneous knowledge. This, in turn, enhances the potential for recombining various elements of knowledge, thereby amplifying the overall impact of the firm's innovation efforts (Li et al., 2024). This type of innovation supports long-term performance by enabling the acquisition of new knowledge, enhancing organizational adaptability, and facilitating entry into new market segments with novel product offerings (Li et al., 2024).

Environmental Dynamic

Given the current global situation, the future remains highly uncertain. A dynamic environment can be seen as a double-edged sword; it can have a positive or negative impact on the organization's growth performance. In the business reality, some organizations are able to generate profit by exploiting new business opportunities, while others are not able to survive under the pressure to change or adapt. In-depth research on the environment

encompasses the level of analysis, sources of variation, selection criteria, and time frame, all of which relate to the external factors influencing the organization's decision-making (Aldrich & Pfeffer, 1976). Evidence derived from research that environmental dynamism does not positively moderate organizational capabilities and innovation in SMEs in the Asia region (Yu et al., 2022). The impact of environmental uncertainty and complexity on organizations varies depending on the type of business, market size, and scale of business operation (Duncan, 1972). To the best of our knowledge, this article embedded the role of environmental dynamics in the organization's resilience to address an oversight in the existing literature.

Research Methodology

Data

The methodology applied for this article is based on a literature review as used in research (Krimi et al., 2024). A systematic literature review methodology guided by the theories, contexts, characteristics, and methodology (TCCM) to analyze organizational resilience and the antecedents amid future uncertainty (Nadeem & Singh, 2025). The review process involved the following stages: (1) identification based on the databases from selected reputable journals such as Scopus, Emerald Insight, ProQuest, ScienceDirect, and JSTOR related to the KEYWORD "organizational AND resilience", "digital AND transformation", "innovation", and "environmental AND dynamism"; (2) screening and selection focused on the published and most relevant articles between 2010 and 2025 in the English language in journals or proceeding; (3) data extraction and synthesis In this study, a three-step approach (Olaleye et al., 2023) consists of (1) the process of article selection and data gathering; (2) data extraction and loading and conversion; and (3) data synthesis, which was analyzed and categorized into antecedents, outcomes, moderators, and mediators of resilience. Relevance was determined by frequency of thematic occurrences and theoretical depth. This structured process ensures transparency and enhances the trustworthiness of the findings described in Table 1.

Table 1
Organization Resilience, Antecedents, and References

Outcome	Antecedent	References
rganizational Resilience	Strategy, business model, dynamic capabilities, strategic planning, competitive advantage	(Linnenluecke, 2017), (Wakibi et al., 2024), (Fergusson et al., 2020), (Mehta et al., 2024), (Souza et al., 2017), (Nüchter et al., 2021), (Pradana & Ekowati, 2024), (Afzal et al., 2024), (Dahlgaard & Anninos, 2022), (Shepherd & Williams, 2023), (Andersson, 2019), (Burnard et al., 2018), (Parker & Ameen, 2018), (Liu et al., 2023)
	Human Resources, Leadership, and Organizational Behaviour	(Hillmann, 2021), (Hollands et al., 2023), (Williams et al., 2017), (Barin Cruz et al., 2016), (Pradhan et al., 2016), (Wagner & Disparte, 2016), (Schuttner et al., 2021)
	Innovation and Technology	(Wakibi et al., 2024), (Afzal et al., 2024),

	(Gu et al., 2023), (Browder et al., 2024), (Abera et al., 2024), (J. Zhang et al., 2021), (Rohayati & Abdillah, 2024), (Nkomo & Kalisz, 2023), (Hirsch et al., 2024), (Ye et al., 2024), (Westerman et al., 2012), (Hagberg et al., 2016), (Awad & Martín-Rojas, 2024)
Government and Policy	(Mai et al., 2022), (Elliott & Macpherson, 2010), (Lampel et al., 2014), (Al-Matari et al., 2022)

Analysis based on articles from reputable journals confirms that technology as part of digital transformation is among the most influential variables contributing to organizational resilience. Therefore, this article proposed digital transformation as an independent variable for organizational resilience. To increase its overall capacity for innovation, an organization must perform well when implementing various types of innovations (Abera et al., 2024). The concept of innovation ambidexterity is grounded in knowledge classification and organizational learning theory, distinguishing between exploitative and exploratory forms of technological innovation (March, 1991). Within this perspective, this article will elaborate on ambidextrous innovation as a moderator to organizational resilience.

Results and Discussions

Digital transformation (DT) constitutes a strategic approach through which organizations respond to evolving customer expectations while enhancing long-term sustainability and maintaining competitive advantage. It involves continuous innovation to adapt to environmental changes, foster customer retention, address emerging needs, and optimize business portfolios, all aligned with a comprehensive, future-oriented strategic framework (Awad & Rojas, 2024). The success of technological innovation extends beyond mere technological capabilities; it also requires a diverse range of innovation competencies, including those related to manufacturing, marketing, organizational structure, strategic planning, learning, and resource allocation (Abera et al., 2024). To achieve optimal organizational performance, managers must adapt their strategic approaches flexibly in response to both internal and external environmental dynamics, offering a theoretical basis for examining the effects of varying degrees of environmental turbulence (Subramaniam, 2020; Li et al., 2024).

Among selected articles, the organizational capability view represents a suitable framework to facilitate organizational resilience by sensing, learning, integrating, and coordinating (B. Zhang et al., 2024; Gayed & El Ebrashi, 2023; Parker & Ameen, 2018; Gu et al., 2023; Gao et al., 2019; Awad & Martín-Rojas, 2024; Browder et al., 2024; Rahi, 2019;

Duchek, 2020) based on literature review and empirical studies. Resilience means that organizations possess abilities such as agility (Do, 2022), which arises from the need to facilitate software teams to communicate with other non-development organizational units, including marketing, sales, and operations, under uncertainty for rapid organizational action. The first antecedent related to organizational resilience is how organizations are able to transform and optimize their business processes through digital transformation, as listed in Table 1 above. Digitization involves fundamental changes in business processes, including digitalizing everything that can be digitalized (Hagberg et al., 2016; Nasiri et al., 2020). Transformation management involves offering an organization a clear transformational vision, good governance, and a supportive culture. This built-in leadership assists the organization to attract and cultivate innovative, talented employees while fostering their growth, especially during times of crisis. A high level of transformation management intensity (TMI) also demands that organizations align employee behavior with the overarching vision (Westerman et al., 2012; He, 2023; Abera et al., 2024; Mikalsen et al., 2018). In terms of human resources, employees should be equipped with digital skills and competencies (Gu et al., 2023; Pelletier & Cloutier, 2019). Consequently, strong IT capability allows organizations to leverage new digital technologies and adapt effectively to evolving market needs (Nwankpa & Roumani, 2016). Evidence from the article argued that in conjunction with partnership, the firm should acquire and develop its own digital talent to support long-term growth and leverage digitalization value (Gao et al., 2019). The second antecedent of organizational resilience is innovation. Exploitative innovation, which contributes to short-term performance, involves the deepening of existing knowledge through the refinement of core competencies and enhancement of current capabilities (Zhou et al., 2023). In contrast, exploratory innovation involves a broader search for new opportunities, expanding the organization's knowledge base into uncharted domains (March, 1991). An expansion in a firm's knowledge base width (KBW) reflects a broader and more diverse set of knowledge resources, suggesting greater integration of heterogeneous knowledge. This, in turn, enhances the potential for recombining various elements of knowledge, thereby amplifying the overall impact of the firm's innovation efforts (Li et al., 2024). This type of innovation supports long-term performance by enabling the acquisition of new knowledge, enhancing organizational adaptability, and facilitating entry into new market segments with novel product offerings (Li et al., 2024).

In summary, the review reveals strong patterns highlighting digital capabilities, innovation ambidexterity, and adaptive strategic leadership as recurrent antecedents to resilience. While many studies support the direct effect of digital transformation on organizational adaptability, fewer empirical works examine the joint effect of ambidextrous innovation and digital strategy under volatile environments. This gap emphasizes the need for integrated models and cross-sectoral studies. Furthermore, environmental dynamism is often discussed but rarely tested as a moderating mechanism. The proposed framework thus addresses a conceptual void by linking these constructs within a unified model.

Framework Model

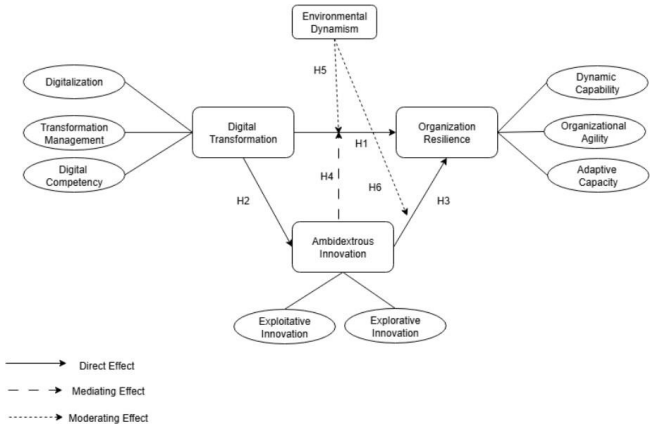

Figure 1. The Proposed Conceptual Framework
Source: Own authorConclusions

This study conceptualizes organizational resilience as a dynamic capability influenced by digital transformation and innovation ambidexterity. By synthesizing findings from over a decade of research, the proposed model provides an integrative perspective that acknowledges the role of environmental uncertainty. For practitioners, the framework offers strategic guidance on aligning digital and innovation efforts to enhance agility and adaptability. For scholars, it highlights several underexplored relationships, particularly the moderating role of environmental dynamism. Future research should empirically validate the framework using multi-sectoral samples, considering organizational size and digital maturity as potential control variables. Longitudinal design could also better capture the evolving nature of resilience in response to digital disruption. The conceptualization of organizational resilience under the current dynamic environment is crucial.

Limitations

Scholars and practitioners suggest considering the differences among the organizations based on their business models and the varying levels of challenges they face, which may lead to different outcomes. Additionally, limitations in the database and the period of data collection in this article should be considered. To the best of our knowledge, there may be other factors that contribute to organizational resilience, but these are beyond the scope of this article and warrant further research.

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