



The Influence of Digital Leadership on the Resilience of Public Organizations in Indonesia in Facing Challenges of the VUCA Era

Wawan Kurniawan Aziz^{1*}, Eko Daryanto²

Universitas Indonesia

Corresponding Author: Wawan Kurniawan Aziz wawan.kurniawan32@ui.ac.id

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ABSTRACT

The rapid development of technology and the dynamic changes in the VUCA (Volatility, Uncertainty, Complexity, Ambiguity) era present significant challenges for public organizations in Indonesia. This study employs a literature review approach to explore the influence of digital leadership on the organizational resilience of public institutions. By analyzing existing theories and empirical studies, the research identifies key characteristics of digital leadership that foster adaptability, innovation, and agility in public organizations. The findings emphasize the importance of digital competencies, strategic vision, and change management in enhancing organizational resilience. This study provides valuable insights for policymakers and public administrators, offering a theoretical foundation for developing effective strategies to address the challenges of the VUCA era

INTRODUCTION

The VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) era has created significant new challenges for public organizations to adapt amidst the ever-changing global dynamics. The COVID-19 pandemic has further accelerated the need for digital transformation, particularly in the public sector, to ensure service continuity and operational efficiency (Nouri-Goushki & Hojaji, 2023). However, this transformation, though urgent, faces structural and non-structural barriers. In Indonesia, the implementation of e-government, aimed at enhancing transparency, efficiency, and public participation, continues to face numerous challenges. Indonesia's below-average standing in Southeast Asia's e-government readiness index indicates a gap between the needs and capabilities of public organizations to adopt digital technology (Nugroho & Purbokusumo, 2020).

These challenges are exacerbated by budget constraints, inadequate technological infrastructure, and suboptimal human resource (HR) quality (Nugroho & Purbokusumo, 2020). Furthermore, low digital literacy among public organization leaders slows their adaptation to technological changes (Tagscherer & Carbon, 2023). These barriers not only hinder the effectiveness of public services but also limit the capacity of organizations to respond to crises and strategically leverage opportunities for digital transformation.

In this highly uncertain context, organizational resilience becomes a critical element to ensure operational continuity and adaptation to crises. Duchek (2020) defines organizational resilience as the ability to survive, recover, and adapt during difficult circumstances. This resilience encompasses not only physical aspects such as infrastructure and technology but also strategic elements such as leadership and risk management. Liu et al. (2024) highlight that leaders with digital skills can enhance organizational resilience through data-driven decision-making and more responsive risk management.

This context underscores the central role of digital leadership in bridging the gap between the need for digital transformation and the challenges faced by public organizations. Digital leadership requires not only an understanding of technology but also the ability to integrate it holistically into organizational strategies. Hanita (2023) argues that robust infrastructure and skilled HR support are prerequisites for successful digital transformation. However, without visionary leadership capable of managing change, digital transformation efforts are at risk of failure.

This article examines how digital leadership can act as a catalyst in building the resilience of public organizations in Indonesia. By providing insights into the strategic role of digital leadership and the challenges faced in the context of e-government, this article aims to contribute to the development of practical solutions to enhance the competitiveness and sustainability of public organizations in Indonesia during the VUCA era.

LITERATURE REVIEW

Digital Leadership Theory

This theory emphasizes the importance of a leader's ability to leverage digital technology in organizational management. Digital leadership is defined as a leader's ability to create a clear and meaningful vision for the digitalization process and to implement that vision in organizational management (Lyu, 2024). This involves the ability to accurately analyze environmental changes, swiftly adjust the status quo, and make necessary strategic changes. Digital leadership also entails integrating digital technology into organizational management, transforming leadership attitudes and behaviors, and enhancing organizational performance (Lyu, 2024).

Digital leadership is regarded as a key facilitator of digital transformation, playing a broader role beyond mere technological implementation (Abbu et al., 2022). This type of leadership not only includes technical skills for understanding and applying technology but also involves strategic management to address complex changes. Breuer (2013) highlights that digital leadership requires leaders who can combine strategic vision with a deep understanding of technology to drive innovation, efficiency, and organizational competitiveness.

In the context of public organizations, the role of digital leadership becomes increasingly critical as this sector often faces resource limitations and resistance to change. Digital leaders must have the ability to identify opportunities for using technology to improve services while overcoming barriers such as infrastructure constraints and low digital literacy among staff. Additionally, digital leadership must ensure effective collaboration across departments and stakeholders to ensure that digital transformation runs smoothly and delivers significant impact.

Abbu et al. (2022) also assert that the success of digital transformation heavily depends on a leader's ability to foster an organizational culture that is adaptive to change. This includes developing human resource competencies, implementing data-driven strategies, and carefully managing risks. In other words, digital leadership functions not only as a technological driver but also as a change agent, steering organizations toward resilience and sustainability amidst the challenges of the VUCA era.

Organizational Resilience Theory

Organizational resilience is defined as an organization's ability to confront, recover from, and adapt to unexpected situations and crises. Beyond mere survival, this resilience encompasses the capacity to thrive and achieve success amidst uncertainty and change, making it a critical element for survival and sustainability in the modern era (Duchek, 2020). The VUCA era further underscores the importance of organizational resilience, as rapid and unpredictable global dynamics have become a constant challenge.

Duchek (2020) identifies three key dimensions of organizational resilience – anticipation, coping, and adaptation – which are interconnected and form the foundation for achieving long-term success. The anticipation dimension involves the organization's ability to predict potential threats or opportunities in the future. In the VUCA era, where volatility and uncertainty are high, this

capability is crucial, as organizations must detect early signs of change or potential crises before their impact becomes significant.

The coping dimension focuses on how organizations manage crises when they occur. Agility in decision-making, effective collaboration, and leveraging technology to support rapid responses are examples of coping strategies relevant in the VUCA era. When complexity and ambiguity obscure clear courses of action, organizations that can act decisively and data-driven are better positioned to mitigate the negative effects of crises.

Lastly, the adaptation dimension reflects an organization's ability to learn from past experiences and adjust to new environments post-crisis. The VUCA era demands organizations continuously evaluate and revise their strategies to remain relevant amid rapid changes. Successful adaptation involves not only tactical changes but also cultural and structural shifts that foster innovation and organizational agility.

In the context of the VUCA era, organizational resilience is not merely a defensive strategy but a strategic tool to create added value. Organizations with high resilience can view crises as opportunities to grow, innovate, and strengthen their position in the markets or sectors they serve. This reinforces the notion that organizational resilience, as described by Ducheck (2020), is not just about survival but about building the capacity to succeed amid ever-evolving uncertainty.

METHODOLOGY

This study uses a literature review approach, where the researcher explores and interprets various sources from books, articles, and reports in a natural and descriptive way. As explained by M. Nazir in his book "Research Methods", a literature review involves gathering information by reviewing relevant materials related to the topic. This method helps the researcher build a strong foundation, connect the dots between existing ideas, and gain a deeper understanding of the subject (Nazir, 1988).

RESULTS AND DISCUSSION

1. Challenges in the VUCA Era

a. Environmental Turbulence

Digitalization has become a strategic response to the demands of unexpected and complex changes, particularly in the VUCA era characterized by volatility, uncertainty, complexity, and ambiguity (Danielsen, 2021). This digital transformation goes beyond merely adopting technology; it also necessitates changes in how organizations operate, make decisions, and deliver services. For public organizations, digitalization represents an opportunity to enhance the efficiency, transparency, and accessibility of public services while addressing global challenges such as pandemics, climate change, and socio-economic dynamics.

However, implementing digitalization in the public sector often encounters various obstacles. One of the biggest challenges is the lack of robust digital infrastructure, including unequal access to information and communication technology (Liu et al., 2024). This disparity creates gaps in the

ability of public organizations to effectively carry out digitalization processes, especially in regions with limited resources.

Resistance to cultural change also poses a significant barrier to digital transformation. The shift toward digitalization often requires changes in entrenched mindsets, organizational structures, and work practices (Moser-Plautz & Schmidhuber, 2023). This is particularly challenging when leaders and staff lack adequate digital literacy or feel threatened by changes that could potentially replace their roles.

These challenges are compounded by insufficient training and capacity development for human resources in the public sector (Nugroho & Purbokusumo, 2020). Without adequate skill-building, even the best technology will fail to deliver its maximum impact. Therefore, digitalization in public organizations requires not only investment in technological infrastructure but also the cultivation of an organizational culture that supports innovation and continuous learning.

The success of digitalization in the public sector demands strong and visionary leadership. Digital leadership plays a crucial role as a driver of change by building a strategic vision, overcoming internal resistance, and creating an environment conducive to cross-sector collaboration. With the right leadership, public organizations can transform challenges into opportunities to improve services and strengthen organizational resilience amidst the dynamics of the VUCA era.

b. Competency Gaps

Leaders in the public sector often face significant challenges in implementing digital transformation due to a lack of adequate digital competence. Although digital transformation has become an urgent need for improving the efficiency and effectiveness of public services, many public sector leaders lack the technical skills and sufficient understanding to effectively drive this change (Breuer, 2013; Tagscherer & Carbon, 2023). This creates a gap between the demands of digitalization and the leadership's ability to promote the adoption of appropriate technology and strategies.

Digital competence here encompasses more than just the ability to use technology tools or digital platforms. It also involves a deeper understanding of how technology can transform organizational operations, the ability to make data-driven decisions, manage digital risks, and foster innovation within the context of public organizations (Breuer, 2013). In the public sector, where decisions often involve multiple stakeholders and have broad impacts, these skills are crucial. Leaders who lack sufficient digital competence tend to struggle to formulate policies adaptive to rapid technological changes and are more susceptible to resistance within the organization.

Leaders with limited understanding of technology often fail to identify the potential threats and opportunities offered by digital transformation. They may also struggle to manage the cultural changes within organizations that are necessary to support digitalization. These changes not only involve technological infrastructure but also shifts in mindset, work patterns, and organizational structures. In this regard, effective leadership requires skills to build a clear

digital vision, communicate the importance of digital transformation to staff, and manage a smooth transition from traditional systems to more technology-driven systems (Lyu, 2024).

For instance, Tagscherer & Carbon (2023) highlight that many public sector leaders lack skills in data analysis and data-driven decision-making, which are critical in today's digital era. Without these competencies, leaders will find it difficult to manage information effectively and steer their organizations through uncertainty and rapid changes.

Therefore, developing digital competencies for public sector leaders is essential. Training and education in digital technologies, data literacy, and digital transformation management should become an integral part of leadership development in the public sector. Only by preparing leaders who are competent in digital aspects can the public sector optimize the potential of technology and effectively address challenges in the VUCA era.

c. E-Government Reliability

The issues of security and reliability in e-government pose significant barriers to improving the quality of public services in Indonesia, particularly in the rapidly advancing digital era. In the implementation of e-government systems, where various public services are now provided online, data security and platform reliability are two critical factors that the government must address seriously. Nugroho & Purbokusumo (2020) state that although e-government offers significant potential for enhancing efficiency, transparency, and accessibility of public services, challenges related to data security and system stability often hinder its adoption and development.

Data security is a primary concern, given that e-government involves the collection, storage, and processing of citizens' personal data. Every time citizens access public services online, they provide highly sensitive data, such as personal information, financial status, and health records. Without robust security systems, this data is vulnerable to hacking or breaches, which could undermine public trust in the government and harm individuals. In this context, the government must ensure that e-government systems are equipped with up-to-date security protocols, such as data encryption, two-factor authentication, and effective firewalls, to protect citizens' personal information from cyber threats.

The reliability of e-government systems is another critical issue. Systems that frequently experience technical disruptions or downtime reduce the effectiveness of public services, which are intended to enhance efficiency and convenience for citizens. A platform that cannot reliably provide essential services, such as population administration or tax payment processing, creates inconvenience and frustration for users. Therefore, the government must ensure that the technological infrastructure supporting e-government is robust enough to handle high user volumes and that the systems are designed to withstand technical disruptions or cyberattacks.

Additionally, resource limitations in terms of technical expertise also hinder the government's efforts to improve the security and reliability of e-government (Nugroho & Purbokusumo, 2020). The lack of technical competence among civil servants and public sector leaders responsible for managing e-

government can slow the development and implementation of necessary security policies. As cyber threats increase, it is crucial for the government to enhance the technical skills of its workforce in managing and safeguarding e-government systems.

To address these challenges, collaboration between the public and private sectors is needed to build and manage secure and reliable e-government infrastructure. The government should also update policies related to personal data protection and cybersecurity, including regular monitoring and updates to the security tools used in e-government systems. Furthermore, raising public awareness about digital security, as well as training and upskilling human resources in the public sector, will be strategic steps in addressing various issues related to e-government security and reliability.

In conclusion, the challenges of e-government security and reliability, which remain major obstacles, require attention not only in strengthening infrastructure and policies but also in developing the capacities of the individuals managing these systems. Only by overcoming these challenges can e-government deliver its maximum potential in improving public service quality and meeting citizens' expectations in the digital era.

2. Digital Leadership Strategies

a. Building Strategic Digital Vision

Leaders in the public sector must understand that digitalization is not merely the adoption of new technology but a comprehensive transformation that impacts all aspects of an organization's operations. In the increasingly dominant VUCA context, leaders must create a clear vision for digitalization that goes beyond technological implementation, aligning organizational strategy with rapidly changing dynamics. Lyu (2024) emphasizes that amidst prevailing uncertainties, a clear vision serves as a guide for all organizational members, directing their actions toward a greater shared goal. This vision should reflect an understanding of how digital technologies can enhance public services, operational efficiency, and interdepartmental collaboration within the organization.

The strategies adopted by leaders must also consider the challenges arising from the uncertainty and volatility of the organizational environment. For instance, in navigating rapid changes, leaders must remain flexible in designing plans and strategies that enable the organization to adapt to both external and internal shifts. In this regard, digitalization is not just a short-term solution but a long-term strategy to ensure organizational sustainability and growth in a highly uncertain environment.

Team collaboration is also a key factor in the success of digital transformation. Organizational digitalization cannot succeed if driven by a single individual or a single division within the organization. Leaders must foster and encourage stronger collaboration between different teams, both within the organization and in interactions with relevant external parties such as the public or the private sector. Tagscherer & Carbon (2023) note that effective leadership in the digital era does not rely solely on unilateral decisions but on the ability to

create synergy among various stakeholders involved in the digitalization process.

Effective leaders in this context must integrate technical capabilities with broader managerial skills, such as change management and data-driven decision-making. Thus, leaders not only need to master the technical aspects of digital transformation but must also build collaborative, adaptive teams ready to manage the uncertainties associated with the process.

Leaders must also ensure that all organizational members understand the importance of the digitalization vision and strategy. This can be achieved by consistently and transparently communicating the benefits and objectives of digital transformation, as well as how each individual within the organization can contribute to achieving that vision. By fostering a shared understanding and sense of ownership of the vision, the organization will be better equipped to tackle the challenges ahead.

Overall, leaders in the VUCA era must possess the ability to steer organizations through dynamic changes by creating a clear vision, aligning strategies with shifting dynamics, and fostering effective team collaboration. This approach will enable organizations not only to survive uncertainty but also to thrive and achieve long-term goals through well-planned digitalization.

b. Developing Digital Infrastructure

Investment in technological infrastructure and intellectual capital is a critical element in supporting successful digital transformation, especially in the public sector, which is adapting to rapid and unpredictable changes. Liu et al. (2024) emphasize that achieving effective digital transformation requires organizations to focus on two key aspects: providing adequate technological infrastructure and developing deep intellectual capital within their human resources.

A solid technological infrastructure serves as the primary foundation for any digitalization initiative. Without a robust infrastructure, the implementation of digital technologies will be hindered and unable to function optimally. This infrastructure includes not only the necessary hardware and software but also network systems that enable efficient communication and collaboration within the organization and with external parties. This is particularly crucial in the context of e-government, where public services must be accessible transparently, efficiently, and securely to a broad audience.

While technological infrastructure provides the physical foundation for digital transformation, intellectual capital—comprising the knowledge, skills, and competencies of human resources—becomes a decisive factor in leveraging these technologies. Digital transformation is not solely about adopting new technologies but also about the organization's ability to innovate, manage change, and optimize the use of technology to achieve efficiency and effectiveness in public service delivery. Without a thorough understanding of technology and its management, organizations will struggle to implement complex digital systems.

Training and development for human resources, particularly key leaders and staff, are essential to ensure they possess skills relevant to the latest

technologies. These include data analytics, digital risk management, and cybersecurity skills, as well as adequate managerial skills to oversee the changes brought about by digitalization. As highlighted by Breuer (2013) and Tagscherer & Carbon (2023) leaders who are competent in digital technologies are better equipped to make swift and accurate decisions when addressing the challenges faced by public organizations in this digital era.

Intellectual capital is also closely tied to organizational innovation, where the development of knowledge and new ideas enables organizations to be more flexible in responding to challenges. Organizations with strong intellectual capital are better positioned to adapt to change, find creative solutions to existing problems, and seize emerging opportunities during the digital transformation process.

c. Utilizing Big Data

Public organizations can leverage big data to enhance efficiency, competitiveness, and drive economic growth (Pedota, 2023). With the growing volume and diversity of data, particularly in today's digital era, big data presents opportunities for public organizations to uncover deeper insights and make more accurate, evidence-based decisions. One of the primary benefits of big data is its ability to optimize processes and improve resource efficiency. Public organizations often face administrative and bureaucratic processes that require significant time and resources. By analyzing large volumes of data, organizations can identify inefficiencies in operations and develop solutions to streamline procedures. For example, through data analysis on public service demand, governments can design more efficient distribution systems, adjust service schedules, and allocate resources more effectively.

Amid increasingly intense global competition, especially in public sectors related to community services, public organizations must continuously adapt and innovate to remain relevant and competitive. Big data enables the analysis of market trends, public needs, and user preferences in real-time. This capability helps organizations develop products and services that better align with societal needs, providing a superior user experience.

The utilization of big data also enhances accountability and transparency within the public sector. Through clear data analysis, governments can provide more open information to the public about how policies or programs are implemented and their impact on society. This not only builds public trust but also fosters better management of public resources, supporting social and economic stability.

d. Organizational Culture Transformation

Leaders must promote openness to change and foster an inclusive digital work culture as a crucial step in addressing the challenges of digital transformation (Tagscherer & Carbon, 2023). This involves creating an environment that encourages experimentation, innovation, and continuous learning. Effective leaders should be able to manage resistance to change, ensure all members of the organization feel involved, and facilitate the transition to more efficient systems through digital technology.

Building an inclusive digital culture means ensuring that all employees, regardless of their background or skill level, have equal access to develop their digital skills. This entails addressing any digital divide that may exist and providing sufficient training and resources to enable every individual to contribute to the organization's digital transformation.

Leaders also need to embed the value of collaboration in the use of technology, adopting cross-functional approaches that allow different divisions within the organization to work together more efficiently. In this way, organizations can better navigate the challenges of the VUCA era, leveraging technology as a tool to enhance efficiency and competitiveness while ensuring long-term success in adapting to rapid and unpredictable changes.

CONCLUSION AND RECOMMENDATION

Digital leadership has a significant impact on the organizational resilience of public institutions in Indonesia in addressing the challenges of the VUCA era. By leveraging the dimensions of organizational resilience (anticipation, coping, and adaptation) and visionary digital leadership strategies, public organizations can enhance their flexibility, efficiency, and competitiveness.

Although challenges such as a lack of digital competencies and infrastructure still persist, strategic measures like strengthening digital infrastructure, utilizing big data, and transforming workplace culture can serve as effective solutions. The success of digital transformation in the public sector heavily relies on leaders' ability to embrace change, empower their teams, and build a sustainable digital vision.

FURTHER STUDY

His research still has limitations, so it is necessary to conduct further research related to the topic of The Influence of Digital Leadership on the Resilience of Public Organizations in Indonesia in Facing Challenges of the VUCA Era in order to improve this research and add insight for readers

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