



Digital Leadership: Challenges and Opportunities in the Age of Technology (A Literature Review)

Susan Febriantina¹, Axel Rohzisky², M Rivalen³

¹Universitas Negeri Jakarta, Indonesia

²Universitas Negeri Jakarta, Indonesia

³Universitas Negeri Jakarta, Indonesia

Email : susanfebriantina@unj.ac.id¹, axel_1712422031@mhs.unj.ac.id²
[,rivalen_1712422060@mhs.unj.ac.id](mailto:rivalen_1712422060@mhs.unj.ac.id)³

Address: Jl. Rawamangun Muka, RT.11/RW.14, Rawamangun, Pulo Gadung, East Jakarta City, Special Capital Region of Jakarta 13220

Korespondensi penulis: axel_1712422031@mhs.unj.ac.id

Abstract. *This research aims to analyze the concept of digital leadership, challenges, and opportunities faced by organizational leaders in the technological era. The method used is a literature study with a qualitative approach to explore the definition, characteristics, and strategies of digital leadership. The results showed that digital leadership requires adaptability to technology, data-based decision making, and innovation in managing virtual teams. The main challenges faced are resistance to change and gaps in access to technology, while the main opportunities are the utilization of technologies such as AI and big data.*

Keywords: *Digital leadership, technology, Decision making, Digital transformation.*

1. BACKGROUND

The different aspects of life, including organizational leadership, have undergone major changes as a result of the rapid advancement of information and communication technology. In the modern technological era, being a leader does not only need to possess conventional management skills to achieve organizational goals. They must also be able to strategically leverage technology to support the achievement of organizational goals. Digital leadership can help digital transformation, improve operational efficiency, and create sustainable innovation in organizations. As a result, the concept is becoming increasingly popular. Digital leadership can help digital transformation, improve operational efficiency, and create sustainable innovation in organizations. As a result, the concept is becoming increasingly popular.

According to Avolio et al. (2014), digital leadership is a leadership style in which digital technology is used effectively to influence, direct, and support teams and other individuals in achieving organizational goals. One example is the use of digital communication tools, big data management, and the application of artificial intelligence (AI) in the decision-making process. The ability to adapt, think strategically, be open to change, and manage a technology-driven work environment are all qualities required for digital leaders.

The ability to build an innovative and inclusive organizational culture that enables cross-functional collaboration using digital platforms is a critical component of digital leadership,

according to Northouse (2018). This ability is supported by a deep understanding of technology and the implementation of a digital strategy that aligns with the organization's vision.

In addition, according to research conducted by Kane et al. (2019), key issues in the implementation of digital leadership include the persisting digital divide, human resource readiness, and the continuation of organizational change. Therefore, a digital leader relies heavily on their ability to educate, encourage, and push their team to quickly adjust to change.

This research aims to learn more about the concept of digital leadership, its characteristics, and the problems that arise when implementing it. In addition, this research will examine how modern technology can help leadership in the digital age. Thus, it is hoped that this research will provide a better understanding of the importance of digital leadership and provide guidance for organizations.

2. THEORETICAL STUDY

Definition of Digital Leadership

Digital leadership is a leadership style that leverages technology to support decision-making, collaboration, and innovation in organizations (Tulungen et al., 2022). According to Sağbaşı & Erdoğan (2022), digital leaders not only act as managers, but also as change agents who utilize technology to create new value.

Key Characteristics

According to Zhu (2015), the main characteristics to focus on in this study include several important interrelated aspects. Zhu highlights that a deep understanding of context is essential for analyzing complex phenomena, as a holistic approach enables more informed decision-making. In addition, this research emphasizes the importance of integrating multiple theoretical perspectives to generate richer and more relevant insights, especially in dynamic and uncertain environments. Zhu also emphasized that the methodology used should be adaptive and flexible, so as to capture the variations and dynamics present in the subject under study. The adoption of a multidisciplinary approach is another key element emphasized, as it provides a broader framework to address complex research questions.

Challenges in Digital Leadership

According to Romandoni and Efendi (2024), the transformation of Islamic education leadership in the digital era faces various challenges and opportunities. These challenges include adaptation to technology, cultural changes in the educational environment, and the development of digital competencies for educators and students. In addition, there are concerns about the erosion of Islamic values in the learning process that is integrated with technology.

However, the digital era also offers opportunities to improve the efficiency and quality of education through innovations in learning and management. Therefore, Islamic education leaders need to be flexible and innovative in dealing with change, while maintaining Islamic values. Recommended strategies include strengthening digital capacity, innovation in learning, and collaboration with various stakeholders to support the sustainability of Islamic education in the modern era.

Opportunities in Digital Leadership

Opportunities in digital leadership include the ability to leverage technology to drive organizational growth, improve operational efficiency, and expand market reach. According to Huang et al. (2017), the integration of data and advanced analytics in the decision-making process allows leaders to better understand business trends and customer behavior, resulting in more targeted decisions. Hinds and Cramton (2015) also highlight that digital technologies enable leaders to forge stronger connections with geographically dispersed team members, supporting more effective collaboration. In addition, according to sources from BPSDM Sumut, digital leadership plays an important role in overseeing digital transformation by building an organizational culture that is adaptive to change. By adapting information technology strategically, leaders can create significant operational efficiencies, as suggested by recent research. These opportunities are key in bringing organizations to success in the era of dynamic technological transformation

Utilization of AI and Big Data

Mohammad Saifur Rahman (2019) in his article “A Systematic Review Towards Big Data Analytics in Social Media” discusses the use of Big Data and Artificial Intelligence (AI) in analyzing data from social media. Rahman emphasized that advances in internet technology and web 2.0 have enabled social media platforms to become a significant source of big data. By applying machine learning and social data analytics approaches, organizations can extract valuable insights from this data, supporting data-driven decision-making processes.

Global Collaboration

Global collaboration is a process of continuous interaction between individuals or groups from different countries working together to achieve a common goal. According to Jonathan (2004), collaboration is a process of interaction between several people that is continuous. Gray also added that collaboration is a process of thinking, interacting, and behaving carried out by several people or groups to achieve a common goal. In a global context, collaboration involves working across cultures and geographical boundaries to achieve a desired outcome

3. RESEARCH METHODS

This research utilizes a literature study, which is a qualitative approach, to gain a better understanding of the topic of digital leadership. Relevant secondary data sources, such as scientific journals, reference books, academic articles, and other reliable documents, were used in this study. This approach was chosen because this method is effective in providing deep insights into the topic.

Particularly relevant for the evolving topic of digital leadership, the desk study method is a systematic approach to reviewing existing literature with the aim of identifying patterns, gaps, and conceptual frameworks to support analysis (Snyder 2019).

The steps in this research include methods:

1. **Data Collection:** Relevant literature was collected through academic databases such as Scopus, Google Scholar, and Springer. Research published within the last five years, relevance of the topic, and validity of the source were conditions for literature inclusion.
2. **Data Screening and Organization:** Once the data was collected, a screening process was conducted to ensure that only relevant and high-quality literature was used. The data was then organized based on key topics such as the definition of digital leadership, issues faced, opportunities available, and future projections.
3. **Data Analysis:** As suggested by Braun and Clarke (2006), the analysis was conducted using thematic methods (theme analysis). This method makes it possible to find important patterns and themes in the reviewed literature. The definition of digital leadership, key traits of digital leaders, issues faced in the digital age, and strategies for applying technology in leadership were some of the issues found.
4. **Validation and Interpretation:** To ensure that the findings are consistent and reliable, the results of the analysis are compared with various current theories and models. To interpret the results, they were adapted to the context of the study and concentrated on theoretical contributions and practical relevance.

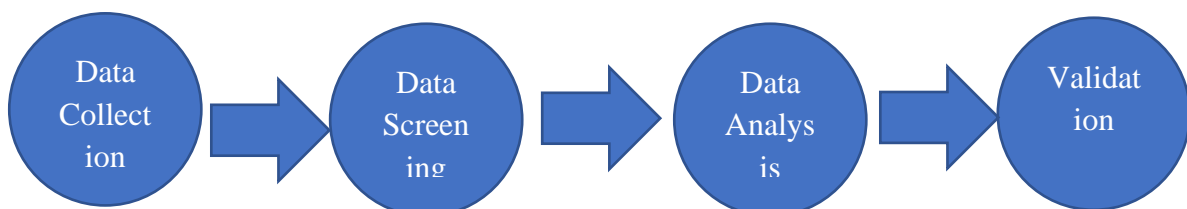


Figure 1. Data Validity Technique

4. RESULTS AND DISCUSSION

Characteristics of Digital Leadership (Subheading Level 2)

The results of this study show that digital leaders have unique characteristics that include the ability to integrate technology into organizational strategy. They act as innovators who drive change, accurate data-driven decision-makers, and build effective digital collaboration within teams and organizations.

1. Technological Integration Capability (Subheading Level 3)

Digital leaders leverage technology to support the achievement of organizational strategic goals. This includes using digital tools to optimize work processes and make data-driven decisions.

a) Role of Innovators (Subheading Level 4)

As innovators, digital leaders drive the adoption of new technologies relevant to supporting positive changes in the organization.

Challenges in Implementing Digital Leadership (Subheading Level 2)

However, the implementation of digital leadership is not free from challenges. The main barriers include resistance to change within the organization, a digital divide that hinders equitable access and adoption of technology, and limited technological competence among leaders and team members.

1. Resistance to Change (Subheading Level 3)

Resistance often arises from fear of change and a lack of understanding of the benefits of technology.

a) Digital Divide (Subheading Level 4)

Differences in access to and understanding of technology become obstacles to creating equitable technology adoption across the organization.

Technological Opportunities in Digital Leadership (Subheading Level 2)

On the other hand, technological opportunities pave the way for more significant transformation. The use of artificial intelligence (AI) and big data presents great potential to improve an organization's operational efficiency and support more accurate decision-making.

1. Utilization of AI and Big Data (Subheading Level 3)

These technologies enable organizations to analyze large volumes of data and generate deep insights.

a) Expansion Through Digital Platforms (Subheading Level 4)

Digital technology allows leaders to expand the organization's reach through the use of digital platforms, making the organization more adaptive to market dynamics and community needs.

Implications of Research Findings (Subheading Level 2)

The findings of this study have significant implications both theoretically and practically. Theoretically, this study provides new insights into the characteristics and challenges of digital leadership. Practically, these findings can serve as a guide for organizational leaders to develop digital competencies and address existing challenges

5. CONCLUSION AND SUGGESTIONS

Digital leadership is an essential element in driving organizational transformation in the technological era, requiring leaders to possess skills in adaptation, innovation, and data-driven decision-making, while organizations should prioritize training and competency development, invest in digital infrastructure to address the digital divide, and integrate sustainability values in technological use to maximize opportunities offered by AI and big data despite challenges such as resistance to change and unequal technology access.

REFERENCE LIST

- Avolio, B. J., Sosik, J. J., Kahai, S. S., & Baker, B. (2014). E-leadership: Re-examining transformations in leadership processes. *The Leadership Quarterly*, 25(1), 105–131.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Fisk, P. (2002). The making of a digital leader. *Business Strategy Review*.
- Kane, G. C., Palmer, D., Philips, A. N., & Kiron, D. (2019). Accelerating digital innovation inside and out. *MIT Sloan Management Review*.
- Muslim, M. (2021). Visi kepemimpinan digital kepala sekolah dasar di era teknologi digital. *ElementerIs*, 3(1), 1–10.
- Northouse, P. G. (2018). *Leadership: Theory and Practice*. Sage Publications.
- Rahman, M. (2019). Memanfaatkan media sosial untuk pendidikan Islam. *International Journal of Islamic Studies*, 8(4), 118.

- Romandoni, I. Y., Sulistyorini, S., & Efendi, N. (2024). Transformasi kepemimpinan pendidikan Islam: Tantangan dan peluang di era digital. *TADBIR: Jurnal Manajemen Pendidikan Islam*, 12(2), 194–209.
- Rowley, J., & Slack, F. (2004). Conducting a literature review. *Management Research News*, 27(6), 31-39.
- Sağbaşı, M., & Erdoğan, F. A. (2022). Digital leadership: A systematic conceptual literature review.
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333-339.
- Tulungen, E. E. W., Maramis, J. B., & Saerang, D. P. E. (2022). Digital transformation: Role of digital leadership. *Jurnal EMBA*, 10(2), 1116–1123.
- Zhu, P. (2015). *Digital master: Debunk the myths of enterprise digital maturity*. Lulu Press, Inc.