

Antecedents and Outcomes of Digital Leadership: A Systematic Literature Review

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ABSTRACT

Purpose

This research qualitatively synthesizes the literature and examines the antecedents and consequences of digital leadership. It provides a conceptual map of digital leadership that links research-based theoretical development to pragmatic application in digital transformation.

Design/methodology/approach

This review integrates findings from 26 peer-reviewed articles to examine digital leadership. It focuses on qualitative synthesis to examine the antecedents, mediators, moderators, and consequences of digital leadership.

Findings

Digital leadership extends e-leadership by strategically using technology to drive organizational change and system redesign. It is shaped by factors such as market orientation, digital culture, organizational learning, and network capability, which enhance innovation and transformation readiness. It improves employee performance, innovation capacity, and financial outcomes. Moderators like IT integration, big data analytics capability, and psychological capital influence its effectiveness. Unlike traditional leadership, it embeds technology into strategies to sustain dynamic capabilities in complex environments.

Conclusion

However, some scholars identify certain levels of confusion about the concepts of digital leadership and e-leadership. The authors are supposed to analyze external and psychological factors, as well as qualitative approaches, to enhance understanding and improve practice. Moreover, this paper presents future research directions and extends the existing knowledge base by identifying the potential antecedents and consequences of digital leadership.

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1. Introduction

Developments in digital technologies such as cloud computing, big data, the IoT (Internet of Things), and artificial intelligence (AI) mark a new turn in the industrial revolution. There is a change in which organizational structures and processes are being digitized. This is a basic organizational transformation driven by digital/innovative technologies (Philip et al., 2023). That is, organizations leverage the opportunities of digital technologies to change the organizational structure, facilitate business change, or develop new business models (Warner & Weager, 2019). Digital transformation is not about implementing new technologies. Still, their use is closely tied to the leaders who control the digital agenda and make decisions from the organization's perspective (Yao et al., 2023). A leadership style that supports organizational change and innovation in the digital age is essential for the success of digital transformation (Karippur & Bala Ramachandran, 2022).

Digital leadership has become an effective leadership style for managers to encourage staff to drive innovation and high-quality development, as digital technology and application scenarios offer new capabilities for leadership (Araujo et al., 2021). Digital leadership emphasizes leaders' ability and attitude to persuade followers to seize the opportunities presented by digital technology and reform the organization through digital means (Benitez et al., 2022). This leadership style is thought to be cross-hierarchical, change-oriented, and technologically enabled. It can foster innovation and influence the attitudes, actions, and outputs of people, groups, and organizations (Abbu et al., 2020). Academic research in this area has increased due to the growing significance of digital leadership; nevertheless, some studies explicitly conflate digital leadership with e-leadership (Kashive et al., 2022; Liu & Zhang, 2021; Soon & Salamzadeh, 2020), leaving the concepts of digital leadership and e-leadership conceptually confused. Digital leadership is studied from different perspectives as a competency perspective (Sandell, 2013; Zeike et al., 2019; Duan, 2020; Saputra et al., 2021). Toduk and Gande (2016) defined different characteristics, such as entrepreneurial and creative, as described by Zhu (2015).

Petry (2018) defined leadership as agile leadership. However, Kane et al. (2019) described it as transformational leadership. Larjovuori et al. (2018) describe the digital leadership dimensions in the content analysis approach by Strategic goals and action, facilitating, guiding networks, and driving cultural change. Wen (2021) examines the qualitative dimension, including understanding the digital economy, mastering digital technologies, managing digital assets, and developing digital talent. Ju (2021) defines the quantitative dimension as Digital teamwork, digital trust, digital communication, digital socialization, and digital change. Another researcher, Lin (2024), describes the study of leadership as the employment of digital leadership in certain situations, such as company management, government governance, and education; the creation of a scale for digital leadership in various contexts; and the efficacy of digital leadership at the team, organizational, and individual levels. Leaders are considered an important aspect of the development of organizational digital culture because they must build friendly relations with most people and other stakeholders, and pay attention to people processes in complex legal systems, with concerns for ethics that, in some situations, are paramount for every change process (Cortellazzo et al., 2019). When it comes to studying digital leadership, little attention has been paid to its antecedents. Digital leadership may be influenced internally by the organization's digital culture and structure (Philip et al., 2023). Research on this concept is still nascent and understudied due to the different perspectives. However, the current study has analyzed the literature on digital leadership.

To fill this gap, it is necessary to identify the antecedents and outcomes of digital leadership to understand the research framework by analyzing the literature. Moreover, this study's objective, based on a systematic literature review, is to define the antecedents and outcomes of digital leadership. This study will answer the following research question: What are the antecedents and possible outcomes of digital leadership? Lastly, to suggest future directions for future researchers on the same topic. The remaining paper defines the literature review. After that, the possible antecedents and outcomes are defined in the results section. In the last section, future recommendations are suggested.

2. Literature Review

Digital leadership is defined as the capacity of leaders to lead the capacities of others, teams, or even organizations with the strength derived from effective use of digital thinking through being in a position to acquire digital wisdom; in the capacity to make effective digital decisions, practical digital implementation, and directing the organization towards appropriate achievement of organizational objectives (Peng, 2021). Technological advancement has changed the organization's methods and forced it to adapt to evolving, technology-driven systems to enhance organizational functionality. Leadership: Connecting the Leaders and Emerging Technologies. The E-leadership concept introduced by Avolio et al. (2000) defines the social influence process through AIT (advanced information technology) to modify the perceptions, emotions, behaviors, and performances of the receiver, group, or organization. Avolio et al. (2014) broadened this concept by incorporating context, defining e-leadership as an influence or impactful process across individual and organizational contexts, and using AIT to facilitate change. E-leadership comprises both digital and conventional communication, knowledge of contemporary ICTs (information and communication technology), strategic selection of new ICTs, and mastery of those technologies (Armstrong, 2016; Van Wart et al., 2019). However, due to the developments in digital technology, such as cloud computing, big data, the internet of things, (5G), Blockchain, and AI, a new concept of leadership is appearing and known as digital leadership as opposed to e-leadership, which shows a more extensive approach to leading organizational change (Ju, 2021). While e-leadership focuses on the application of IT solely to expand organizational processes, digital leadership promotes an organization's digital transformation across operational procedures, business models, leadership effectiveness, and human resource management (HRM) (Eberl and Drews, 2021). Thus, Digital leadership is the new generation of electronic leadership concepts that shift from considering the role of IT tools usage by employees to organizational digital transformation (Jameson et al., 2022). However, previous studies show that, to achieve innovation and competitive advantage by utilizing internal and external resources, leadership is important for firms adopting digital technologies. Despite this, the dynamic capability and resource-based views support this phenomenon (Wang et al., 2022; Shin et al., 2023; Abbas et al., 2024; Wang et al., 2024; Chatterjee et al., 2023).

Having analyzed the concept of digital leadership that is emerging and distinct from E-leadership, the current study undertook a systematic literature review of digital leadership. A systematic review of the literature on digital leadership found that the antecedents of leadership have received less scholarly attention. The current systematic review includes 26 scholarly articles, all of which have been meticulously scrutinized to establish the antecedents and outcomes of digital leadership.

The research approach is described systematically with the following subtopics. Following that, the result section elaborates on the link from various theoretical perspectives. In the last

section of this paper, the practical and policy implications, limitations of the current study, and proposed directions for future research are discussed.

3. Methodology

3.1. Research Approach

This study has sought to clarify the meaning of digital leadership within an overarching framework. To reach this framework, the current study conducted a systematic literature review because this technique provides depth in analyzing all related papers in this subject area and the capacity to identify other ideas that have not been explored. In addition, the methodology is distinct and clear, and the systematic evaluation of a stream of material raises standards of the evaluation process and outcome (Tranfield et al., 2003). Using a qualitative research design, we extended content analysis to the final sample of articles.

3.2. Description of the review process: Data Collection

Different types of databases were used to find the data, including Google Scholar, the largest Database, Scopus, and the Web of Science. However, different keywords are used for data collection, such as “digital leadership”, “E- leadership”, “Leadership”, “digital culture”, “digital leadership” AND “digital culture”, and Boolean operators such as “AND” and “OR”.

3.3. Description of the Inclusion Criteria

To include the above-identified papers, this study had to meet certain criteria. For this systematic literature review, the study included articles published between 2020 and 2024. Additionally, because these are considered to provide reliable data and thus exert the greatest influence in the field, publications had to appear in international peer-reviewed journals with an impact factor, as noted by Psadakoff et al. (2005). The catch is that the available English-language articles cover digital leadership research.

3.4. Data extraction procedure

The first part of the sample data examined irrelevant data. To this end, the author assessed the articles' abstracts against the set inclusion criteria. The table of contents alone deemed the abstract relevant; then the entire paper, from the introduction to the methodology and discussion section, concluded with a definition of digital leadership.

Figure 1 below presents the flowchart of the articles selected for inclusion in this review, following the PRISMA steps. Step 1 identified 131 articles (Google Scholar: 131). Due to overlapping articles with similar content in Step 2, the sample was narrowed down by 10 articles. In step 3, the abstracts of the articles were reviewed according to the criteria; subsequently, 78 articles were excluded because they were not relevant to the study. In step 4, the three sections of introduction, methodology, and discussion were carefully considered according to the inclusion criteria, from which another 17 articles were excluded due to lower impact factors. The final step after the exclusion process was identifying 26 articles as relevant to the study upon reviewing them in total. Furthermore, when the final process was decided, it was about digital leadership. Furthermore, when the final process was decided since it was about digital leadership.

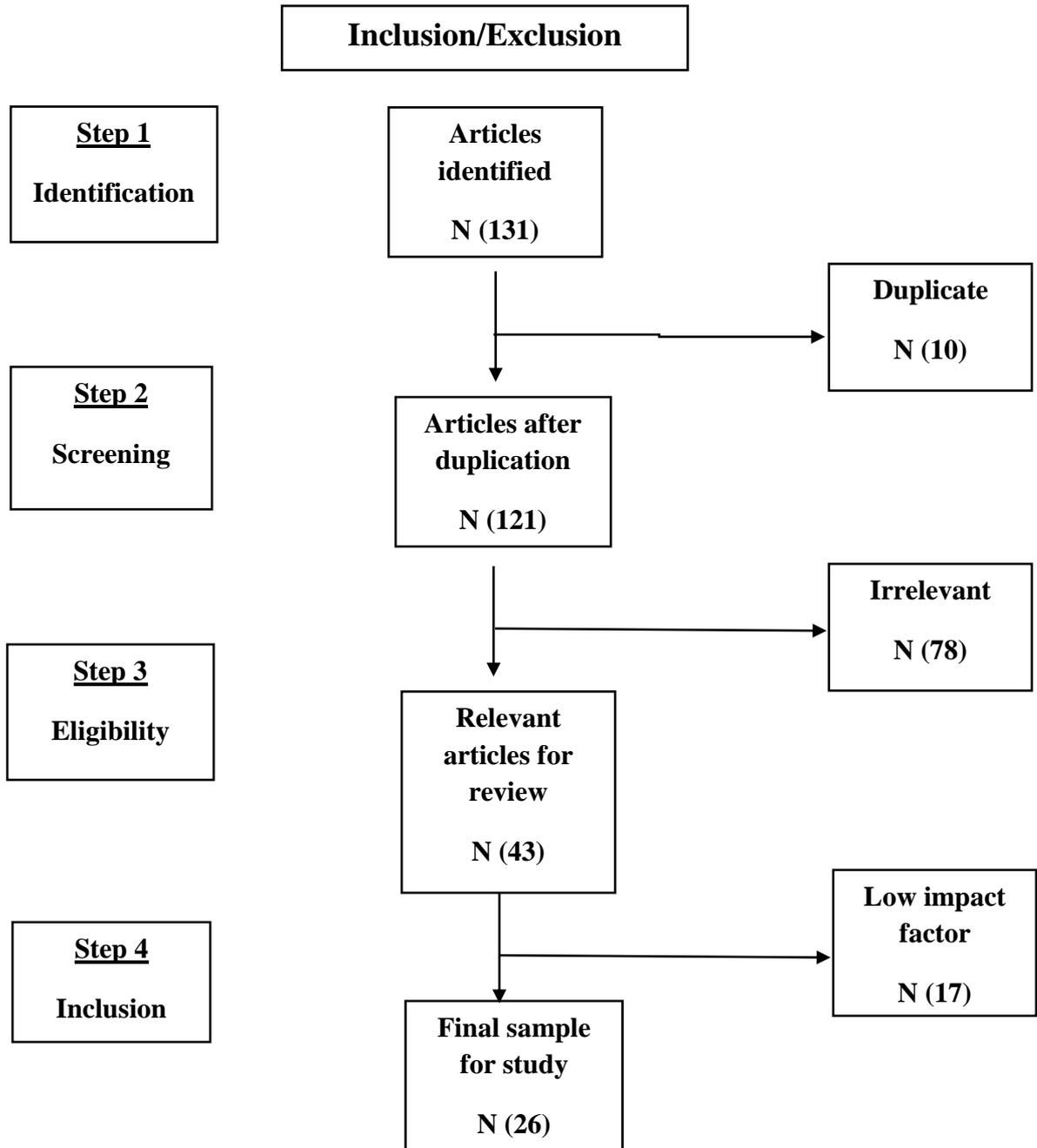


Figure 1. PRISMA Technique
Source: Author's own elaboration

4. Result and Discussion

Table.1. Antecedents of Digital leadership

Variables	Articles	Reference
Market orientation	1	Sasmoko <i>et al.</i> (2019)
Digital culture	1	Muniroh <i>et al.</i> (2022)
Organizational learning	1	Muniroh <i>et al.</i> (2022)
Network capability	1	Binsaeed <i>et al.</i> (2023)
Digital transformation	1	Bui <i>et al.</i> (2023)
Environmental performance, social performance, governance performance,	1	Mo <i>et al.</i> (2023)
Information technology capability at the DW, dynamic capability at the digital workplace, dynamic digital workplace policy	1	Chatterjee <i>et al.</i> (2023)
Perception of DL	1	Ahmed <i>et al.</i> (2024)
Digital training and digital communication	1	Zia <i>et al.</i> (2024)
Innovative culture	2	Al Issa <i>et al.</i> (2024), Inayah <i>et al.</i> (2024)
Digital transformation, business model innovation, and organizational culture	1	Malik <i>et al.</i> (2024)

Source: Author's own elaboration

Contemporary literature on digitalization reveals several interrelated antecedents that comprehensively define the organization's performance in the age of digital change. According to Sasmoko *et al.* (2019), market orientation is the key element, as digital strategies and signals align organizations with market requirements and improve their position. According to Muniroh *et al.* (2022), the presence of a digital culture alongside a culture of learning facilitates the easy assimilation of new technological changes, enabling firms to be “ready” in anticipation of fast-emerging digitization. In their study of business performance in complex digital environments, Binsaeed *et al.* (2023) emphasize network capability as the capacity to harness information and resources from outside the business. Bui *et al.* (2023) define digital transformation as a strategic management process of updating organizational activities to adapt to the dynamic nature of digital systems. Mo *et al.* (2023) examine the influence of digital initiatives and find that digital platforms enhance ESG performance. Chatterjee *et al.* (2023) suggest that IT and dynamic capabilities that enable workplace adaptability are key drivers of employee engagement, thanks to the specifications and technological features of flexible work arrangements. According to Ahmed *et al.* (2024), digital leadership perception is a concept that emphasizes organized leadership by directors who advocate digital skills to spur development. Zia *et al.* (2024) provide a closer view of digital training and communication as key approaches to skill development and the tractability of change. Additionally, the idea of creating a culture for innovation, as described by Al Issa *et al.* (2024) and Inayah *et al.* (2024), supports trying and trying again. Finally,

Malik et al. (2024) establish that digital change, along with business model change and organizational flexibility, is the main feature of sustainability in digitally challenged industries. Altogether, these sources highlight that digital change should be recognized as an organizational cultural, processual, and strategy-technology initiative that determines an enterprise's long-term efficiency.

Table.2.Outcomes of Digital Leadership

Variables	Articles	Reference
IWB	5	Binsaeed <i>et al.</i> (2023), Bui <i>et al.</i> (2023), Abbas <i>et al.</i> (2024), ahmad <i>et al.</i> (2024), al memon el al., (2024)
Psychology well being	1	Zeike <i>et al.</i> (2019)
Dynamic capability	1	Sasmoko <i>et al.</i> (2019)
Championing, Idea implementation, Idea generation, Idea exploration, Idea	1	Erhan <i>et al.</i> (2022)
Innovative performance	1	Benitez <i>et al.</i> (2022)
Technology integration	1	AlAjmi, (2022)
Employee performance	1	Muniroh <i>et al.</i> (2022)
Exploratory innovation	1	Wang <i>et al.</i> (2022)
Organizational performance	1	Shin <i>et al.</i> (2023)
Knowledge sharing, innovation capability	1	Fatima <i>et al.</i> (2023)
Firm financial performance	1	Senadjki <i>et al.</i> (2023)
Firm performance	1	Hung <i>et al.</i> (2023)
Innovative performance	1	Mo <i>et al.</i> (2023)
Organizational performance	1	Chatterjee <i>et al.</i> (2023)
Di	1	Al Issa <i>et al.</i> (2024),
Innovation performance	1	Emilisa <i>et al.</i> (2024)
Employee digital performance	1	Wang <i>et al.</i> (2024)
Organizational culture	1	Joseph (2024)
Characteristics, styles, and skills needed for effective	1	Malik <i>et al.</i> (2024)
Digital capabilities	1	Albannai <i>et al.</i> (2024)

Source: Author's own elaboration

Table 2 presents the current literature that has established multiple factors that underpin organizational innovation and performance, such as clients' psychological health (Zeike et al., 2019), dynamic capacities (Sasmoko et al., 2019), and employees' performance (Muniroh et al., 2022). In facilitating firm and organizational improvement, AlAjmi (2022) has particularly identified the integration of technology as critical, as well as exploratory innovation promotion as vital for improving financial performance, knowledge sharing, and innovation capability (Fatima et al., 2023; Senadjki et al., 2023). Culture and digital enablers also add the critical tasks of maintaining innovative outcomes and digital innovation (Joseph, 2024; Albannai et al., 2024). Extensive studies of stages in the innovation process, such as idea generation, ideation, championing/generation, and application, highlight ways that can influence innovative performance and employee digital performance for personal and organizational success (Erhan et al., 2022; Wang et al., 2024). Research continues to examine the roles of organizational attributes, leadership behaviors, and requisite competencies in predicting responsiveness and organizational effectiveness, especially in volatile situations (Malik et al., 2024; Shin et al., 2023).

Table.3. Mediators of Digital Leadership

Variable	Articles	Reference
Innovation management	1	Sasmoko <i>et al.</i> (2019)
It infrastructure integration, business process integration, data integration	1	Benitez <i>et al.</i> (2022)
Innovation	1	Muniroh <i>et al.</i> (2022)
DEO, digital organizational culture	1	Wang <i>et al.</i> (2022)
Knowledge sharing	1	Binsaeed <i>et al.</i> (2023),
E-learning anxiety	1	Salam, (2023)
Digital culture, employee digital capability	1	Shin <i>et al.</i> (2023)
Open innovation	1	Fatima <i>et al.</i> (2023)
Digital transformations	1	Senadjki <i>et al.</i> (2023)
Cloud-based accounting, decision-making quality	1	Hung <i>et al.</i> (2023)
Relational trust, digital trust	1	Mo <i>et al.</i> (2023)
Employee workplace balance, employee performance in the digital workplace	1	Chatterjee <i>et al.</i> (2023)
Digital OC, digital entrepreneurial orientation,	1	Abbas <i>et al.</i> (2024),
Learning orientation, innovation capabilities	1	Ahmad <i>et al.</i> (2024),
Digital engagement	1	Al memon el al., (2024)
Techno-work engagement	1	Al Issa <i>et al.</i> (2024),
Digital innovation	1	Emilisa <i>et al.</i> (2024)
High involvement HRM practices, employee dynamic capability	1	Wang <i>et al.</i> (2024)
Digital literacy	1	Joseph (2024)

Source: Author's own elaboration

Table 3, Contemporary studies have put significant weight on the ability of digital transformation to support and advance innovation across organizations, including factors such as innovation management (Sasmoko et al., 2019), IT and business process integration (Benitez et al., 2022), and digital organizational culture combined with an entrepreneurial mindset (Wang et al., 2022; Abbas et al., 2024). DT success is anchored in the twin pillars of digital enablers and knowledge sharing, open innovation, and digital trust to improve decision-making and performance (Alshahrani et al., 2023; Binsaeed et al., 2023; Fatima et al., 2023; Mo et al., 2023). Research examines employee engagement and performance in digital contexts and the waged workforce, focusing on the role of digital literacy alongside techno-work engagement (Shin et al., 2023; Joseph, 2024; Al Issa et al., 2024). The third element of HR high-involvement work practices is also critical in constructing employee dynamic capability and work-life flexibility in digital environments (Wang, 2024; Chatterjee et al., 2023). It is also important to consider the effects of digital engagement and innovation capabilities, as well as dimensions such as e-learning anxiety and cloud-based accounting, on digital orientation, overall organizational resilience, and learning orientations that need to be supportive (Salam, 2023; Hung et al., 2023; Ahmad et al., 2024).

Table.4. Moderator of Digital Leadership

Variable	Articles	Reference
Big data analytics capabilities	1	Wang <i>et al.</i> (2022)
Digital leadership	1	Binsaeed <i>et al.</i> (2023),
Psychological capital	1	Shin <i>et al.</i> (2023)
Leadership member exchange	1	Fatima <i>et al.</i> (2023)
Technostress inhibitors	1	Senadjki <i>et al.</i> (2023)

Source: Author's own elaboration

Table 4, these analyses support the importance of big data analytics capacity, digital management, and psychological assets in enhancing organizational performance in digitally oriented contexts. Wang et al. (2022) explain how big data analytics competencies create new business outcomes, and Binsaeed et al. (2023) discussed how digital leadership influences these efforts. Human capital, one of the critical individual resources, is found to help build employee psychological capital and, in turn, improve employee resilience and engagement in digital workplaces (Shin et al., 2023). Furthermore, reliable leadership-member exchange promotes trust and cooperation (Fatima et al., 2023), and technostress inhibitors are essential for mitigating electronic fatigue and boosting efficiency (Senadjki et al., 2023). Together, all such factors build a strong, flexible, and productive organizational culture amid digital transformation.

Table.5. Theories used in Digital leadership

Theories	Articles	References
Upper echelon theory	2	Erhan <i>et al.</i> (2021), Hung <i>et al.</i> (2023)
Leadership theory	2	Benitez <i>et al.</i> (2022), shin <i>et al.</i> (2023)
Digital leadership theory	1	Khalid, (2022), Wang <i>et al.</i> (2022), shin <i>et al.</i> (2023), Abbas <i>et al.</i> (2024),Wang <i>et al.</i> (2024), Chatterjeea <i>et al.</i> (2023)
BV and dynamic capability theory	5	
Psychological capital theory	1	Salam, (2023)
Knowledge base theory	1	Fatima (2023)
Transformational leadership theory (TLT)	1	Senadjki <i>et al.</i> (2023)
Social information theory (sip)	1	Abbas <i>et al.</i> (2024),
(LMX) theory	1	Ahmad <i>et al.</i> (2024)
Job Demands (JD-R) theory	1	Zia <i>et al.</i> (2024)
Social exchange theory	2	Al Issa <i>et al.</i> (2024), Ahmad <i>et al.</i> (2024)
Institutional theory (INT) the neo-institutional theory (NIT)	1	Malik <i>et al.</i> (2024)
Digital dynamic capability theory	1	Albannai <i>et al.</i> (2024)
Grounded theory	1	Qin Lin, (2024)

Source: Author's own elaboration

Table 5: In recent years, researchers have used various theories to analyze organizational processes and leadership in the context of digital transformation. There are two Overarching Theories: the first is the Upper Echelon Theory, and the second is the Leadership Theories that hint at executive control over innovation (Erhan et al., 2021; Hung et al., 2023; Benitez et al., 2022). Digital leadership theory is a recent leadership theory that examines leadership in digital contexts (Khalid, 2022). The Resource-Based View (RBV) and the theory of dynamic capabilities are other theories that examine resource flexibility and competitive advantage in organizations (Shin et al., 2023; Wang et al., 2022). Mathematical capital, the information center, and the theory of transformational leadership focus on the growth of individuals and groups (Salam, 2023; Fatima, 2023; Senadjki, 2023). Job Demands-Resources theory and Social Information Processing evaluate the level of demands and the recognition of social clues at the workplace (Zia et al., 2024; Abbas et al., 2024). The Grounded Theory approach and the Institutional view give a comprehensive view of resilience and change (Qin Lin, 2024; Malik et al., 2024).

Table.6. Research Approach Used in Digital Leadership

Strategy	Articles	References
Survey	23	Al Issa <i>et al.</i> (2024), Ahmad <i>et al.</i> (2024),Zia <i>et al.</i> (2024),Abbad <i>et al.</i> (2024),Senadjki <i>et al.</i> (2023),Fatima (2023),Salam, (2023),Wang <i>et al.</i> (2022), shin <i>et al.</i> (2023), Abbas <i>et al.</i> (2024),Wang <i>et al.</i> (2024), Chatterjeea <i>et al.</i> (2023),Erhan <i>et al.</i> (2021), Hung <i>et al.</i> (2023),Benitej <i>et al.</i> (2022), Binsaeed <i>et al.</i> (2023), Joseph (2024),Emilisa <i>et al.</i> (2024),al memon el al., (2024),Mo <i>et al.</i> (2023),Sasmoko <i>et al.</i> (2019),Bui <i>et al.</i> (2023), Zeike <i>et al.</i> (2019)
SLR	4	Qin Lin, (2024), Albannai <i>et al.</i> (2024),Malik <i>et al.</i> (2024), Tigre <i>et al.</i> (2023)

Source: Author’s own elaboration

Table 6 Shows That Contemporary research on digital transformation and innovation heavily employs questionnaires, and 23 papers focus on digital leadership, frontline employee engagement, and innovation readiness, among other topics (Al Issa *et al.*, 2024; Ahmad *et al.*, 2024). These works help us understand the effects of digital characteristics on productivity in the work environment and on firm outcomes (Chatterjee *et al.*, 2023; Joseph, 2024). On the other hand, systematic reviews of existing literature (SLRs) by Lin (in press) and Albannai *et al.* (in press) provide an integrated overview, identifying trends and directions for future research on digital competencies and performance. Combined, these methods approach the comprehensive impact of the digitalization process.

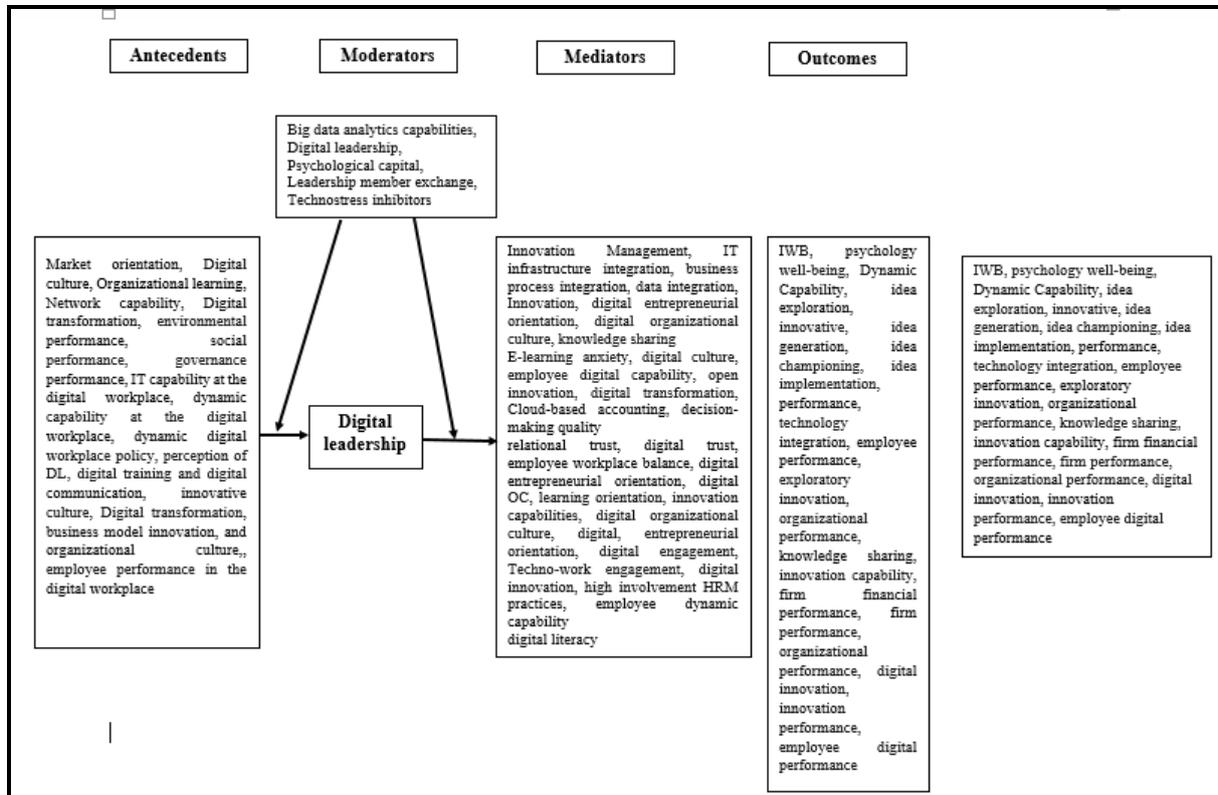


Figure.2. Conceptual Framework of Digital Leadership

Source: Author’s own elaboration

5. Conclusion

Thoroughly examining and evaluating the definition and conceptual underpinnings of digital leadership, this study synthesizes the existing literature on the subject of digital leadership, its antecedents, and possible outcomes. The following finding of this literature is defined as follows.

First, after conducting the thorough literature it is found that the digital leadership concept emerged from E- leadership and there is a difference between digital leadership and E- leadership which is considered quite confusing for the researchers. Secondly, the antecedents and outcomes of the leadership are found at the individual level which includes, openness to innovation, and digital literacy. Thirdly, it is also found on an organizational level which includes digital infrastructure.

Digital leadership definition can be defined in two different ways which include the leader's behavior and ability towards technology utilization and changes the attitudes, behavior, and thinking for the creation of value to improve the organization's performance. The frequency tables which are defined in the result section provide a detailed description for the next researchers, and the tables provide the road maps for the selection of variables in the field of digital leadership. All the possible theories and mediating variables are described in detail.

5.1. Theoretical Implications

These theoretical implications contribute to the leadership theory by incorporating the digital dimensions. Their combination builds up the leadership theory framework, maintaining the socio-technical aspects of digital transformation. Digital leadership extends regular leadership theories, such as transformational and transactional leadership theories, by focusing on the internet influence and digital proficiency as vital skills when addressing change. It repositions the digital tools from simplistic operational enablers to organizational collaboration and creativity and value creation instruments for organizations. These implications expand the theory by describing how dynamic capability theory is involved in technological advancement, expanding its relevance in this digital era. Digital leadership focuses on the change from a hierarchical organizational culture to a virtual structure where a leader has to create and develop a network of interconnected and digitalized people and organizations.

5.2. Practical Implications

Digital leadership directs organizational transformation by encouraging innovation, agility, and resilience in the digital era. Practically, it enables leaders to effectively leverage digital technologies to enhance operational efficiency, employee collaboration, and customer engagement. It promotes a culture of continuous learning and adaptability, ensuring organizations stay competitive in rapidly changing markets. Additionally, digital leadership plays a pivotal role in aligning technology strategy with business objectives, navigating digital disruptions, and fostering sustainable growth by integrating ethical and inclusive practices in technology adoption.

5.3. Limitations

The limitations of the current review are; that the main focus was to incorporate the peer-reviewed articles that were published in 2019-2020. The case studies and dissertations are not included in this systematic literature review.

5.4. Future Recommendations

Despite the systematic literature review on digital leadership, it is an emerging concept and still, there are many grounds for future research that can create more value for this topic. Future researchers can research external factors that can affect digital leadership. Future researchers can conduct the research on dimensions, and characteristics of E-leadership. In the future, the psychological factors of the organizational leader can be an effective factor for digital leaders. Furthermore, in future research, leaders can adopt digital technologies that enhance the circular economy, which includes product maintenance, and AI tools for waste reduction. In the future, the role of digital leadership towards sustainable development. After studying the 26 scholarly articles it is found that most of the studies are quantitative, the qualitative studies are very rare. In the future, the researchers can conduct new research to adopt the mixt method approach to cross-check the results of both methods. The mixed method approach increases the credibility of the study and further demonstrates the empirical results.

Author contribution

- Khawar Hussain: Responsible for the conceptualization of the research problem, development of the research framework, study design, and statistical analysis.
- Dr. Hina Shahab: Provided continuous guidance and feedback throughout the research process and approved the final version of the systematic literature review.
- Sahiba Anwer: Conducted the literature review and contributed to the refinement and improvement of the manuscript.

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The author declares no conflict of interest.

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