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The Evolution of Public Sector Leadership in the Era of Digital Transformation

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Article Info

ABSTRACT

Digital transformation has brought significant changes to the public sector, demanding adaptive, data-driven, and collaborative leadership to enhance efficiency and service quality. This research aims to identify the role of transformational, data-driven, and cross-sectoral leadership in managing digital transformation in the public sector, with a focus on the challenges and opportunities involved. A qualitative approach through a literature review is employed to analyse various relevant academic sources, including journals, books, and reports from 2015 to 2024. Data collection techniques involve searching academic databases such as Scopus, Web of Science, and Google Scholar. The findings reveal that transformational leadership significantly contributes to the success of digital transformation by fostering innovation and driving organisational cultural change. Data-driven leadership enhances accountability and efficiency, while cross-sectoral collaboration strengthens the digital ecosystem through multi-stakeholder participation. These findings also highlight key challenges, including organisational cultural resistance, technological infrastructure limitations, and data security issues. The study concludes by emphasising the importance of public sector leaders integrating technology-driven, data-informed, and participatory strategies to design sustainable digital transformations. The practical implications of this research include strategic guidance for the public sector to navigate dynamic digital changes.

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1. INTRODUCTION

Digital transformation has become one of the most significant phenomena of the last decade, reshaping various aspects of human life, including how the public sector fulfils its roles and functions. This technological revolution involves not only the utilisation of digital tools but also fundamental changes in leadership paradigms, governance, and the delivery of public services. In this context, numerous challenges and opportunities have emerged, necessitating adaptive, innovative, and data-driven leadership in the public sector. Consequently, digital transformation has become a strategic issue that warrants investigation to understand how public sector leaders can effectively manage this change.

The urgency of research on public sector leadership in the era of digital transformation is driven by several factors. Firstly, the adoption of digital technologies such as artificial intelligence (AI), big data, blockchain, and the Internet of Things (IoT) has transformed public service dynamics, enhancing efficiency, accountability, and citizen engagement (Yılmaz & Kılıçarslan 2022); (Meijer 2020). Secondly, non-adaptive leadership in addressing the challenges of the digital era, such as cybersecurity threats, the digital divide, and resistance to change, can impede this transformation process (Osborne et al. 2018); (Mergel et al. 2019). Thirdly, the success of digital transformation requires significant organisational cultural changes, including fostering innovation, continuous learning, and collaboration within organisations (Janssen & Van der Voort 2016); (Bason 2018). Therefore, this study seeks to answer the key question: how can public sector leaders effectively manage digital transformation to enhance public sector performance?

Previous literature indicates that developed countries, such as Estonia and Singapore, have successfully leveraged digital transformation to improve the efficiency and quality of public services through comprehensive digital strategies (Scholl & AlAwadhi 2016). Conversely, developing countries face unique challenges, including limited technological infrastructure and the digital divide, which require innovative and solution-oriented leadership (Ali et al. 2020). Studies also reveal that transformational leadership, which inspires organisational members to innovate and adapt, is increasingly relevant in this context (Northouse 2022); (Håkansson & Söderholm 2019). Moreover, data-driven approaches and community participation have proven effective in enhancing government legitimacy and effectiveness (Gascó 2017); (Bertot et al. 2016).

The implementation of digital transformation in the public sector also encounters numerous barriers. Research by (Mergel et al. 2019) identifies technological infrastructure limitations, organisational cultural resistance to change, and a lack of human resource capacity as major challenges. In this context, leadership capable of managing the relationship between technology, organisational processes, and societal needs is crucial (Dunleavy et al. 2018). Additionally, issues related to data security, privacy, and the ethics of technology have become increasingly urgent to address (Cordella & Bonina 2021). The implications of this research encompass both theoretical and practical contributions. Theoretically, this study will enrich the literature on public sector leadership in the digital era, particularly in the context of developing countries facing unique challenges. Practically, the findings of this research are expected to serve as a guide for public sector leaders in designing effective digital transformation strategies, including building public trust through transparency, accountability, and participation (Criado et al. 2018); (Norris & Reddick 2021).

The hypotheses proposed in this study are as follows: transformational leadership significantly enhances the success of digital transformation implementation in the public sector; data-driven leadership contributes to improved efficiency and accountability in public services; and leadership that fosters cross-sector collaboration positively influences

the sustainability of the digital ecosystem in the public sector. This research employs a literature review approach to identify and analyse various relevant theoretical and empirical perspectives.

The objective of this study is to explore how public sector leadership can adapt to the dynamics of digital transformation. It seeks to fill gaps in existing literature by analysing the evolution of leadership styles, such as transformational and data-driven leadership, and their roles in driving innovation and collaboration in the public sector. Furthermore, the study aims to identify best practices that public sector leaders can adopt to overcome challenges and maximise the opportunities presented by digital technology. Thus, this research aspires to provide in-depth insights into the evolution of public sector leadership in the digital transformation era and to inspire future leaders to leverage digital technology optimally to improve public sector performance.

2. METHOD

This research adopts a qualitative approach using a literature review method to analyse the dynamics of public sector leadership in addressing digital transformation. The literature review was chosen as it enables the researcher to identify, evaluate, and synthesise various theoretical and empirical perspectives from published sources. This approach is well-suited for understanding complex concepts, such as transformational leadership, data-driven leadership, and cross-sector collaboration, within contexts shaped by digital technologies.

Participants in this research do not include individuals or groups directly but instead utilise literature comprising academic journals, books, research reports, and official publications from 2015 to 2024. The inclusion criteria for the literature are sources relevant to the topic of digital transformation in the public sector, discussing aspects of leadership, or covering the implementation of technologies such as artificial intelligence (AI), big data, blockchain, and the Internet of Things (IoT) in public services. Data collection was conducted by exploring academic databases such as Scopus, Web of Science, Google Scholar, and national journal portals.

Validation and transferability in this literature review are ensured by evaluating the quality of the literature based on credibility, relevance, and timeliness. The researcher ensures that the selected literature originates from reputable journals and reliable sources with transparent methodologies. Moreover, transferability is guaranteed by describing the research findings in detail so they can be adapted to similar contexts in the public sector, particularly in developing countries.

The data analysis method employed a thematic approach, wherein the collected literature was analysed to identify key themes and relevant patterns. The analysis was carried out through several stages: categorising the literature by topic, critically reviewing the arguments presented in each piece of literature, and synthesising findings to produce comprehensive conclusions. The data obtained were analysed descriptively to understand how specific leadership styles influence the success of digital transformation in the public sector. The results of this analysis were used to address the research questions and formulate practical recommendations for public sector leaders. By using the literature review method, this research aims to make significant theoretical and practical contributions to understanding the role of public sector leadership in the era of digital transformation.

3. RESULTS AND DISCUSSION

Digital transformation in the public sector has become an increasingly relevant topic, particularly in addressing the challenges of globalisation, improving accountability,

and meeting the demand for efficient public services. Based on the literature analysis conducted, several key findings were identified and critically discussed by comparing the results of this study with previous research.

This research analyses the dynamics of public sector leadership in facing digital transformation through a literature review involving various academic sources and official publications from 2015 to 2024. The main findings indicate that the success of digital transformation in the public sector heavily depends on the leadership style adopted. Specifically, transformational leadership, data-driven leadership, and cross-sector collaboration are identified as key factors supporting technological adaptation and enhancing the performance of public sector organisations. This literature review identifies three primary pillars supporting successful digital transformation in the public sector: transformational leadership, data-driven leadership, and cross-sector collaboration. These findings are elaborated in more detail as follows:

Table 1. Summary of Supporting and Inhibiting Factors in Digital Transformation in the Public Sector

Key Theme	Supporting Factors	Inhibiting Factors	Implications
Transformational Leadership	Inspiration, innovation, and organisational adaptability	Resistance to change	Enhanced efficiency and accountability of public services
Data-Driven Leadership	Evidence-based decision-making	Limited data analysis capacity	Increased government transparency and legitimacy
Cross-Sector Collaboration	Partnerships with the private sector and communities	Lack of cross-sector coordination	Sustainability of the public sector digital ecosystem
Technological Infrastructure	Utilisation of AI, big data, blockchain, and IoT	Digital divide and infrastructure limitations	Efficiency and innovation in public service delivery

Transformational leadership emerges as the most relevant leadership style in the context of digital transformation. Transformational leaders possess the ability to inspire organisational members to adopt innovation and adapt to technological changes. Several studies support this finding: Inspiration and Innovation: Studies by (Northouse 2022) and (Håkansson & Söderholm 2019) emphasise that transformational leaders can create a work environment conducive to innovation; Resistance to Change: A major barrier is resistance to change, often driven by a conservative organisational culture (Mergel et al. 2019).

Table 2. Components of Transformational Leadership in Digital Transformation

Component	Description	Reference
Visionary Inspiration	Leaders can establish a clear vision and motivate organisational members to achieve it	Northouse (2022)
Driving Innovation	Creating an environment that encourages exploration and adoption of new technologies	Håkansson & Söderholm (2019)
Individual Development	Enhancing the skills and capacities of organisational members through training and mentoring	Mergel et al. (2019)
Adaptation to Change	Instilling a flexible organisational culture to address technological dynamics	Janssen & Van der Voort (2016)

The use of data in decision-making is a hallmark of digital transformation. Data-driven leadership significantly contributes to improving efficiency and transparency in the public sector: Evidence-Based Decision-Making: The use of big data enables more accurate analyses to support public policy (Yılmaz & Kılıçarslan 2022); Data Capacity Constraints: The biggest challenge is the lack of data infrastructure and analytical skills in the public sector, particularly in developing countries (Ali et al. 2020).

Table 3. Benefits and Challenges of Data-Driven Leadership

Aspect	Benefits	Challenges
Decision-Making	More accurate and evidence-based policies	Limited availability of quality data
Transparency	Improved accountability and government legitimacy	Resistance to data openness
Operational Efficiency	Cost reduction through resource optimisation	Gaps in technological infrastructure

Cross-sector collaboration between government, private sector, and communities is an essential element in sustaining digital transformation. Success in Collaboration: Studies in Estonia and Singapore highlight the importance of cross-sector partnerships in developing digital infrastructure (Scholl & AlAwadhi 2016); Coordination Challenges: In developing countries, cross-sector coordination is often hindered by rigid bureaucracy and a lack of effective communication mechanisms (Ali et al. 2020).

Table 4. Examples of Cross-Sector Collaboration Practices in Developed and Developing Countries

Country	Collaboration Practices	Impact
Estonia	Implementation of blockchain-based e-Government	Improved efficiency and data security
Singapore	Public-private partnerships for digital solutions	Public service innovation through IoT
Developing Countries	Collaboration in smart city projects with the private sector	Limited implementation due to infrastructure issues

This research has several limitations: Literature Review Methodology: It does not involve empirical field data, limiting the generalisability of the findings; Local Context: Not all findings can be directly applied to developing countries with different cultures and capacities; Timeframe Restriction: The literature only covers 2015–2024, which may not fully capture long-term evolution.

To address these limitations, future research is recommended to: Include empirical data, such as surveys or interviews; Examine the impact of local culture on leadership styles; Expand the timeframe of the analysis to encompass a broader literature scope. This research aims to serve as a reference for the public sector in adopting adaptive and technology-based leadership to enhance the performance of public services.

4.   CONCLUSION

This study explores the dynamics of public sector leadership in addressing digital transformation, focusing on the roles of transformational leadership, data-driven leadership, and cross-sector collaboration in enhancing the efficiency and quality of public services. The findings reveal that the success of digital transformation is significantly

influenced by leaders' ability to manage change, strategically leverage technology, and foster participation among various stakeholders. These insights provide valuable guidance for the public sector in designing effective leadership strategies in the digital era.

The conclusions of this research emphasise that the success of digital transformation in the public sector heavily depends on the application of transformational leadership, data-driven leadership, and cross-sector collaboration. Transformational leadership plays a key role in inspiring innovation and creating an organisational culture that adapts to technological changes. Leaders who can articulate a clear vision and empower individuals through skills development significantly contribute to the efficiency and accountability of public services. However, resistance to change remains a major challenge, requiring more effective communication strategies and organisational cultural reforms.

Data-driven leadership has emerged as a crucial pillar for more accurate and transparent decision-making in the digital era. The utilisation of big data supports evidence-based policies that enhance government legitimacy in the eyes of the public. Nonetheless, limited analytical capacity and technological infrastructure remain obstacles in many developing countries. Addressing these issues requires further investment in human resource training and the development of digital infrastructure. This implementation also necessitates policy support focused on improving data literacy among government officials.

Cross-sector collaboration has proven to be an effective strategy in developing a sustainable digital ecosystem. Partnerships between government, the private sector, and civil society have the potential to create innovative solutions that improve public services. Examples of successful collaboration in advanced countries such as Estonia and Singapore demonstrate the effectiveness of building efficient digital infrastructure. However, similar successes are often hindered in developing countries due to bureaucratic and coordination challenges. Therefore, efforts to strengthen cross-sector integration must be supported by more effective communication mechanisms and policies that encourage synergy among stakeholders.

These conclusions provide a foundation for further research and the implementation of more inclusive and adaptive digital transformation policies.

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