

## Leadership Styles and Adoption of 5IR in Libraries of Higher Education

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### Abstract

This study explores the relationship between leadership styles and the adoption of the Fifth Industrial Revolution (5IR) in academic libraries of higher education institutions. Through a scoping review of literature, the study examines the various leadership styles employed in academic libraries and their impact on the successful adoption of 5IR technologies and initiatives. The findings suggest that transformational leadership, characterized by visionary leadership and a focus on innovation and empowerment, is particularly conducive to the successful adoption of 5IR. Transactional leadership may also play a role in facilitating the adoption of 5IR, albeit to a lesser extent. However, laissez-faire leadership, characterized by a hands-off approach and delegation of decision-making responsibilities, may present challenges in the adoption of 5IR due to a lack of direction and accountability. Adaptive leadership, emphasizing flexibility, resilience, and responsiveness to change, emerges as a key factor in navigating the complexities of 5IR adoption, balancing the need for innovation with the importance of maintaining stability and continuity in library operations. The paper contributes to knowledge in terms of policy and practice in the field of librarianship.

### Introduction

In the landscape of higher education, academic libraries serve as critical hubs for knowledge dissemination, research facilitation, and scholarly engagement. Within these dynamic environments, effective leadership plays a pivotal role in steering institutions toward innovation, adaptation, and sustainable growth. Leadership styles within academic libraries are multifaceted and profoundly influential in shaping organizational culture, strategic direction, and operational effectiveness. Whether it is the visionary guidance of transformational leaders, the pragmatic approach of transactional leaders, or the decentralized autonomy fostered by laissez-faire leaders, the choices made by library leaders profoundly impact the institution's capacity to thrive in an era of rapid technological advancement and societal change.

Leadership style refers to how a leader interacts with their followers, makes decisions, and influences organizational outcomes. In turn, it encompasses a leader's approach to motivating, guiding, and empowering individuals within the institution. Leadership styles can vary widely, ranging from visionary and transformative to pragmatic and transactional, each characterized by distinct behaviors, attitudes, and communication patterns (Freeburg 2020). However, leadership in academic libraries is of paramount importance due to the unique challenges and opportunities inherent in these environments (Dinh, Caliskan, and Zhu 2021). Shal, Ghamrawi, and Naccache (2024) mention that library leaders serve as stewards of knowledge, responsible for curating collections, designing innovative services, and cultivating spaces conducive to learning and collaboration. Some of the leadership styles, according to Northouse (2021), have been defined below:

- Transformational leadership: Transformational leaders inspire and motivate their followers by articulating a compelling vision, fostering a sense of collective purpose, and empowering individuals to realize their full potential.
- Transactional leadership: Transactional leaders focus on the exchange of rewards and incentives in exchange for performance and compliance. They establish clear expectations, set goals, and provide feedback based on predetermined criteria. Transactional leaders excel in managing day-to-day operations and achieving short-term objectives but may struggle to inspire intrinsic motivation or foster long-term engagement.
- Laissez-faire leadership: Laissez-faire leaders adopt a hands-off approach, delegating authority and decision-making responsibilities to their followers. While this style can promote autonomy and creativity, it may also lead to ambiguity, lack of direction, and inefficiency if not accompanied by clear expectations and support mechanisms.
- Adaptive leadership: Adaptive leadership is a dynamic and responsive approach to leading organizations through complex challenges and uncertain environments. Unlike traditional forms of leadership that rely on maintaining stability and following established procedures, adaptive leadership emphasizes flexibility, resilience, and the ability to navigate change (Wilson 2020). At its core, adaptive leadership recognizes that many organizational problems are not technical in nature but rather adaptive challenges that require innovative solutions and new ways of thinking. According to Wong and Chan (2018), adaptive leaders demonstrate empathy and understanding toward others, creating a supportive and inclusive environment where diverse perspectives are valued

and respected. They exhibit courage and resilience in the face of adversity, willing to challenge the status quo, take calculated risks, and confront difficult truths. Adaptive leaders articulate a compelling vision for the future, inspiring others to embrace change and work toward common goals and aspirations.

Harisanty et al. (2022), however, observe that leadership styles profoundly influence organizational culture within academic libraries, shaping norms, values, and behaviors among staff and stakeholders. Transformational leaders, for instance, cultivate a culture of innovation, collaboration, and continuous learning that empower individuals to embrace change and adapt to evolving needs. In contrast, transactional leaders may foster a culture focused on achieving measurable outcomes and meeting performance targets, while laissez-faire leaders may promote autonomy and self-directed initiatives among staff (Shal, Ghamrawi, and Naccache 2024).

Unlike previous industrial revolutions, which focused primarily on mechanization, automation, and mass production, 5IR is characterized by the fusion of technologies, such as artificial intelligence (AI), blockchain, internet of things (IoT), and biotechnology, to drive innovation, disrupt traditional industries, and reshape societal structures (Bakar, 2023; Husin et al. 2023; Lubinga, Maramura, and Masiya 2023; Sanji, Behzadi, and Gomroki 2022; van Dun and Kumar 2023). Some of the key characteristics of 5IR include exponential technological growth, ubiquitous connectivity, data-driven decision-making, and the democratization of knowledge and information.

The 5IR poses significant implications for higher education and academic libraries, thereby reshaping the way knowledge is created, disseminated, and accessed. In the era of 5IR, Abata-Ebire, Adetayo, and Babarinde (2023) observe that higher education institutions face pressure to adapt their curricula, pedagogies, and learning environments to equip students with the skills and competencies needed to thrive in a rapidly changing world. Academic libraries, as key stakeholders in the knowledge ecosystem, must evolve their roles and services to meet the evolving needs of students, faculty, and researchers (Adjei 2023). This includes leveraging digital technologies to enhance access to resources, provide personalized learning experiences, and support interdisciplinary research collaborations.

With the advent of 5IR, academic libraries are likely to witness a significant shift toward digital collections (Echedom and Okuonghae 2021). This could involve digitizing existing print materials, acquiring more electronic resources such as e-books, e-journals, and digital archives, and investing in technologies for digital preservation (Oyetola et al. 2023) Additionally, libraries may explore opportunities for collaborative digitization projects with other institutions to enhance

access to rare and unique materials. Given the increasing emphasis on data-driven decision-making in the era of 5IR, academic libraries are likely to play a more prominent role in data management and analytics (Pinfield, Cox, and Smith 2014). 5IR technologies enable libraries to offer more personalized learning and research support services to users (Panda and Chakravarty 2022). This may include the development of AI-driven recommendation systems to suggest relevant resources based on user preferences and past interactions. Libraries could also implement virtual research assistance services that will allow users to interact with librarians remotely via chatbots or virtual assistants (Oyetola et al. 2023). Academic libraries, as integral components of the higher education ecosystem, are not immune to the disruptive forces unleashed by 5IR. Instead, they stand at the forefront of innovation, tasked with harnessing technological advancements to enhance user experiences, expand access to knowledge, and drive scholarly discovery (Masenya and Chisita 2022). Therefore, the following research objectives guided the study: (1) to determine the relationship between leadership styles and the successful adoption of 5IR, and (2) to determine challenges faced by academic libraries in adopting 5IR under different leadership styles.

The sections of this paper are organized as follows: first, a review of related literature aligned with the research objectives is presented, followed by an exposition of the methodological procedures employed in the study's execution. Then the findings and discussions derived from the study are presented. Finally, the paper presents the conclusions and the implications drawn from the study outcomes.

## Literature Review

The review explores the relationship between leadership styles and adoption of 5IR and the challenges faced by academic libraries in adopting 5IR under different leadership.

### Relationship Between Leadership Styles and the Successful Adoption of 5IR

In the era of 5IR, which is characterized by the convergence of digital technologies, AI, and cyber-physical systems, leadership within academic libraries plays a pivotal role in navigating the complexities of technological innovation and organizational change. The relationship between leadership styles and the successful adoption of 5IR is multifaceted, encompassing the ability of library leaders to inspire, empower, and guide their staff toward embracing transformative technologies and leveraging them to enhance library services, resources, and operations (Shal, Ghamrawi, and Naccache 2024; Tran, 2023). Going further, Husin et al. (2023) observe that transformational leadership is particularly conducive to the successful

adoption of 5IR in academic libraries. Transformational leaders inspire and motivate their staff by articulating a compelling vision for the future of the library, fostering a culture of innovation and continuous learning, and empowering individuals to embrace change and take ownership of their work. Donkor and Zhou (2020) find that transformational leaders cultivate an organizational culture that values experimentation, creativity, and risk-taking, essential ingredients for driving technological innovation and adapting to the challenges and opportunities presented by 5IR.

In the words of van Dun and Kumar (2023), transactional leadership that focuses on the exchange of rewards and incentives for performance and compliance plays a role in facilitating the adoption of 5IR in academic libraries, albeit to a lesser extent than transformational leadership. The authors argue that transactional leaders establish clear expectations, set goals, and provide rewards or recognition for meeting predetermined criteria, which can incentivize staff to embrace new technologies and adapt to changing workflows and processes. However, transactional leadership alone may not be sufficient to foster the creativity, flexibility, and resilience needed to fully leverage the transformative potential of 5IR in academic libraries (Noh 2023).

Tran (2023) mentions that laissez-faire leadership presents challenges in the successful adoption of 5IR in academic libraries. It was observed that while autonomy and empowerment are important for fostering innovation and creativity, a lack of direction, guidance, and support from leaders can lead to confusion, ambiguity, and resistance to change among staff. Al-Thawabiya et al. (2023) state that effective communication, collaboration, and accountability are essential for mitigating the potential drawbacks of laissez-faire leadership and ensuring that staff are equipped with the resources, skills, and support needed to embrace 5IR technologies and initiatives.

Samanta et al. (2023) agree that adaptive leadership is particularly well-suited to the challenges and opportunities presented by 5IR in academic libraries. The authors submit that adaptive leaders assess the readiness and capabilities of their staff and adjust their leadership approach accordingly toward fostering a culture of agility, experimentation, and continuous improvement. This further explains why academic libraries effectively navigate the complexities of technological innovation to anticipate and address challenges, as well as capitalize on opportunities to enhance library services and resources in the era of 5IR (Butt, Jabeen, and Zareef 2023). As a result, it can be observed that the relationship between leadership styles and the successful adoption of 5IR in academic libraries is complex and multifaceted, with transformational and adaptive leadership styles emerging as particularly conducive to fostering innovation, resilience, and organizational effectiveness in the face of technological disruption.

## Challenges Faced by Academic Libraries in Adopting 5IR Under Different Leadership Styles

5IR presents unprecedented opportunities and challenges for academic libraries to reshape the landscape of knowledge creation, dissemination, and access. This aligns with the argument of Noh (2023), who finds that effective leadership is essential for guiding libraries through this transformative era, yet different leadership styles present unique challenges in the adoption of 5IR technologies and initiatives. While transformational leadership fosters a culture of innovation and empowerment, it may present challenges in the adoption of 5IR technologies (Alayon, Frias, and Funclara 2023). Visionary leaders encounter resistance from staff who are hesitant to embrace change or lack the necessary skills and training to effectively utilize new technologies (Srirahayu, Anugrah, and Firdaus 2023). Additionally, Alayon, Frias, and Funclara (2023) observe that the pace of technological innovation outstrips the capacity of libraries to adapt, which leads to resource constraints and implementation challenges. Masenya and Chisita (2022) state that maintaining alignment between the library's strategic vision and the evolving needs of users and stakeholders requires ongoing communication, collaboration, and strategic planning.

Under transactional leadership, academic libraries face challenges related to resource allocation, performance management, and risk aversion. Donkor and Zhou (2020) state that transactional leaders prioritize short-term goals and outcomes over long-term strategic investments in 5IR technologies, leading to a lack of innovation and reluctance to experiment with new approaches. Additionally, the hierarchical nature of transactional leadership may stifle creativity and autonomy among staff, inhibiting their ability to adapt to changing technological landscapes. Furthermore, transactional leaders may struggle to incentivize and reward staff for embracing 5IR initiatives, leading to disengagement and resistance to change (van Dun and Kumar 2023). On the other hand, laissez-faire leadership, which is characterized by a hands-off approach and delegation of decision-making responsibilities, presents challenges in the adoption of 5IR technologies due to a lack of direction, guidance, and accountability. Without clear leadership and support, Barrot (2022) notes that librarians struggle to navigate the complexities of technological change, which leads to confusion, inefficiency, and missed opportunities. Additionally, the absence of strategic direction and oversight may result in fragmented or ad hoc implementation of 5IR initiatives, undermining the library's ability to achieve its goals and objectives (Van der Poll 2022).

Adaptive leadership, according to Butt, Jabeen, and Zareef (2023), helps academic libraries navigate the challenges of adopting 5IR technologies more effectively. However, adaptive leaders balance the need for agility and experimentation with the importance of maintaining stability and continuity in library operations. Furthermore, adaptive leaders navigate the complexities of organizational politics, stakeholder expectations, and resource constraints to ensure the successful implementation of 5IR initiatives. However, the challenges faced by academic libraries in adopting 5IR technologies vary depending on the leadership style employed within the organization (Husin et al. 2023). While transformational leadership may foster innovation and empowerment, it may also encounter resistance and resource constraints. Transactional leadership may prioritize short-term goals over long-term investments in 5IR, while laissez-faire leadership may lack direction and accountability (Aslam 2018). Adaptive leadership helps libraries navigate the challenges of 5IR more effectively but requires proactive communication, collaboration, and support from leaders (Lubinga, Maramura, and Masiya 2023, Safdar et al. 2023). Ultimately, by understanding the unique challenges associated with different leadership styles, academic libraries are required to develop strategies to overcome obstacles and embrace the transformative potential of 5IR to advance their mission and serve their communities more effectively.

## Methodology

The study employed a qualitative research design utilizing a scoping review of literature to examine leadership styles and the adoption of 5IR in libraries of higher education institutions. The databases of Google Scholar, ResearchGate, and Emerald were employed for the literature search. A search period of six months was selected to capture recent publications and ensure the relevance and timeliness of the review. The search period extends from the current date back six months. To ensure that the review encompasses recent developments and trends in the field, studies published within the specified timeframe were included.

Studies focusing on leadership styles and the adoption of 5IR in academic libraries were considered for inclusion. Only studies with full-text availability were included to facilitate thorough examination and analysis. Studies published before 2018 were excluded to prioritize recent research findings and trends. Studies not directly related to leadership styles or the adoption of 5IR in academic libraries were excluded. Data extraction and analysis were conducted using a systematic approach to identify relevant studies. Relevant keywords, such as “leadership styles” and “adoption of the 5th industrial revolution,” were used to search the



selected databases. Titles, abstracts, and keywords of retrieved studies were screened to identify potentially relevant articles.

A total of 38 items were retrieved from the initial database search. After removing duplicates and applying inclusion and exclusion criteria, 32 studies were deemed eligible for inclusion in the systematic review. Also, retrieved studies were screened based on inclusion and exclusion criteria to select eligible articles for further analysis. Full-text articles of selected studies were retrieved and reviewed to assess their suitability for inclusion in the systematic review. Key information from selected studies, including author(s), publication year, research methodology, key findings, and implications, was extracted using a standardized data extraction form. Finally, extracted data were synthesized and analyzed to identify common themes, patterns, and trends across the selected studies. Employing thematic analysis, findings were synthesized into a coherent narrative to provide insights into the current state of research, gaps in knowledge, and implications for practice and future research directions.

## Discussion

### Leadership Styles and Adoption of 5IR

The study on leadership styles and adoption of 5IR in libraries of higher education emphasizes that the connection between leadership styles and the successful integration of the 5IR within academic libraries is a nuanced and complex one. It is revealed in the literature that among the various leadership approaches, transformational leadership stands out as particularly effective in navigating the intricate landscape of technological advancement and organizational change (Shal, Ghamrawi, and Naccache 2024; Tran 2023). It is also evident from the findings that transformational leaders excel in inspiring and motivating their teams by painting a compelling vision for the future, fostering a culture of innovation, and empowering individuals to embrace change and take ownership of their roles (Donkor and Zhou 2020). However, transactional leadership, while not as impactful as transformational leadership, still contributes to the adoption of 5IR within academic libraries. The findings in the literature indicate that leaders of this style set clear expectations, establish goals, and offer rewards or recognition for meeting predefined criteria, which can encourage staff to embrace new technologies and adapt to evolving workflows (van Dun and Kumar 2023). However, transactional leadership's focus on short-term objectives may hinder the full exploitation of 5IR's transformative potential (Noh 2023).



## Challenges Faced by Academic Libraries in Adopting 5IR Under Different Leadership

The findings reveal that laissez-faire leadership presents challenges in effectively integrating 5IR into academic libraries. While autonomy and empowerment are essential for fostering innovation and creativity, a lack of guidance and support from leaders can lead to confusion, ambiguity, and resistance to change among staff (Al-Thawabiya et al. 2023; Tran 2023). Nevertheless, effective communication, collaboration, and accountability can help mitigate the negative effects of laissez-faire leadership and ensure that staff are equipped to embrace 5IR technologies and initiatives (Shal, Ghamwari, and Naccache 2024). Adaptive leadership emerges as highly suitable for addressing the challenges and opportunities presented by 5IR in academic libraries (Samanta, Rautaray, and Swain 2023). Adaptive leaders assess their team's readiness and capabilities and adjust their approach accordingly to achieve continuous improvement (Butt, Jabeen, and Zareef 2023). By effectively navigating the complexities of technological innovation, adaptive leaders anticipate and tackle challenges while capitalizing on opportunities to enhance library services and resources in the era of 5IR (Butt, Jabeen, and Zareef 2023).

It is also evident from the findings that the challenges faced by academic libraries in adopting 5IR under different leadership styles vary significantly. Transformational leadership may encounter resistance from staff, while transactional leadership may prioritize short-term gains over long-term innovation. Laissez-faire leadership may lack direction and accountability, hindering effective change management. On the other hand, adaptive leadership offers a balanced approach that can help libraries overcome these challenges more effectively (Husin et al. 2023). Therefore, effective leadership within academic libraries is crucial for navigating the complexities of technological innovation and organizational change brought about by 5IR. While each leadership style presents its own set of challenges, understanding these dynamics can empower library leaders to overcome obstacles and embrace 5IR's transformative potential. By fostering a culture of innovation, collaboration, and adaptability, academic libraries can position themselves as leaders in driving positive change in higher education, ultimately serving their communities more effectively in an increasingly digital world.

## Implications of the Study

The implications of the study for policy and practice in academic libraries are significant, as they shed light on the critical role of leadership styles in shaping the successful adoption of the 5IR technologies.

First, policymakers and library administrators should prioritize leadership development programs that cultivate transformational and adaptive leadership skills among librarians. These programs should focus on providing actual leadership training, experimentation, and rewarding innovation (Samanta, Rautaray, and Swain 2023), which are essential for navigating the complexities of technological innovation in the era of 5IR. Additionally, policies should support the recognition and promotion of librarians who demonstrate these leadership qualities and ensure that leadership positions are filled by individuals who can effectively drive organizational change and innovation (Tran 2023).

Second, libraries should strive to create an organizational culture that values experimentation, creativity, and collaboration. This can be achieved through policies that incentivize and reward innovative initiatives and promote a sense of ownership and accountability among staff (Wong and Chan 2018). In so doing, libraries can create an environment that is conducive to the successful adoption of 5IR technologies. Thirdly, policymakers and library administrators should allocate resources strategically to support the adoption of 5IR technologies (Shal, Ghamrawi, and Naccache 2024). This may involve investing in training and development programs to enhance librarians' skills in using new technologies, providing access to cutting-edge technologies and tools, and ensuring that there is adequate support and infrastructure in place to facilitate the implementation of 5IR initiatives. Additionally, policies should prioritize long-term investments in 5IR technologies, rather than focusing solely on short-term gains, to ensure that libraries remain at the forefront of technological innovation.

In practice, libraries should seek to collaborate with external partners, such as industry partners, academic institutions, and other libraries, to leverage their expertise and resources in adopting 5IR technologies. Policies should support the development of collaborative partnerships and provide frameworks for sharing knowledge, resources, and best practices (Butt, Jabeen, and Zareef 2023). Also, academic libraries can implement policies and practices that support the development of transformational and adaptive leadership capabilities among library leaders. This may involve providing leadership training and development opportunities toward building innovative leadership practices.

## Conclusion

The concept of adaptive leadership emerges as a dynamic and responsive approach to navigating change and complexity within organizations, particularly in the context of 5IR and its impact on academic libraries. Through a systematic review of literature, it becomes evident that adaptive leadership principles and characteristics play a critical role in addressing adaptive challenges, fostering innovation, and driving organizational effectiveness in the face of uncertainty and disruption.

Key findings highlight that adaptive leaders possess a unique set of characteristics, including flexibility, empathy, courage, vision, and collaboration, enabling them to navigate change and foster innovation within their organizations. These leaders diagnose underlying causes of complex challenges, intervene strategically to mobilize stakeholders, and create opportunities for reflection and learning to foster a culture of experimentation and continuous improvement. Additionally, adaptive leaders articulate a compelling vision for the future, inspiring others to embrace change and work toward common goals and aspirations.

Moreover, the relationship between leadership styles and the successful adoption of 5IR technologies in academic libraries underscores the importance of adaptive leadership in driving organizational transformation. While transformational, transactional, and laissez-faire leadership styles each present unique challenges and opportunities, adaptive leadership emerges as particularly well-suited to navigating the complexities of 5IR adoption, fostering resilience, flexibility, and proactive problem-solving. By embracing adaptive leadership principles and characteristics, academic libraries can navigate change, foster innovation, and drive organizational effectiveness in the digital age. As organizations continue to confront new and emerging challenges, adaptive leadership will remain essential for building resilience, fostering agility, and driving sustainable success in the era of 5IR and beyond.

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