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Woman's Empowerment Through Digital Leadership: Exploring How Artificial Intelligence (AI) Powered Tools Can Improve Managerial Decision-Making in Public Sectors of Pakistan

Hiba Syed[1], Ayaz Ul Haq[2], Aurangzeb Zulfiqar Khan*[3]

[1]PhD Scholar, Department of Public Administration, University of Karachi, Karachi, Sindh, Pakistan.

[2]CEO & Founder, Creative Business and Social Research, Sindh, Pakistan.

[3*]Professor, Department of Project Management & Supply Chain Management, Bahria Business School, Bahria University, Islamabad, Pakistan.

Corresponding author: auranzebzulfiqarkhan@gmail.com

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The rapid advancement of artificial intelligence (AI) and digital technologies is transforming leadership practices and organizational decision-making processes. In this context, digital leadership has emerged as a critical capability that enables organizations to effectively integrate advanced technologies while promoting inclusive leadership environments. This study examines the role of digital leadership and artificial intelligence adoption in enhancing women's empowerment and managerial decision-making in organizational contexts in Pakistan. A quantitative research design was employed, combining quantitative survey data with qualitative insights to provide a comprehensive understanding of the research problem. Primary data were collected from 273 women professionals through a structured questionnaire using purposive sampling. The proposed research model was analyzed using PLS-SEM. The results indicate that digital leadership significantly influences women's empowerment, artificial intelligence adoption, and managerial decision-making. Furthermore, both women's empowerment and AI adoption positively affect managerial decision-making ($\beta = 0.28$, $p < 0.01$; $\beta = 0.41$, $p < 0.001$), while AI adoption mediates the relationship between digital leadership and decision-making effectiveness ($\beta = 0.21$, $p < 0.01$). The findings highlight the importance of developing digital leadership capabilities and promoting access to AI technologies to empower women leaders and improve organizational decision-making processes. The study contributes to the literature on digital leadership, technology adoption, and gender empowerment while offering practical insights for organizations seeking to promote inclusive and technology-driven leadership environments.

1. Introduction

The fast development of digital technologies has altered the structure of organizations, managerial procedures, and leadership in various industries across the globe. Artificial intelligence (AI) has emerged as one of the most powerful sources of digital change in contemporary organizations, among the spectrum of technological innovations. AI technologies help organizations to process vast data, automate complicated processes, and increase the effectiveness of strategic decision-making, thus facilitating the performance of the organization as well as the competence of management. Along with the growing integration of AI-powered solutions by the organization, management methods are also moving towards more data-oriented and technologically comprehensive types of management, often called digital leadership (Gayathri et al., 2025).

Digital leadership is a form of leadership that implies the incorporation of modern innovations, data analytics, and creative technological functioning into organizational decision-making and strategic procedures. The more digitally competent the leaders are, the more they can use the technological tools to increase collaboration, innovation, and adaptability of their organizations in dynamic and fast-changing business conditions. As recent research shows, digital leadership is the key to organizational implementation of new and innovative tools such as AI and analytics databases, which subsequently enhances managerial decision-making (DM) and organizational performance (Hossain et al., 2025).

Meanwhile, the increased penetration of AI technologies into management has brought novel possibilities to make the workplace more inclusive and empower underrepresented populations, especially women. The liberation of females in the context of leadership roles has gained increasing relevance in the management research sphere because of the persisting and worldwide gender inequality in the field of leadership (Shah, 2024). Despite the advances made over time in gender equality campaigns, women are still diminished in managerial and executive positions in most sectors. Digital artificial intelligence devices could become the support of women leaders by providing them information-driven insights, less cognitive bias in DM, and a more adaptive workplace that allows for professional growth and development (Meharunisa et al., 2024). Managerial decisions can be enhanced with the assistance of AI technologies, which will help to increase information processing, provide better analytical capabilities and make predictions that will help leaders make more informed strategies. Studies have shown that in organizations that successfully apply AI technologies into their managerial process, there is better efficiency and allocation of resources and, most importantly, the overall execution of the association improves (Song et al., 2025).

Moreover, AI-related digital tools may be relevant in empowering women leaders by increasing their access to information, developing analytical skills, and offering them new leadership development opportunities. For example, the latest research indicates that AI-based technologies can contribute to improving the professional abilities of women, help them balance their working and personal lives, and engage in more successful leadership behaviors in the case of proper organizational support and digital infrastructure (Almheiri et al., 2025).

Nonetheless, even with the possible advantages of AI and online leadership, there are still serious challenges that need to be overcome to ensure gender equality in leadership positions, especially in developing economies. It is plausible to assume that women are still frequently exposed to structural, institutional, and socio-cultural barriers, which restrict their access to digital technologies and leadership. These might involve the lack of digital literacy, unequal access to technological resources, gender biases prevalent in organizations, and the inadequacy of institutional support systems for the professional growth of women. (Karim, 2024).

The situation is especially acute in developing nations, such as Pakistan, where socio-cultural expectations, the lack of technological infrastructure, and uneven access to digital education and opportunities to enhance and improve the level of professional development are especially pronounced. Therefore, the exploration of the possibility of women leaders being empowered by DL and AI to enhance the process of managerial DM is a valuable research field that could be relevant to both organizational performance and gender equality programs. Thus, this paper explores how digital leadership and AI-driven technologies help to empower women and improve managerial DM, particularly in the organizational context in Pakistan.

Although the issue of gender equality in leadership has long held a high level of significance and concern, women remain grossly underrepresented in managerial and superior roles across the globe. The enormous interest in, as well as current rapid advancements of AI, has also changed the way managers conduct their businesses and the way they make decisions within an organization. Nevertheless, the advantages of AI applications are not equally shared with all the members of the organization, as women are frequently blocked from accessing digital technologies and the chances of gaining technological training (Karim, 2024).

Furthermore, current studies have shown that gender differences in technology adoption and digital literacy have the potential to undermine the capacity of women to fully engage in technologically oriented leadership (Song et al., 2025). Though there is some, albeit limited, literature that evaluates the effect of AI on OP and the adoption of technology, comparatively fewer studies have been conducted to examine how AI-based solutions and digital acts of leadership can assist women specifically with regard to managerial DM. Moreover, empirical studies that investigate the synergistic interrelationship between digital leadership, AI adoption, female empowerment, and managerial DM in organizational settings have not been conducted in developing nations such as Pakistan. Therefore, it is necessary to fill this research gap to understand more about how AI-based digital leadership can empower women and enhance managerial DM within contemporary organizations.

The study analyzes the opportunities to use digital leadership and artificial intelligence (AI) technologies to empower female leaders and improve the DM process of managers within an organizational setting. Specifically, the research focuses on determining how digital leadership influences managerial decision-making in any organization in the public sector and how it affects the empowerment of women. It also examines the interconnection between digital leadership and the adoption of AI and evaluates the impact of

female empowerment in managerial decision-making. Besides, the research examines the direct impact of AI adoption on managerial decision-making. Last, it analyzes the mediating effect of AI adoption in DL and organizational DM relationships, hence giving a comprehensive view of the interaction between technological and leadership variables to enhance organizational performance.

This research paper is included in the body of subject literature since it integrates the elements of modern authority, the use of AI, female empowerment, and decision-making among managers into a single conceptual framework. The findings show that DL plays a necessary role in AI adoption and empowering women in the leadership environment. Practically, it is advised by the study that the organizations are required to intensify the digital leadership and avail AI technologies, and women professionals should be offered the chance of learning digital skills from the perspective of facilitating inclusive leadership and making optimal managerial decisions in the new era.

2. Literature Review

2.1 Digital Leadership in the Era of Artificial Intelligence

The fast development of digital technologies has actually changed the essence of leadership and managerial practices in contemporary organizations. With the growing penetration of AI, data analytics, and digital platforms in the work processes of organizations, the leadership styles have changed and started to focus on the achievement of technological competence, digital transformation, and optimizing the use of data in the DM process. This new leadership concept is traditionally known as digital leadership and entails strengthening the capacity of leaders and managers to use wireless technologies as a means of improving organizational performance, innovation, and strategic DM (Sawy et al., 2020; Sousa & Rocha, 2019).

Digital leadership is especially significant in a setting where organizations experience technological disruptions and rapid changes. Due to their strong digital competencies, such leaders will be in a better position to mediate technological acceptance, foster organizational learning, and develop innovation-oriented cultures that can support the online transformation initiatives (Kane et al., 2019; Vial, 2021). Studies have also shown that virtual direction has helped organizations incorporate the use of advanced tools such as AI, machine learning, and big data analytics in the managerial processes, consequently improving the agility and effectiveness of organizational DM (Nadkarni & Prugl, 2021; Verhoef et al., 2021).

Moreover, digital leadership is vital in determining the process of organizational adoption and use of AI-based decision-support systems. AI technologies enable leaders to analyze complex data, foresee market trends, and streamline the strategic choice processes, which was previously unfeasible through the traditional managerial strategies (Dwivedi et al., 2021; Haefner et al., 2021). Therefore, digital leadership is seen as a prominent force behind the adoption of AI and digital transformation in organizations.

Along with technological integration, digital leadership focuses on inclusiveness and empowerment in the organizational setting. Digital transformation leaders tend to provide possibilities for employees to acquire digital skills, gain access to technological resources,

and engage in innovation processes. These environments can help in increasing the empowerment of professionals, especially those traditionally underrepresented in organizations, including women in leadership positions (Shrestha et al., 2021; Sousa & Rocha, 2019). Because of the increased and significant relevance of digital leadership in contemporary organizations, an examination of its influence on leadership empowerment and managerial DM has become an important theme for research.

2.2 Artificial Intelligence Adoption in Organizational Decision-Making

I have become a disruptive technology that contributes radically to the decision-making processes of managers. AI makes use of machine learning algorithms, predictive analytics, and automated data processing systems to inform strategic DM based on insights derived from large datasets (Davenport et al., 2020; Dwivedi et al., 2021). With the growing density, unpredictability and data-richness of the environment in which organizations today increasingly operate, AI systems allow leaders to make better and more informed decisions by reducing the uncertainty level and increasing analytical accuracy.

The introduction of AI in organizations has been linked to various benefits, such as improving structural efficiency, strategic planning, and forecasting precision. The decision-support systems using AI enable managers to analyze and assess numerous scenarios, spot patterns in massive data sets, and streamline the process of allocating resources (Ransbotham et al., 2020; Haefner et al., 2021). The capabilities allow establishments to make quicker and more efficient decisions in the competitive and fast-changing markets.

Recent researchers also emphasize the fact that AI technologies have the potential to minimize cognitive biases in DM processes by offering objective and data-driven suggestions. Personal experience, intuition, perception, bias and organizational politics often tend to find their way into traditional managerial DM, which might result in less effective strategic outcomes. Analytical tools based on AI, on the other hand, can help reduce these influences by providing evidence-based suggestions that can help more individuals make clearer and more reasonable decisions (Brynjolfsson & McElheran, 2019; Shrestha et al., 2021).

Nevertheless, effective adoption of AI would necessitate enabling leadership behavior and organizational preparedness. To successfully implement AI technologies into managerial processes, the leaders should have digital competencies and a strategic vision. Organizations might not be able to adopt AI systems or exploit their full potential without the proper support of leaders (Dwivedi et al., 2021; Verhoef et al., 2021). Digital leadership is, therefore, critical in guiding the adoption of AI and ensuring the achievement of optimal benefits of AI to management DM.

2.3 Women's Empowerment in Leadership

The theme of gender diversity in leadership has been gaining momentum in management research and organization policy debates in the last 10 years. Various researchers have proven that as diverse gender representation in the leadership of an organization increases, so does the degree of innovation, financial performance, and the inclusivity of the DM process (Post & Byron, 2015; Hoobler et al., 2018).

Despite these advantages, women remain very underrepresented in managerial and executive positions in most spheres worldwide. Women still do not have equal access to leadership opportunities and career growth due to structural inequalities, gender stereotypes, and socio-cultural norms (Dimitrova-Grajzl et al., 2022). These obstacles tend to be more significant in developing nations where women usually also encounter additional problems, such as a lack of access to education, technologies, and professional contacts.

Empowerment of women in leadership entails improving the capacity of women to be part of the process of making decisions, gaining access to leadership roles and responsibilities, and exerting authority and influence in the organizational setting. Empowerment has multiple dimensions, which include access to information, professional autonomy, leadership training, and institutional support (Kabeer, 2021; Tremmel and Wahl, 2023). When organizations establish conducive environments that foster gender equality and leadership, there are high chances of women providing useful input in strategic DM and organizational innovations.

Digital technologies, such as AI and digital platforms, can be used to enhance the empowerment of women by making more information, professional training, and networking opportunities available to them. With the help of digital tools, flexible working practices can also be facilitated, which allow women the possibility to strike the right balance between their work and family life (Kane et al., 2019; Tremmel & Wahl, 2023). But one of the most significant challenges that organizations face in making the most out of the potential of digital leadership and AI technologies in the empowerment of women is providing equitable access to digital resources.

2.4 AI-Enabled Leadership and Managerial Decision-Making

One of the key roles of leadership is managerial decision-making that makes a major contribution to the performance of the organization and its strategies. Effective DM assumes that one is able to analyze and assess complex information and predict possible risks and opportunities in a timely manner. As the nature of the organizational environment becomes more complicated, challenging and unpredictable, and as larger pools of data need to be considered, conventional DM methods are not always adequate to handle the amount of data available and the dynamism of the market environment (Brynjolfsson & McElheran, 2019; Dwivedi et al., 2021).

AI technologies are a potent instrument that positively influences the DM of managers by increasing the speed of data analysis and prediction potential, as well as the process of strategic planning. AI-based systems can analyze and assess vast amounts of data within a short period, discovering behavioral patterns and trends and providing forecasting information that assists in making evidence-based decisions (Ransbotham et al., 2020; Haefner et al., 2021). Consequently, companies that incorporate AI technologies into leadership processes tend to have comparatively higher operational efficiency levels and a competitive edge.

Along with the increased accuracy of decisions, AI technologies might also promote the inclusion practices in leadership by lessening biases possibly present during the

conventional DM processes. Transparency and objectivity can also be enhanced by an algorithmic decision-support system, which is based on data-driven analysis, excluding subjective judgment (Shrestha et al., 2021; Brynjolfsson & McElheran, 2019). This feature can be especially useful in increasing gender equality in the leadership context, as unconscious biases can affect decisions relating to performance appraisal and promotion.

Nonetheless, AI-based DM can be effective only with the help of leadership skills and culture. Leaders must be able to comprehend AI-created insights and apply technological suggestions to strategy and decisions, and make certain that AI systems are utilized ethically and responsibly (Dwivedi et al., 2021; Verhoff et al., 2021). Consequently, the phenomenon of digital leadership and the introduction of AI are tightly linked to the influence on the DM process of the contemporary managerial system.

2.5 Theoretical Foundations

The present work incorporates three theoretical perspectives in its explanation of the relationship of digital leadership, the adoption of AI, female empowerment, and managerial DM.

2.5.1 Human Capital Theory

The Human Capital Theory proposes that there should be investment in knowledge, skills, and technological capabilities, which improve individual productivity and organizational performance. This theory claims that those leaders who enhance their digital competencies and technological skills will be able to increase their readiness to work with such sophisticated tools as AI and make strategic decisions (Becker, 1993; Crook et al., 2011; Esho & Verhoef, 2020). Digital leadership is thus another significant dimension of human capital that helps leaders to use technological advancements to promote managerial performance.

2.5.2 Technology Acceptance Model

TAM explains the ways in which people accept and use new technologies in relation to their perceived usefulness and the perceived ease of use (Davis, 1989). Leaders are more inclined to adopt and apply AI technologies in managerial practices when they develop a positive perception of these technologies and come to regard them as helpful for improving the quality of decision-making and enhancing organizational performance (Venkatesh et al., 2012; Marikyan & Papagiannidis, 2025). Digital leadership, in turn, can shape the perceptions about the usefulness of technologies and contribute to their acceptance within the organization.

2.5.3 Social Exchange Theory

According to this theory, the provision of social support and access to organizational resources affects the attitudes, behavior, and commitment of employees. Employees are also more likely to respond positively and become more productive, engage more, and take part more actively in the DM processes when organizations offer them digital tools, leadership development opportunities, and technological training programs (Cropanzano et al., 2017; Blau, 1964; Ahmad et al., 2023). Applying this research, digital leadership and AI-enablers

can help empower women by making the technology available in the form of access to technological options that would help them become more effective leaders.

2.6 Hypotheses Development

Based on the above theoretical frameworks, the following hypotheses are proposed.

H1: Digital leadership has a positive effect on managerial decision-making.

H2: Digital leadership has a positive effect on women's empowerment.

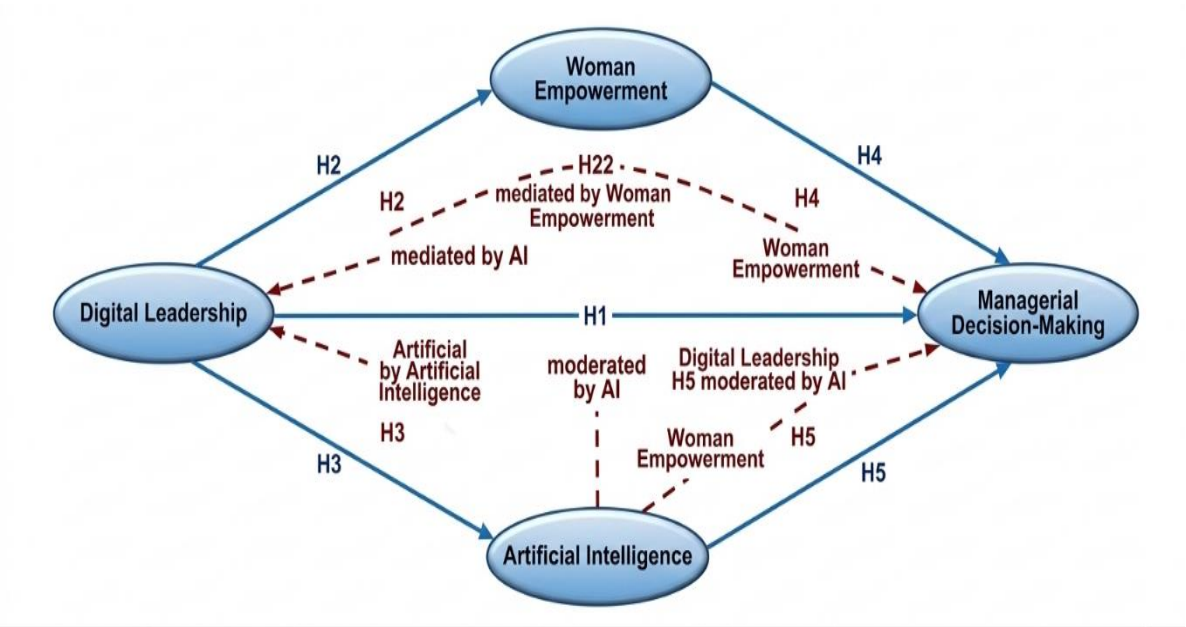
H3: Digital leadership has a positive effect on the adoption of artificial intelligence systems.

H4: Women's empowerment has a positive effect on managerial decision-making.

H5:AI adoption has a positive effect on managerial decision-making.

H6:AI adoption mediates the relationship between digital leadership and managerial decision-making.

Figure No 1: Conceptual model



3. Methodology

This paper employs a quantitative research design in that it seeks to establish the relationships among digital leadership, AI adoption, women's empowerment and managerial DM in an organizational setting. The quantitative approach is considered more appropriate because it enables a researcher to integrate quantitative data, giving a more detailed explanation of complex organizational phenomena. The quantitative component of this study provided the opportunity to examine the hypothesized associations between the variables with the help of the statistical modeling tools.

The research utilized the cross-sectional survey method of collecting primary data from women in managerial, professional or leadership positions in Pakistan. Management and technology adoption research frequently make use of cross-sectional survey designs since the latter enable the researcher to record perceptions and behavioral intentions of respondents at any given point in time (Hair et al., 2022; Saunders et al., 2023). The intended target group for this paper comprised women who have been exposed to digital resources and are actively engaged in the public education sector in Pakistan. This included faculty members of both permanent and visiting status, such as Professors, Associate Professors, Assistant Professors, and Lecturers, who are involved in teaching, administration, or leadership roles within their institutions. Since the study is exploratory in nature and needs to identify the respondents who have the required technological exposure, the purposive sampling method was employed to identify the respondents who can contribute by providing valuable information about the role of digital leadership and AI in making managerial decisions. Purposive sampling is considered to be an appropriate method when a research study involves dealing with particular groups of professionals who have pertinent knowledge or experiences (Etikan et al., 2016; Saunders et al., 2023). The Educational sectors are public sector Universities. The sample size was 273, which was collected from educational sectors in Pakistan.

A structured questionnaire was used to gather data from women professionals that distributed online as well as offline and was divided into two sections. In the first section, demographic information which includes their age, employment status, and professional background. The second section measured the key constructs of the study, that is, digital leadership, women's empowerment, adoption of AI, and managerial decision making. The measurement items were based on the validated scales used in prior studies on leadership, technology adoption, and organizational behavior and were modified to ensure content validity and conceptual consistency (Hair et al., 2022; Venkatesh et al., 2013). The respondents were asked to respond based on their degree of agreement with each statement on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Likert-scale measurement is a powerful tool that is often applicable to behavioral research studies since it measures subjective perceptions and attitudes in a more organized and quantifiable way (Saunders et al., 2023; Hair et al., 2022).

The sample size (N=273) was believed to be adequate in Partial Least Squares Structural Equation Modeling (PLS-SEM), which is usually applied in exploratory research and models and is appropriate for studies having such variable relationships. PLS-SEM is acknowledged as having the ability to deliver credible results despite relatively limited sample sizes in case the research model includes several constructs and predictive associations (Hair et al., 2013; Sarstedt et al., 2021). Before the structural analysis was carried out, reliability and internal consistency of the measurement scales were determined using Cronbach's alpha coefficients. The findings showed acceptable levels of reliability of all constructs, with Cronbach's alpha exceeding the acceptable cut-off level of 0.70, implying that the measurement items were always able to measure the intended constructs. In fact, the reliability coefficients were 0.88 (digital leadership), 0.85 (women empowerment), 0.90 (AI adoption), and 0.87 (managerial DM), which indicate strong internal consistency of the scale items.

Table No 1: Questionnaire Instrumentation (Measurement Scale: 5-point Likert (1 = Strongly Disagree, 5 = Strongly Agree)

Construct	Number of Items	Source / Scale	Cronbach's Alpha (α)
Digital Leadership	6	Munsamy & Lee-King (2021)	0.88
Women Empowerment	5	Malhotra, Schuler & Boender (2002)	0.85
Artificial Intelligence Adoption	6	Raimo et al. (2021); ul Haq & Suki (2024)	0.90
Managerial Decision-Making	5	Vroom & Yetton (1973)	0.87

Digital Leadership, Women's Empowerment, Artificial Intelligence Adoption, and Managerial Decision-Making were the main constructs measured by the study using a structured questionnaire. To guarantee validity and reliability, the questionnaire items were modified from previously approved scales. A 6-item scale created by Munsamy and Lee-King (2021) was used for digital leadership, while a 5-item scale modified from Malhotra, Schuler &Boender (2002) was used to measure women's empowerment. A 6-item scale of Raimo et al. (2021) and ul Haq and Suki (2024) was used to assess artificial intelligence adoption, while a 5-item scale based on Vroom &Yetton's (1973) leadership decision-making model was used to assess managerial decision-making.

4. Results and Analysis

Table No 2: Pilot Testing (n=100)

Reliability Statistics			
Variables	**Cronbach's Alpha**	**Cronbach's Alpha Based on Standardized Items**	**N of Items**
Digital Leadership	.921	.922	6
Woman Empowerment	.774	.782	5
Artificial Intelligence Adoption	.916	.917	6
Managerial Decision-Making	.774	.783	5

The reliability analysis shows that all constructs have acceptable to excellent internal consistency. Digital Leadership (0.921) and AI Adoption (0.916) demonstrate excellent reliability, while Women Empowerment (0.774) and Managerial Decision-Making (0.774) are acceptable. Overall, the questionnaire is reliable and suitable for use with the 100 participants.

Table No 3: Demographic Profile of Respondents (n = 273)

Variable	Category	No of Participants	Percentage (%)
Age	22–30	68	24.91
	31–40	96	35.16
	41–50	74	27.11
	50+	35	12.82
Employment Status	Permanent	167	61.17
	Visiting	106	38.82

Table 3 shows the demographic features of the respondents that were used in the study. The demographic profile indicates that the sample comprises women with different degrees of professional experience and exposure to organizational processes. The largest group of participants is aged 31–40 years (35%), followed by 41–50 years (27%) and 22–30 years (25%). The smallest group is 50+ years (13%). This suggests that the majority of participants are young to middle-aged adults. permanent employees (61.17%), whereas visiting employees constitute 38.82%.

Table No 4: Reliability Analysis

Construct	Number of Items	Cronbach's Alpha
Digital Leadership	6	0.88
Women Empowerment	5	0.85
Artificial Intelligence Adoption	6	0.90
Managerial Decision-Making	5	0.87

Table 4 shows the reliability findings of the constructs to be incorporated in the research model. All the alphas of the constructs have been found to be higher than the generally accepted alpha of 0.70, which indicates that there is an acceptable level of internal consistency within the measurement scales. These findings affirm that the measurement instruments used in the study are sound and can be used in further statistical analysis. The reliability scores are high, implying that the items are valid to measure the intended constructs and give the same response among the subjects.

Table No 5: Descriptive Statistics

Construct	Mean	Standard Deviation
Digital Leadership	3.98	0.76
Women Empowerment	3.85	0.72
Artificial Intelligence Adoption	3.92	0.69
Managerial Decision-Making	4.02	0.70

Table 5 shows the mean and standard deviation of the most important constructs being studied. The findings signify that managerial DM had the greatest mean score (M = 4.02). The mean score in digital leadership was also quite high (M = 3.98). In a similar way, the mean of AI adoption was 3.92, and women's empowerment was 3.85. The standard deviations of the constructs reveal a high degree of uniformity between the perceptions of the respondents. By and large, the descriptive statistics indicate that the participants acknowledged the increasing role of DL and AI technologies in the process of influencing the managerial DM process and empowering leaders.

Table No 6: Key Barriers to AI-Enabled Women's Leadership

Barrier	Percentage (%)
Limited Digital Literacy	35
Socio-Cultural Constraints	30
Lack of Access to AI Technologies	25
Low Awareness of Algorithmic Bias	10

Figure No 1: Barrier of AI Adoption

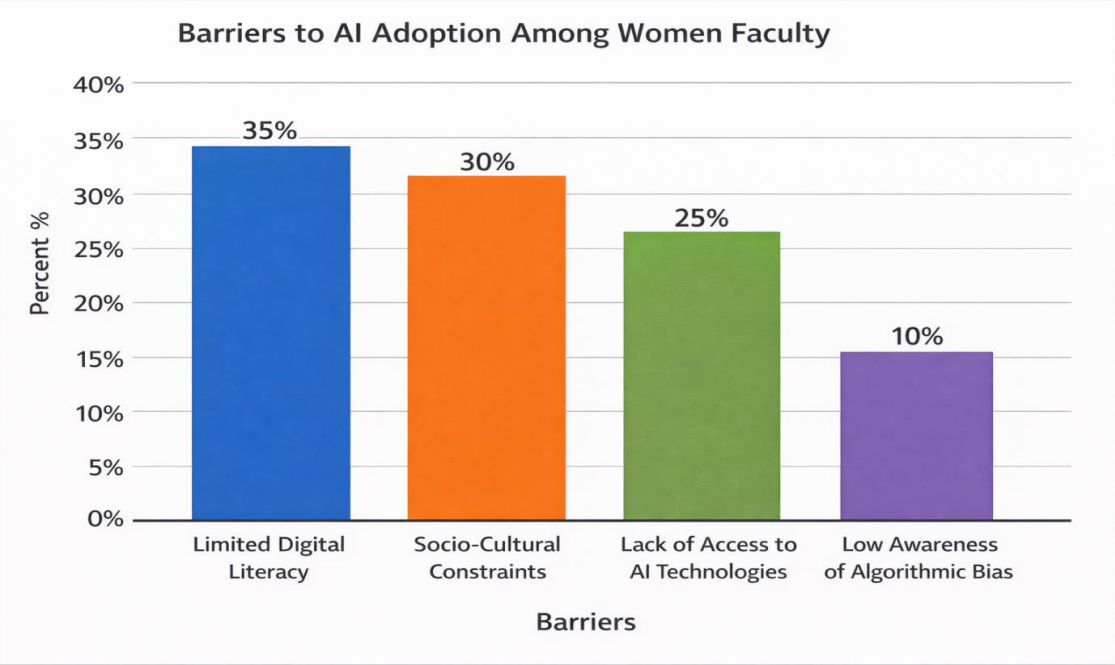


Table 6 shows the significant obstacles that impact the presence of women in AI-based leadership positions. The results show that the problem of limited digital literacy is the most important, with 35% of the respondents claiming it. The second most prominent barrier was the socio-cultural restraint, with a respondent count of 30%. A quarter of all respondents pointed out the absence of AI technologies. The lowest percentage of respondents (10%) also indicated low awareness of algorithmic bias as constituting a hurdle. These results demonstrate the significance of digital educational programs, institutional assistance, and technology in ensuring that women join and benefit from AI-driven leadership platforms.

Table No 7: Structural Model Results

Hypothesis	Relationship	(β)	t	p	Decision
H1	Digital Leadership → Managerial Decision-Making	0.32	4.18	0.000	Accepted
H2	Digital Leadership → Women Empowerment	0.45	6.72	0.000	Accepted
H3	Digital Leadership → AI Adoption	0.51	7.89	0.000	Accepted
H4	Women Empowerment → Managerial Decision-Making	0.28	3.65	0.001	Accepted
H5	AI Adoption → Managerial Decision-Making	0.41	5.92	0.000	Accepted
H6	Digital Leadership → AI Adoption → Managerial Decision-Making	0.21	3.47	0.001	Accepted

The findings on structural model analysis are provided in Table 7. The findings reveal that digital leadership strongly positively influences managerial DM (β= 0.32, $p < 0.001$), which also states that the stronger digital leadership practices are practiced in an organization, the more successful the managerial DM processes are. Therefore, H1 is supported. It also shows that digital leadership has a considerable impact on the empowerment of women (β = 0.45, p 0.001), validating H2. On the same note, digital leadership is positively related to AI adoption (β = 0.51 and $p < 0.001$); thus, H3 is supported.

The results also reveal that the empowerment of women has a positive impact on the managerial DM (β = 0.28, $p < 0.01$). This finding implies that when women leaders are empowered and given the opportunity to be involved in organizational DM, they can positively influence management outcomes. Thus, H4 is supported. The use of AI is also positively correlated with managerial DM (β = 0.41, $p < 0.001$), meaning that H5 is supported. Lastly, the mediation analysis shows that the linkage between digital leadership and managerial DM is mediated by the use of AI (β = 0.21, $p < 0.01$). This result implies that digital leadership has an indirect positive impact on managerial DM by enabling the use and implementation of AI technologies in organizations. Accordingly, H6 is supported.

4.1 Discussion

The outcomes of this research can be treasured in understanding the role of digital leadership and the use of AI in empowering women and helping them make managerial decisions in the organization. The findings point to the fact that digital leadership has a

significant impact on managerial DM and that leaders with digital competencies can use innovative tools and data-driven information to contribute to strategic decisions more effectively. This observation agrees with the existing studies that indicate digital leadership helps organizations incorporate high-level technologies and analytics in DM, thus enhancing the quality of decisions and organizational performance (Nadkarni and Pruglie, 2021; Verhoef et al., 2021). Applying the concept of Human Capital Theory, the ability of leaders to gain digital skills and technological capabilities makes them more productive and effective, which, in turn, leads to better outcomes in organizational DM (Crook et al., 2020; Ahmad et al., 2023).

Another strength of the results is the high positive correlation between digital leadership and women's empowerment. This implies that digital-based leadership environments provide opportunities to women to use technological resources, leadership development, and DM. These results align with empirical work that suggest that the structural barriers can be minimized through inclusive approaches to digital leadership, which help to open up gender diversity in the occupational domain (Eagly & Heilman, 2023; Sousa & Rocha, 2021). Social Exchange Theory also proposes that as organizations provide favorable environments, digital resources, and leadership opportunities, individuals will respond by engaging in increased participation and involvement in organizational DM (Cropanzano et al., 2022).

The other important outcome of the research is that DL has a massive impact on the adoption of AI. It means that those leaders who espouse technological innovation and digital change have more chances of encouraging the introduction of AI tools into the organization's process infrastructure. Previous studies likewise point to the fact that virtual direction is a key factor in technological adoption, as it leads to the establishment of innovation-focused cultures and encourages technological experimentation (Dwivedi et al., 2021; Kane et al., 2021). The findings are also consistent with the Technology Acceptance Model, which states that the support of the leader and the perceived utility of the technology have a momentous impact on the execution of new digital systems in the organization (Kabeer, 2021; Venkatesh et al., 2020).

The results furthermore indicate that the empowerment of women has a positive impact on the DM process of the management. Strategic DM and organization problem-solving by leaders are better achieved when leaders are empowered, have access to information, and are supported by the organization. Similar results have been obtained in previous research, which revealed that gender-diverse teams of leaders improve the quality of decisions by integrating different viewpoints and enhancing strategic debates (Hoobler et al., 2020; Tremmel & Wahl, 2023). These results support the empowerment of women in leadership frameworks to have more comprehensive and functional DM in the organization.

The implementation of AI was also observed to have a strong constructive impression on managerial DM. This finding implies that AI-powered analytics and decision-support systems help leaders handle massive amounts of data, determine trends, and derive predictive analytics that enhance decision accuracy. Recent studies also provide similar conclusions that AI technologies can improve the quality of DM by managers, making them less uncertain and

more evidence-based (Brynjolfsson & McElheran, 2021; Ransbotham et al., 2020). Therefore, the Technology Acceptance Model states that the better managers view AI applications as useful and simple to use, the greater the chances they will implement these technologies in the strategic DM process.

Finally, the results of the mediation indicate that the application of AI moderates the linkage between digital leadership and managerial DM. It implies that, in an indirect way, digital leadership improves DM by encouraging the utilization and effective implementation of AI technologies in companies. The finding is in line with accessible literature emphasizing leadership roles in converting technological possibilities into structured organizational outputs (Dwivedi et al., 2021; Verhoef et al., 2021). All in all, the evidence points to the fact that digital leadership has become one of the primary sources of technological innovation, empowerment of women, and data-driven DM in modern organizations.

5. Conclusion

This paper analyzed how digital leadership and the use of AI can help to empower women and improve their managerial DM process. The results suggest that digital leadership has a big impact on empowering women, AI adoption, and managerial decision-making. It has also been shown that the relationship between digital leadership and the effectiveness of DM is mediated by the adoption of AI. In general, the paper highlights the need to implement digital leadership capabilities and AI technologies to empower women leaders and enhance managerial decision-making that is grounded in data from contemporary organizations.

5.1 Implications

This research has theoretical and practical implications that are visible in its findings. Theoretically, the research will add to the literature because it will incorporate the application of digital leadership, AI adoption, empowering women, and managerial DM into a single framework. The results correlate with the Human Capital Theory, the Technology Acceptance Model, and the Social Exchange Theory.

Practically, the findings presuppose that the organizations need to invest in digital leadership development, AI infrastructure, and digital skills training of women professionals. Such a practice can assist organizations in adopting the inclusive leadership model, making better managerial decisions and performance, and, in the era of digital transformation, enable them to deliver closer results.

5.2 Limitations and Future Research

This study has multiple limitations, even though it contributed to them. Firstly, the study was founded on quite a small number of respondents; thus, it may limit the generalization of the findings to the general population. Second, it was a cross-sectional study, which only represents the perceptions of the digital leadership and AI adoption at one point in time and does not consider the aspects and effects in the long term. Third, the data was gathered primarily among women professionals, and this might not reflect gender bias.

Other researchers can also extend the generalizability of the research in the future by considering other industries and geographical locations. Longitudinal studies can also be

taken into consideration to examine the role of digital leadership and AI implementation in the empowerment of women, as well as their DM during different time frames. In addition, future studies can address the other mediating or moderating variables, including organizational culture, digital capabilities, or technological preparedness, to have a deeper understanding of how digital leadership and AI technologies act on managerial performance.

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