Journal of Intelligent System and Applied Data Science (JISADS)

Journal homepage : https://www.jisads.com
ISSN (2974-9840) Online

AI AND WOMEN'S LEADERSHIP IN EDUCATION: A SYSTEMATIC LITERATURE REVIEW WITH A FOCUS ON THE PALESTINIAN CONTEXT

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ABSTRACT

This review outlines how Artificial Intelligence (AI) can enable women's leadership in education through strengthening decision-making, minimizing administrative load, and enhancing inclusive governance. It also identifies key structural barriers in fragile contexts, such as Palestine, as well as it offers actionable and practical recommendations for gender-sensitive AI integration. This paper uses a systematic literature review methodology guided by the PRISMA framework to sift through and ensure the quality of the data gathered. This study analyzes 23 peer-reviewed sources published between 2015-2025 in both English and Arabic. The review focused on identifying both the enablers and the obstacles to the implementation of gender sensitive AI. This paper does this by synthesizing equity and inclusion-driven frameworks for AI adoption. The Review also found that AI can serve as a tool for inclusive leadership, especially when it is embedded in participatory and culturally sensitive AI systems. However, without legal policy changes and capacity building for women on AI-driven leadership models, AI poses the risk of expanding the digital and gender divide.

Keywords: Artificial intelligence, women's leadership, educational equity, Palestine, fragile contexts

1. INTRODUCTION

The use of AI in educational systems is revolutionizing institutional leadership paradigms, decision-making methodologies, and pedagogical frameworks worldwide. With the advancement of educational technologies, it becomes obvious that the confluence of AI and women's leadership in education hasn't been studied sufficiently, particularly in fragile and conflict-affected regions like Palestine and the wider Middle East and North Africa (MENA) [1]. Even a significant impact. AI provides an important potential to transfer educational leadership by supporting data-informed decision-making and promoting administrative efficiency. However, its adoption remains uneven, especially regarding gender inclusion. Without ethical and participatory frameworks. AI risks enhancing existing inequalities rather than mitigating them.

In the Palestinian context, women educational leaders operate within challenging socio-political conditions caused by occupation and fragmented digital infrastructure. Despite these obstacles, many have illustrated resilience and innovation in advancing inclusive education and promoting digital transformation. Yet, the limited affordability of Arabic-language AI tools and training programs continues to hinder women's access to AI-driven leadership opportunities.

The problem when it comes to the gendered aspect of AI is that the AI adoption is inconsistent, where AI has the potential to foster inclusive leadership by mitigating inequities, yet it is also capable of perpetuating biases, especially if it is not regulated by ethical, participatory frameworks [3]. This contradiction is something women educational leaders should be aware of, because the support of AI has both advantages and disadvantages, and

it all depends on how you use it. In the Palestinian context, women's educational leadership skills were acquired in a complex environment of the occupation's rule and poor digital infrastructure, where Women leaders in Palestine have overcome many difficulties such as the occupation's movement restrictions and societal Traditions that force women into a certain category, Palestinian women have fought against this by fighting for sustainable education for students, call for innovation, and inclusivity while facing the rooted institutional and cultural issues. For instance, a study has indicated that there aren't adequate AI technologies that are made to suit local requirements or work well in Arabic-speaking places, which in turn, limits Women from receiving AI training and jobs that include making decisions in both the tech and education fields. [4]

On the regional level, countries like Jordan, Lebanon, and Egypt have commenced AI-driven projects, but many of them don't consider gender and women's integration in decision-making processes [5]. This matter points out how algorithmic systems are formed without taking the inputs of marginalized groups, which might lead to biased results that mainly affect disadvantaged groups. [6].

In areas such as Palestine, AI has a higher opportunity of either assessing or hurting women leaders. Assume AI isn't formed without considering the ethical use, and that these data systems aren't given the tools they need to succeed. In this case, technology may contribute to the rising inequality gap rather than reducing it [7].

This paper seeks to examine the transformative potential of AI in advancing women's educational leadership in fragile contexts. It addresses the following research questions:

1. How can AI technologies support women's educational leadership in fragile contexts?

2. What are the main barriers preventing equitable AI implementation in educational leadership?

3. What are the most highlighted policies and actionable recommendations locally and globally that could guarantee the participation of women educational leaders and integrate their voices in the design of AI?

This review will employ a literature review methodology that uses the PRISMA Model to filter the studies. This study analyzes 23 peer-reviewed sources published between 2015 and 2025, encompassing both English and Arabic literature. This review contributes to the emerging discourse on AI and gender equity in education.

2. LITERATURE REVIEW

This paper reviews literature that highlights the intersection of artificial intelligence, women's educational leadership, and gender equity to reveal a complex set of opportunities and challenges that change the meaning of women's leadership in this new era of AI.

2.1. AI and Leadership

Previous Research on AI applications in educational leadership found that AI can support institutional improvement, where one of the key areas that was developed was administrative automation, which was one of the most immediate applications of AI-powered systems.

The mainstreaming of administrative tasks to AI will help educational leaders, especially women who often face additional administrative burdens, freeing up both time and resources for more strategic and instructional leadership activities.

We are witnessing a high transformation with the integration of AI into the workplace. This is indicated by a recent study that emphasized the future of leadership. They explored that AI may be a strategic partner and a vital factor of leadership, promoting human abilities. Where leaders will depend on AI to address large amounts of data, select trends, and take strategic decisions. [8]

The influence of such a situation will lead to a transformation in the leaders' role from being the main decision-maker to monitoring AI-driven processes, where leaders will place more emphasis on interpreting AI-generated insights, making value-based judgments, and directing the ethical use of AI within the organization. When it relates to proficiency, leaders should improve a robust understanding of AI technologies, including leveraging AI tools meaningfully and ethically. This includes proficiency in data literacy, the capacity to engage with AI systems, and AI governance.

The study also expects the emergence of AI-driven Leadership positions to create positions within organizations that focus on managing the use of AI and overseeing AI initiatives. It will create an impact by changing the organizational Hierarchy to fit Specialized AI management roles. These AI-focused leaders will be critical in driving adoption, innovation, and responsible use of AI tools.

Many present leadership models and frameworks can be improved with the addition of AI into the workplace. One of these additions is the distributed leadership models, where AI could lead to a form of leadership where decision-making is shared across the organization, with AI systems providing real-time data and decision support to all levels of the organization, enabling a more participatory approach to leadership. This shift could reduce reliance on top-down leadership structures and empower all employees on all levels to take on a leadership role. An organization may adopt flatter hierarchies where leadership is more based on expertise rather than formal titles. The competency for such a level of administration can be compiled into initiating

Online: https://doi.org/ 10.64680/jisads.v3i2.43

leadership roles and embracing a more collaborative and inclusive approach to leadership to foster a culture of shared responsibility and empower team members to contribute to decision-making processes.

Another form of leadership group engaged in the paper that relies on AI is "Collective Endeavor," supported by AI systems, which collects input from multiple teams.

These collectives allow AI to synthesize data, perspectives, and experiences within the organization, leading to more comprehensive and informed decisions.

The influence of integrating this approach might cause more democratic decision-making processes, where leadership is not limited to a few individuals, but is a collective responsibility shared between the organization. It could also promote innovation by incorporating several points of view into decision-making processes.

The qualification for such a leadership model means that the leader must be qualified enough and skilled in facilitating cooperation and building agreement, guaranteeing that the collective leadership model operates effectively. They will also need to highlight the incorporation of AI into these processes, ensuring the collective benefits from AI-driven insights. [8].

These ideas were reinforced by arguing that traditional top-down leadership models are inadequate in the age of AI. Their literature review calls for a hybrid leadership model combining technical fluency, emotional intelligence, and strategic foresight. In their paper, they identified four thematic clusters of leadership challenges and competencies: (1) strategic transformation planning, (2) development of new competencies, (3) fostering an AI adaptive culture, and (4) managing human-AI interaction. This suggests that successful leaders must navigate technological and social dimensions simultaneously [9]

2.2.

2.3. Gendered Barriers to leadership and technology access:

When it comes to enabling women to reach leadership management, a study paid attention to women in accounting management and found that both support in private life and the institutional environment play a pivotal role in their progress.

Many of the interviewees in this study stressed the significance of counselling and encouragement from managers. Supportive leadership was cited as a main factor that empowered them to pursue promotions and overcome challenges in their careers. Moreover, the study found that the skills, the sample of women in leadership positions said- helped them to improve their opportunities were social skills and professional experience. Where the women highlighted the significance of interpersonal skills and specialized knowledge in their career advancement, alongside ambitions and self-assertion.

Many women indicated that ambition and the capacity to assert themselves were crucial to their progress.

The study indicated that being in the right place at the right time played a crucial role in women's advancement in their careers. [10].

These findings have also been reflected in Saudi Arabia, where a study assessed the status of administrative empowerment among female leaders who participated in decision-making within the Saudi governmental entities.

The study used a descriptive approach, using a structured questionnaire distributed to 150 female leaders across 95 official governmental entities, alongside distributing a survey to 25 participants from the General Authority for Statistics.

The study focused on two key components:

Administrative enhancement and participation in decision-making, assessed across four dimensions: Authority and delegated authorities, Human and physical resources, organizational culture, and training and capacity-building.

The results of the study stated a moderate level of empowerment among female leaders, with gaps in women having positions with authority and decision-making roles. Nevertheless, the study pointed out the rising chances, especially as institutional and societal reforms continue to open more inclusive leadership paths. The authors assert for institutional support mechanisms and means, policy reforms, and cultural changes that promote women's roles in strategic governance and public administration. [11].

A study implemented empirical research on the impact of administrative empowerment on the job performance of women leaders in the Saudi governmental sector. The study responded to the rising focus on women's integration in leadership roles as part of Saudi Arabia's Vision 2030. outlining a sample of 70 male and female leaders from a governmental institution, the study assessed five main dimensions of empowerment: delegation of authority, training, teamwork, motivation, and effective communication.

While the results from the regression analysis demonstrated that effective communication had a statistically significant positive impact on female leaders' job performance, other dimensions, even though they were positively associated, didn't illustrate statistically significant impacts within the model.

These results and findings indicate that, even though national reforms and the value of empowerment dimensions, actual administrative structures may not completely support or translate into improved performance outcomes for female leaders. It is worth mentioning that this study is among the first experimental efforts to evaluate the relationship between empowerment and job performance in the context of the Saudi public sector, as it provides significant insights for improving policies and regulations to enhance gender equality in leadership. [12].

A recent study revealed the mechanisms and challenges of empowering female leaders within decision-making centres in the Dakahlia Governorate of Egypt, to understand structural and cultural barriers to gender-inclusive leadership. Refai implemented interviews with 25 female leaders to determine enablers and obstacles to women's participation in high governance roles. The findings explored those personal skills like ambition, self-confidence, professional competence, and determination,

including administrative expertise, strategic planning, which were the main factors in strengthening leadership success. However, these strengths were usually undermined by the organizational shortcomings, for example, gender-biased appointment systems, limited training chances, and non-transparent governance procedures. The study also identified substantial challenges at the personal level (work-life balance), cultural level (gender stereotypes and disbelief in women's leadership), and institutional level (centralized decision-making and lack of preliminary programs for leadership). Despite the existence of some accountability mechanisms, the absence of organized, merit-based leadership, and the lack of awareness of regulative frameworks have hampered effective empowerment. The study has concluded with targeted recommendations, including the development of sustainable training programs, implementing transparent recruitment policies, and enhancing inclusive organizational cultures. These recommendations align with global gender equality goals like SDG5 and Egypt Vision 2030, as well as the study contributes to the literature by applying social justice, feminist, and capacity-building frameworks to analyse the systematic empowerment of women in leadership roles [13].

Greenberg and Cohen A study offers crucial insights into the cultural and institutional dynamics forming female educational leadership across Arab communities by carrying out interviews with female principals. The study clarified how women deal with deeply embedded gender norms, societal expectations, and institutional inflexibility while preserving professional authority in school leadership roles. These results are especially relevant when considering the integration of AI into leadership frameworks, as they shed light on how technology adoption must be culturally sensitive and tailored to the lived realities of women leaders. Their study reinforces the need for leadership models that are not only technologically adaptive but also socially contextualized. [14].

A paper focused on the algorithmic fairness in education. In the paper, it was found that algorithmic systems are increasingly integrated into educational settings, impacting key decisions around student assessment. Resource allocation and institutional performance. It was stated that these systems are often opaque and can cause harm if not carefully designed, monitored, and audited; they also highlight the need for stakeholders to crucially scrutinize these systems to ensure they function fairly and equitably. [15]

It was also highlighted that the dataset may reflect real-world social biases and structural inequalities, especially when marginalized groups are not adequately sampled or when missing data skews outcomes, with different notions of fairness needing to be considered, believing that fairness cannot be reduced to a single metric. [15]

A review paper focused on barriers to women's AI adoption in Asian higher education revealed that gender bias in AI design and employment reflects the broader lack of female representation in AI-related decision-making and policy development. Studies focus on the absence of gender- sensitive frameworks hinders the relevance and inclusiveness of AI technologies in education. In addition to the technical exception, privacy and ethical concerns disproportionately impact women, preventing them from adopting AI tools in the educational context. [16].

2.4. Feminist and Equity-driven Approaches to AI

Researches on women's educational leadership indicated the main strengths that are especially relevant to AI implementation. Women leaders often illustrate strong emotional intelligence, communication skills, and the capacity to build agreement and alignment among stakeholders.

These studies clarified that women as educational leaders prioritize professional improvement and capacity-building for their staff. Effective use of AI tools requires training and ongoing support, and women leaders' commitment to staff improvement can facilitate more successful technology integration, while establishing institutional ability for innovation and ideation.

The gendered design and deployment of AI systems present new challenges. When it comes to the role of AI in supporting women's leadership, there was an investigation on the challenges women face in academic leadership by examining the reflective narratives of 3 female educational leaders. The study revealed that all three women powerfully defend for distributed and inclusive leadership, focusing on that leadership effectiveness is promoted when several perspectives and skills are incorporated into decision-making structures. This position defies traditional leadership forms and supports the contention that equity-driven recruitment and educational policies are important for promoting women in AI leadership roles. Moreover, another issue was recognition and visibility, which is considered a main issue for the effectiveness of leadership. [17].

The researchers discuss that women often implement "Invisible Labor", for example, mentoring and administrative tasks, which tend to be underestimated. This discussion aligns with broader critiques of institutional cultures that underestimate care and support work, and it raises questions about how leadership worth is being assessed in environments that are being dominated by males. Furthermore, the study indicates critical cross-sectoral perspectives to be controversial, highlighting how cultural dynamics and gender intertwine to form leadership experiences. Personal witnesses from the participants demonstrate the complex challenges faced by

women of color, focusing on the need for leadership forms that address race and gender disparities.

The writers emphasize resistance to technological transformation, mostly when it comes to AI integration in academic contexts. They propose that this resistance is partly due to fear and mistrust, and suggest that creating supportive and inclusive environments may ease this change and enhance more equitable technological adoption. The study contributes to the discussion on the transformative potential of AI in education, emphasizing that ethical and socially responsive leadership is super important. They debate that women leaders are more adapted to ethical and social considerations and are uniquely placed to guide AI integration in approaches that prioritize the values that focus on humans.

An article addressed the question of how AI can continue or help mitigate gender bias in leadership. To address this issue, the researchers asked Wordplay AI, a long-form writing assistant and asked the AI what the features of good men leaders are, what the features of good women leaders are, and what the features of leaders (gender neutral) are. The authors then analyzed the output of the AI to find out if and how gender biases are evident. The article found that AI-generated narratives about good leadership were in line with what research has shown; there was a clear sentiment that leaders are made, not born, that communication, decision-making, and ethics are key to the future of leadership. There was also understanding that leading demands self-awareness, accountability fortitude. Ethics were discussed frequently in narratives about good and bad leadership. The article highlighted the need for interrogating leader development providers to ensure transparency about their use of AI content, as well as critically examining content on leadership produced by AI. Analyzing AI-produced content to develop gender bias awareness. And using AI to identify biases in human-generated content. [18]

Feminist critiques of AI further stress the need for participatory design processes, inclusive metrics, and ethical governance frameworks that center marginalized voices. These frameworks are critical in conflict-affected and patriarchal settings such as Palestine.

2.5. Structural inequity frameworks in educational AI

A recent study has highlighted the importance of analyzing AI from the perspective of structural inequity. Madio et al. criticize the control of justice measures, which focus on equality, and call for integrating critical and feminist theory to reveal how educational techniques repeat wider systematic inequalities. This criticism is pivotal in Palestine, where the colonial legacies and control are being intertwined with gendered educational differences.
There was a debate on the importance of exploring the invisible labor, which is considered the essence of the data systems, and is being performed by women inappropriately, and for mainstreaming feminist values in AI development, such as pluralism, contextual design, and power sharing. These principles offer a cross-sectoral base for assessing AI results beyond accuracy to encompass community dynamics and relational work. [19].
Which is disproportionately performed by women, and for embedding feminist values, such as pluralism, contextual design, and power sharing
Further consolidating the need for ethical implementation, Wieczorek et al.'s systematic literature review (SLR) on AI in primary education identified a wide range of ethical concerns, including data privacy, algorithmic bias, and teacher autonomy. However, there is a notable lack of feminist or structural justice scholarship addressing these issues. As a result, ethical reviews and risk assessments may remain superficial without the deeper grounding offered by feminist critical thought. [20]
Together, these sources construct a theoretical framework that transcends conventional fairness metrics. They demand that AI systems be evaluated against historical inequities, cultural power structures, and grassroots labor practices. Integrating these feminist and structural perspectives into your research paper enriches the literature review and its discussion, putting it in conversation with global discussions while placing the Palestinian situation within a strict critical model. [20] [19].

2.6. Women's empowerment and leadership in the Arab region

Many of the MENA-based researchers are reinforcing the understanding of structural and social empowerment factors for women in leadership. A study revealed the experience of women leaders in the UAE. He used a sample of women in leadership roles across different sectors in the UAE, as well as he used a survey to collect the data and examine the hypothesis that was developed in the discussion review. The hypothesis focused on the role of organizational culture and the opportunities provided by technological assistance that are available to those in leadership positions. The outcomes of the study found that organizational culture was a substantial factor in the positive influence on leadership success.
This reaffirms the criticality of fostering a conducive, inclusive, and supportive organizational culture. In line with global trends, AI training opportunities were also recognized as a significant catalyst for leadership success, which highlighted the importance of continuous learning in the age of digital transformation. Similarly, the findings underscored the positive influence of technological assistance, highlighting the relationship between technology adoption and leadership effectiveness.
The study underscores the role of continuous learning, supportive environments, and tech accessibility. [21]

A qualitative study entitled: "Women and Leadership: How Do Women Leaders Contribute to Companies' Sustainable Choices?" The study involved five Italian companies. The study employed multiple case studies and used a mixed methods approach, using both qualitative and quantitative data. The study found that female leaders

facilitate the transition towards sustainability and exhibit traits such as the ability to emphasize, listen, and have the predisposition to sharing and collaboration, which were considered the two typical traits of female leadership that are able to increase the effectiveness of implementing sustainable development strategies. These attributes were chosen, respectively, by 5 and 4 women leaders out of a total of 6. Even the overall and long-term vision of the surrounding reality (2 out of 6) and the problem-solving (3 out of 6) are considered natural female characteristics capable of facilitating the implementation of sustainable strategies within the companies examined. On the contrary, greater sensitivity to environmental issues has been selected only once, while flexibility is not among the typical female attributes considered instrumental to the success of business sustainability. [22]

2.7. Palestinian Context: Gaps and Innovations

Palestinian women face many barriers due to the occupation and the fragility of the Palestinian economy. And despite all these hurdles, several local studies and programs found that with adequate support, women can lead educational reform, where local pilot programs in Palestinian schools and colleges have shown increased and durable student engagement, especially among girls, when AI-supported learning and leadership models are introduced. The examples align with broader findings on the importance of contextualized, inclusive digital leadership [23]

Refai's and ESCWA's results highlight the role of localized capacity-building, access to technology, and an encouraging policy environment in enhancing women's digital leadership.

This supports the call for regional, grounded feminist leadership models that account for the intersection of gender, politics, and technology. [4] [10]

The authors implemented an assessment on the influence of the leadership development program on Palestinian schools, which discovered that structured interventions can greatly enhance and improve leadership skills and educational results in students.

The study showcased how collaborative leadership, ethical decision-making, and community engagement have become qualities that are aligned with emerging AI-enhanced leadership models. The outcomes of this study provide a baseline that may help in evaluating the ability of AI in increasing the influence of leadership frameworks, on condition that tools are tailored to the local context and accessible to female leaders. [23].

Author& Year	Study Focus	Key Findings	Relevance to the Study
Nadje Al-Ali (2021)	Women's Roles, Rights, and Representations during the Arab uprisings.	The article says that the way women have been seen as second-class citizens throughout history and across cultures is linked to militarization and a militarized masculinity that favors authoritarianism and social hierarchies and tries to control and marginalize not just women but also men who don't fit the mold.	Provides foundational context on gender and power in Arab socio-political systems, useful for situating women's leadership challenges
Badran, M 2022.	The intersection of gender and technological reform in Arab educational systems	Gender inequities persist in Access to and benefit from educational technologies.	Directly links to AI and women's educational leadership in MENA.
Brougham ,D., &Haar,j. 2019	How employees perceive AI's impact on job Security	Employees fear being replaced by AI. Especially in repetitive roles.	Highlights the challenges AI poses to leadership stability
Crawford, K. 2021	Critical assessment of AI's political, environmental, and ethical dimensions.	AI systems reinforce structural inequalities, including gender bias.	Supports a critical lens on AI's deployment in leadership and Education
ESCWA 2022	Regional assessment of gender divides	Women face digital exclusion due to Socio economic infrastrucral And cultural factor	Provides concrete data and context for Palestinian and regional gender tech gaps.
OECD 2021	Policy recommendations	Advocates for inclusive, ethical AI development in educational settings	Offers best practices for integrating AI while addressing equity concerns

	for integrating AI into education		
UNESCO 2023	Impact of AI on gender equality in education	AI can reinforce or dismantle gender bias depending on design	Central to understanding how AI affects women in educational leadership
USAID 2023	Digital access and gender inequality in Palestine	Palestinian women lack equal access to digital tools and literacy	Direct evidence of tech-driven leadership barriers in the study's focus context
Frimpong, V.,& Wolfs,b. 2024	How AI shapes emerging leadership styles and traits	AI emphasizes data-driven leadership, potentially shifting norms	Useful for analyzing how AI might reshape leadership opportunities for women
Bevilacqua, S., Masárová, J., Perotti, F. A., & Ferraris, A. 2025	How AI supports leadership functions	AI enhances decision making, planning, and performance; ethical concerns persist.	Strong support for AI as a tool in leadership can be applied to women in educational leadership.
Cimirotic, R. et al. (2017)	Enables women to reach leadership roles	Organizational culture, mentorship, and supportive policies are critical	Provides transferable insights into barriers/facilitators in education
T. Al-Zahrani, M.Al-Malki, and A. Jafari 2025	Empowerment of women leaders in Gulf governmental decision-making.	Formal empowerment is not matched with influence in decision-making.	Illustrate structural barriers in arab bureaucracies, parallels with education.
Refai, A.M.A.M. 2024	Mechanisms for empowering women in leadership roles in Egypt	Cultural norms, institutional resistance hinder empowerment.	Relevant for understanding local-level policy and empowerment efforts.
Hubert, E., Selvaratnam, R.,& Taylor, C. 2024	Barriers and support structures for women in academic leadership	Bias, lack of mentorship, and structural support impede progress	Directly supports educational leadership and policy discussions
Newstead, T., Eager, &Wilson, S. 2023	AI's role in reinforcing or combating gender bias in Leadership	Ethical AI design can reduce bias; poor design worsens inequality	Central argument for gender aware AI frameworks.
Mahmood, S., Rehman, S.U., Ashraf, M.U., & Khan, S.N. 2023	AI-based enablers for women in leadership in the UAE.	Training and organizational support enhance leadership outcomes	Region-specific evidence that supports the practical application of AI empowerment
Pierli, G., Murmura, F.,& Palazzi, F. (2022).	Role of women leaders in sustainability practices	Women contribute to ethical and sustainable organizational practices	Adds value dimension to women's leadership in education and tech.
René F. Kizilcec & Hansol Lee, 2020	Explore how fairness is measured and operationalized in AI systems and used in education.	The authors find that many educational AI tools use overly simplistic fairness metrics that fail to account for structural inequalities in how data is generated and used. They stress that measuring fairness	This source strengthens the paper's discussion on algorithmic bias and ethical AI. It supports the argument that AI systems must be evaluated beyond surface-level fairness,

		purely via accuracy or group parity may conceal deeper biases.	particularly in fragile contexts where inequality is embedded in the data and institutional structure.
Usama Kalim et al., 2025	a systematic literature review on the barriers to AI adoption for women in higher education across Asian contexts, with a focus on gender, policy, and cultural constraints	The study identifies multiple barriers, including a lack of trust in AI systems, cultural resistance to women in tech leadership, policy gaps, and limited institutional infrastructure to support women in adopting. The findings are drawn from 68 studies across Asia.	The study highlights the gendered barriers to AI in leadership, especially in under-resourced regions. Its findings offer comparative insights from other fragile settings where women face both social and digital exclusion.
Greenberg & Cohen (2024)	Examines the experience of female school principals in Arab communities	Based on 25 in-depth interviews, the study reveals that women often enter the teaching profession because it is a socially acceptable career default, then advance into leadership roles by navigating strong familial, societal, and institutional expectations. These women may transition from private to public spheres, adopting relational and community-oriented leadership styles despite cultural resistance.	Provides a sociocultural lens on gendered pathways into educational leadership, offering a critical backdrop for understanding how AI leadership programs can be aligned with local gender norms and expectations
Cristillo et al	Evaluates the sustainable impact of the USAID model schools network leadership development program for Palestinian school principals	Using surveys and interviews with program alumni, this study finds lasting positive effects in three domains: integration of technology, community collaboration, and instructional leadership. Principals reported sustained changes in attitudes and practices.	Establishes a non-AI leadership baseline in Palestine. It sets a benchmark against which AI-enhanced leadership interventions can be measured.

Table 1: List of 23 sources with findings

3. METHODOLOGY

The study adopts a literature review approach directed by the (PRISMA) framework. The review's purpose is to pinpoint and analyze empirical and theoretical studies that explore the intersection of AI, women's leadership in education, and gender fairness in fragile or conflict-affected contexts, with a specific focus on Palestine and the MENA region.

3.1. Identification and search strategy:

The articles were identified through searches in Academic databases like Google Scholar, JSTOR, and SCOPUS.

The search strategy focused on terms in English and Arabic that included:

- AI, education, and leadership
- Women in educational leadership
- Gender equity, Digital transformation.
- Conflict-Affected Education

3.2. Review Protocol and Scope

The review included publications covered from 2015 to 2025 in both English and Arabic. Only peer-reviewed journal articles, book chapters, and institutional reports.

3.3. Choosing Articles

- Published between 2015 and 2024
- Empirical or conceptual studies on AI in education
- Focus on women's leadership, gender equity, and AIED.

Exclusion Criteria:

- Opinion pieces or news articles, or non-scholarly blogs
- Studies not involving leadership or gender aspects
- Duplicate studies or inaccessible full texts

3.4. Data Extraction

A data extraction matrix was developed to capture:

- Author, year, country
- Study type
- Focus area

- Key findings

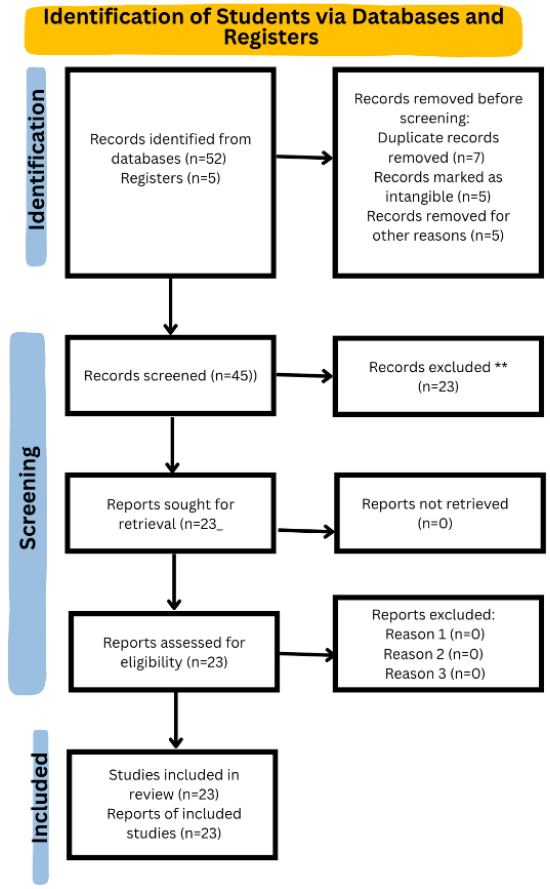

Figure 1: Prisma flow chart

The review process followed the PRISMA 2020 guidelines to ensure methodological transparency and rigor. Figure 1 presents the PRISMA flow diagram illustrating the study identification, screening, and inclusion process. A total of 57 records were identified — 52 from electronic databases and 5 from registers. Before screening, 7 duplicate records, 5 intangible records, and 5 records were removed for other reasons, leaving 45 records for screening. After title and abstract screening, 23 records were excluded, resulting in 23 full-text reports retrieved and assessed for eligibility. No reports were excluded at this stage. Consequently, 23 studies were included in the final review, with each report contributing to the synthesis and analysis of AI and women's leadership in education.

4. RESULTS

In this section, the main results will be presented from the literature review on 23 studies published between 2015 and 2025 on the intersection of AI, women's educational leadership, and gender equity in fragile and conflict-affected contexts. Focusing on Palestine and the MENA region. The findings are organized into four thematic clusters.

3.5. AI as an enabler of women's educational leadership

Most of the research indicates how AI technologies can support and enhance the capabilities of women in educational leadership roles. Some studies illustrate that AI facilitates strategic planning, decision-making, and successful administrative work processes. All of these factors can ease the load of usual routine tasks, which are being implemented disproportionately by female leaders. Predictive analysis and decision support systems pointed out how they helped in identifying issues like student performance, permitting leaders to respond proactively to any problem that might be found. [8] [9].

Previous research has demonstrated that the leadership models that emerge from AI-supportive workplaces are described as more participatory and collaborative. These models may create a more comfortable environment for female leaders to flourish because of how these models align with the inclusive and consensus-building leadership styles, which are usually attributed to women.

3.6. Structural and technological barriers to equitable AI adoption

The adoption of AI educational leadership is still inconsistent. In the reviewed literature, repeated barriers like gender- blind AI systems, high cost of implementation, limited AI literacy among educators, and inadequate digital infrastructure were identified.

These constraints were more present in fragile and under-resourced settings like Palestine, where women already face restricted access to leadership opportunities and technical training.

Studies reveal that even when policy frameworks support gender inclusion, practical implementation of these policies is undermined by cultural and institutional traditions. Many Women leaders report limited access to mentorship, decision-making authority, and AI Literacy programs, especially in male-dominated fields. These disparities broaden the digital gap and hinder the effective and equitable use of AI tools in educational leadership. [11] [13].

3.7. Feminist and Equity-Oriented AI Frameworks

There has been an increasing research interest that supports feminist and equity-conscious methods for implementing AI in the classroom. For example, Authors highlight the dangers of algorithmic bias, which reproduces gender stereotypes and marginalizes women's leadership styles because the algorithms are being improved without considering gender sensitivity. They also focus on AI's ability as a diagnostic and remedial tool; if developed ethically, it can recognize and lessen preexisting biases [15] [16].

Feminist critiques across the literature call for participatory design processes, inclusive data policies, and recognition of invisible labor, such as mentoring and emotional support. These strategies are typically carried out by women in leadership roles. These strategies are necessary in patriarchal and conflict-affected environments, where intersectionality is crucial in determining women's access to technology and leadership positions.

3.8. Contextual insights from the Palestinian case

While empirical research on AI and women's educational leadership in Palestine is limited and several studies and pilot programs offer promising insights. Many localized initiatives and pilot programs in Palestine propose that when women are equipped with AI tools, they can lead transformative educational reforms, which enhance learning outcomes and student integration, particularly for girls. Furthermore, context-specific studies emphasize that Palestinian women leaders navigate a unique intersection

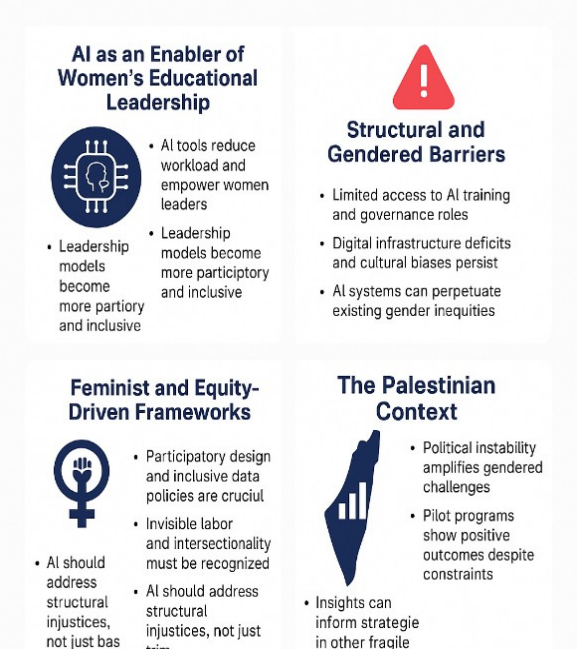

Figure 2: Results infographic

of occupation, political fragmentation, and digital marginalization. Structural barriers, ranging from limited internet infrastructure to institutional fragmentation, restrict the scalability of AI-enabled leadership initiatives. However, programs that offer supportive policy environments, culturally responsive digital content, and training clarify that women can thrive as tech-enabled educational leaders.

5. DISCUSSION

This study aimed to explore the intersection of artificial intelligence and women's educational leadership in fragile and conflict-affected settings, with a specific focus on Palestine. The discussion below is organized around the four guiding research questions and draws on insights from the reviewed research to critically examine how AI can both support and challenge women's leadership in educational systems.

3.9. How can AI technologies support and enhance women's educational and leadership in fragile contexts?

AI presents new avenues for empowerment, but many gendered and structural barriers remain. These barriers, like the underrepresentation of women in AI training and institutional cultures that devalue women's contributions these barriers are further exacerbated in fragile settings like Palestine, where these challenges are intensified by political instability, occupation-related restrictions, and fragmented governance systems. [17] The studies serve as proof of how formal empowerment policies do not translate into influence over AI-related decisions, reflecting a broader disconnection between gender policy rhetoric and practice in the region. [11][21]

3.10. What policy and practice recommendations emerge from global and regional experiences?

Global and regional evidence indicates to multiple main strategies for enhancing the integration of gender equity in educational leadership:

Capacity building and training:

Women leaders should have access to training programs that combine technical skills with leadership Improvement. These programs should be designed with a Focus on cultural diversity.

Ethical AI governance: Participatory design processes that include women in the development and implementation of AI systems are essential. This mitigates the bias and guarantees that technologies reflect the needs of diverse users.
Organizational culture reforms: entities must actively challenge patriarchal norms and support inclusive leadership programs. This includes valuing the labor women often perform, such as household work.

Localized innovation and ideation support: Pilot projects and community-based initiatives can be powerful vehicles for empowerment when they are contextually grounded and include women from the outset. Localize innovation support: pilot projects and community-based AI initiatives can be powerful vehicles for empowerment when they are contextually grounded and include women from the outset.

The above practices are highly relevant to Palestine, where national strategies on AI and education are still unimproved. The success of localized programs in Gaza and Hebron points to the need for policies that scale such initiatives while integrating equity as a main design principle.

3.11. How can the Palestinian case inform the broader approaches to AI and gender-equitable leadership?

The Palestinian case explores the vulnerabilities and the ability of AI-driven educational leadership. Women leaders in Palestine live and survive under Israeli occupation, institutional weakness, and limited infrastructure, yet they continue to illustrate resilience and ideation where their expertise in confronting occupation highlights the significance of context-sensitive approaches that recognize the challenges and barriers that women face in leveraging and adopting AI. [22].

Furthermore, Palestine affords hope for women educational leaders in fragile and conflict-affected contexts and regions. The Palestinian context underscores the need for an AI strategy that embeds values that emphasize gender equity and protecting women's digital rights. The nature of Palestinian women's experiences, shaped by gender, politics, and language, should guide the creation of AI systems that do not merely copy global technologies but also aim to co-design new strategies using participatory approaches.

To sum up, the Palestinian case enhances the necessity for a mixed approach: one that promotes the embedding of AI in education while at the same time facing structural inequities that hinder women's leadership.

AI cannot be a neutral tool in these contexts; it must be ethically grounded and socially aware

6. CONCLUSION:

This systematic literature review has examined the intersection of artificial intelligence, Women's leadership, and gender equity in fragile and conflict-affected contexts. The findings revealed that there are many opportunities and many barriers to the application of AI in supporting gender-inclusive leadership in education.

AI, when implemented ethically and inclusively, has the potential to enhance women's leadership by reducing the administrative burdens that are usually given to women and enabling women's leadership by providing them with data-driven decision-making authority, and supporting collaborative leadership styles that align with feminist pedagogies. Nevertheless, structural inequalities such as the limited access to digital tools, the low representation of women in AI governance, and the institutional bias that hinders the equal embedding of AI exist. The Palestinian situation might be seen as a format for how political instability, digital marginalization, and occupation can intertwine with gender to make a challenging environment for AI-enabled leadership. Yet, the successful programs and context-specific interventions have clarified that with localized encouragement, Palestinian women can lead technologically adaptive and inclusive educational alterations and reforms.

The study supports the growing discourse on AI and gender justice in education by providing a women-informed framework that underscores the need for culturally responsive AI strategies that enhance technological innovation and face the barriers to women's empowerment.

For fragile contexts globally, Palestine offers a critical case study on digital transformation and gender justice in educational leadership.

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