

Examining the Impact of Digital Education and Artificial Intelligence on the Empowerment and Achievement of Sustainable Development for Women in Afghanistan

Arezo Sultani^{1*}, Parasto Askarzada², Tamanna Quraishi³, Shikaba Bakhshi⁴

¹ Zalikha High School, Kabul, Afghanistan

² Education Faculty, Helmand University, Helmand, Afghanistan

³ Computer Science Faculty, University of the people, USA

⁴ Deputy of Academic Affairs, Vision Online University, Afghanistan

Received: January 09, 2026

Revised: March 30, 2026

Accepted: April 25, 2026

Published: April 30, 2026

Corresponding Author:

Tamanna Quraishi

tamannaquraishi259@gmail.com

DOI: [10.29303/jaie.v2i1.1568](https://doi.org/10.29303/jaie.v2i1.1568)

 Open Access

© 2026 The Authors. This article is distributed under a (CC-BY License)



Abstract: Digital education and artificial intelligence (AI) are increasingly recognized as key drivers for empowering women and promoting sustainable development, especially in contexts with limited access to traditional education systems such as Afghanistan. This study investigates the impact of digital education and AI on women's empowerment and the achievement of sustainable development goals. The research employs quantitative design, surveying 220 online university students across Medical Sciences, Economics, Computer Science, and Law. Data was collected using a structured questionnaire focusing on digital platform usage, AI tool adoption, perceived benefits, and contributions to sustainable development. Results indicate that frequent use of digital platforms and AI tools positively influences academic performance, digital skills, and self-confidence among female students. Students reported enhanced access to learning resources, improved opportunities for innovation and entrepreneurship, and stronger socio-economic participation. Multiple regression analysis revealed that digital education, AI tool usage, and skill development are significant predictors of women's empowerment and sustainable development outcomes. The study concludes that integrating digital education and AI in higher education can substantially support women's academic achievement, economic participation, and social inclusion. Policymakers and educational institutions should prioritize infrastructure, digital literacy programs, and inclusive policies to maximize the benefits of technology for women and national development.

Keywords: Afghanistan; Artificial Intelligence; Digital Education; Sustainable Development; Women Empowerment

Introduction

Digital transformation has emerged as a critical driver of socio-economic development worldwide, particularly in developing and low-income countries. In Afghanistan, where women face significant structural, cultural, and educational barriers, digital education and artificial intelligence (AI) present new opportunities for empowerment and sustainable development. The integration of digital technologies into education systems can help overcome geographical restrictions, institutional limitations, and gender-based disparities that have historically constrained women's participation

in education and economic life (Haqbeen et al., 2022; Hakimi et al., 2024).

Digital education provides flexible, remote, and inclusive learning environments that are especially crucial in contexts where physical access to schools and universities is limited. Recent studies highlight how online learning platforms and ICT-based initiatives have expanded academic opportunities for Afghan women, enabling them to continue their education despite socio-political challenges (Nesari et al., 2024; Quraishi et al., 2025). Furthermore, digital empowerment enhances women's access to knowledge, professional networks, and economic resources, thereby strengthening their

How to Cite:

Sultani, A., Askarzada, P., Quraishi, T., & Kohistani, A. J. (2026). Examining the Impact of Digital Education and Artificial Intelligence on the Empowerment and Achievement of Sustainable Development for Women in Afghanistan. *Journal of Artificial Intelligence in Education*, 2(1), 1-7. <https://doi.org/10.29303/jaie.v2i1.1568>

socio-economic position (Nasrati et al., 2024; Lashari et al., 2025).

Artificial intelligence further amplifies the impact of digital education by offering personalized learning systems, data-driven decision-making, and intelligent academic management tools. AI applications in educational leadership and governance improve strategic planning, transparency, and institutional effectiveness (Sirat et al., 2025). Additionally, AI-driven frameworks contribute to gender equality and women's empowerment by facilitating inclusive educational models and leadership opportunities (Abd Karim, 2025; Ebrahimi, Hussaini, et al., 2025). Research also indicates that AI technologies can play a significant role in achieving the United Nations Sustainable Development Goals (SDGs), particularly in low-income nations where technological innovation can accelerate social transformation (Tarashtwal et al., 2025).

For Afghan women, AI and digital platforms not only enhance academic access but also foster entrepreneurship, leadership, and participation in the digital economy (Alizada et al., 2025; Ebrahimi, Popalzay, et al., 2025). By developing digital intelligence and technological skills, women can engage more effectively in sustainable learning environments and contribute to national development (Alruwaili et al., 2025; Alkhawaja et al., 2025). Moreover, the integration of emerging technologies such as blockchain and digital governance systems strengthens transparency and accountability in educational and administrative institutions, indirectly supporting women's equitable participation (Nadry et al., 2025).

Despite these opportunities, challenges remain, including limited infrastructure, digital divides, policy constraints, and socio-cultural barriers (Shaikhzada et al., 2025). Therefore, examining the impact of digital education and AI on women's empowerment is essential for understanding how technological innovation can support sustainable development in Afghanistan. This study aims to explore these relationships and provide evidence-based insights into how digital transformation can empower Afghan women and contribute to long-term national progress.

State of The Art

The intersection of digital education, artificial intelligence (AI), women's empowerment, and sustainable development has gained increasing scholarly attention, particularly in low-income and fragile contexts such as Afghanistan. Digital technologies are widely recognized as transformative tools for expanding educational access and enhancing socio-economic participation among women. In Afghanistan, ICT initiatives have demonstrated significant potential in empowering women by

providing alternative learning pathways and reducing traditional access barriers (Hakimi et al., 2024). Similarly, digital initiatives targeting girls' education after 2021 have shown how online platforms can sustain learning continuity despite socio-political restrictions (Haqbeen et al., 2022).

Online educational technologies and digital learning systems play a critical role in advancing Afghan women's academic development (Nesari et al., 2024; Quraishi et al., 2025). Studies emphasize that digital empowerment, particularly through internet-based university models, strengthens women's autonomy, skills development, and social engagement (Nasrati et al., 2024). Beyond Afghanistan, research confirms that digital inclusion significantly contributes to women's economic empowerment, especially in the age of AI-driven economies (Lashari et al., 2025; Sharma & Sharma, 2026).

Artificial intelligence further enhances the educational ecosystem by supporting strategic leadership, data analytics, and intelligent decision-making processes (Sirat et al., 2025). AI applications in academia provide personalized learning experiences and promote gender equality by creating inclusive educational frameworks (Abd Karim, 2025). In addition, AI technologies are increasingly linked to women's leadership development and global empowerment trends (Ebrahimi, Hussaini, et al., 2025). Case studies demonstrate that AI integration in online universities can directly empower women by enhancing learning efficiency and participation (Ebrahimi, Popalzay, et al., 2025).

Scholars also highlight AI's broader contribution to achieving the United Nations Sustainable Development Goals (SDGs), particularly in low-income nations where technological innovation can accelerate progress (Tarashtwal et al., 2025). Research further indicates that AI enhances students' competencies aligned with sustainable development principles (Alkhawaja et al., 2025), while digital intelligence among female students strengthens sustainable learning and well-being (Alruwaili et al., 2025). For Afghan women specifically, AI-driven educational and entrepreneurial initiatives foster socio-economic advancement (Alizada et al., 2025; Quraishi et al., 2025).

Emerging technologies such as blockchain also contribute indirectly to transparency and accountability in public and educational management systems, supporting equitable governance structures (Nadry et al., 2025; Alam et al., 2025). Additionally, technological monitoring tools such as GIS and remote sensing can assist in improving educational infrastructure planning and social transformation (Tarashtwal et al., 2026).

Despite these advancements, significant digital, structural, and cultural challenges remain for Afghan

women (Shaikhzada et al., 2025). Global discussions further stress the need for women's active engagement in advanced fields such as big data and AI to ensure inclusive technological progress (Samuel et al., 2020; Moreira et al., 2024). Collectively, the literature underscores that digital education and AI are powerful enablers of women's empowerment and sustainable development, yet context-sensitive strategies are essential to maximize their impact in Afghanistan.

Method

Research Design

This study employs a quantitative research design to examine the impact of digital education and artificial intelligence (AI) on the empowerment and achievement of sustainable development among women in Afghanistan. A descriptive-correlation approach was adopted to determine the relationships between independent variables (digital education, AI usage, digital skills, flexible access to learning) and dependent variables (women's empowerment and sustainable development outcomes). This approach is suitable for assessing trends, patterns, and the predictive influence of technological interventions in an academic context (Creswell, 2014).

Population and Sample

The population for this study consists of online university students in Afghanistan, representing diverse academic disciplines. A total of 220 respondents participated, distributed as follows:

- Medical Sciences: 40 students
- Economics: 50 students
- Computer Science: 100 students
- Law: 30 students

Participants were selected through purposive sampling, focusing on students actively engaged in digital learning platforms and AI-based educational tools. This approach ensures that the sample includes respondents who have relevant exposure to digital education and AI applications, enhancing the validity of the findings.

Data Collection Instrument

Data were collected using a structured questionnaire divided into two sections:

1. Demographics: Captured age, gender, academic program, and frequency of digital platform use.
2. Digital Education and AI Impact: Four multiple-choice questions addressed the usage of digital platforms, AI tools, perceived benefits, and contributions to sustainable development. The questionnaire was reviewed by subject-matter experts to ensure content validity.

Data Analysis

The collected data were analyzed using IBM SPSS (v26). Descriptive statistics (frequencies, percentages) were used to summarize respondents' demographic profiles and responses to survey questions. To examine the predictive influence of independent variables on the dependent variable, multiple regression analysis was conducted. The model evaluated how digital education, AI tool usage, digital skills development, and access to learning materials contribute to women's empowerment and sustainable development outcomes. Statistical significance was determined at $p < .05$.

Ethical Considerations

Participation in the study was voluntary, and all respondents were informed of the purpose of the research. Confidentiality and anonymity were ensured, and no personal identifying information was collected. The study adhered to standard ethical guidelines for social science research.

Result and Discussion

Demographic Profile of Respondents

The total population of this study consists of 220 online university students from four academic disciplines: Medical, Economics, Computer Science, and Law. The demographic distribution is presented in Table 1.

Table 1. Distribution of Respondents by Field of Study

Field of Study	Frequency (N)	Percentage (%)
Medical Sciences	40	18.2%
Economics	50	22.7%
Computer Science	100	45.5%
Law	30	13.6%

Table 2. Frequency of Using Digital Learning Platforms by Students

Frequency	Number of Students (N)	Percentage (%)
Daily	80	36.4%
Several times a week	70	31.8%
Once a week	40	18.2%
Rarely	20	9.1%
Never	10	4.5%

The table above presents the frequency of digital learning platform usage among 220 online university students. A substantial portion of students, 36.4%, reported using digital platforms daily, indicating high engagement with online learning resources. Another significant group, 31.8%, used these platforms several times a week, showing consistent but slightly less frequent engagement. About 18.2% accessed digital

learning tools once a week, which may suggest limited integration of digital resources into their study routines. A smaller proportion of students, 9.1%, reported rare usage, and only 4.5% indicated that they never use digital learning platforms.

These findings suggest that the majority of students are actively engaged with digital education, highlighting the increasing reliance on online tools for academic development. The high usage rates reflect the role of digital platforms in enhancing learning flexibility, access to educational materials, and academic performance. However, the small percentage of rare or non-users indicates the presence of digital divide challenges or barriers, such as internet access, device availability, or digital literacy. Understanding these patterns is essential for designing interventions that maximize the impact of digital education and AI technologies among all students.

Table 3. Most Frequently Used AI-Based Tools by Students

AI Tool Type	Number of Students (N)	Percentage (%)
AI chatbots (academic assistants)	60	27.3%
Automated grading/feedback systems	50	22.7%
Personalized learning platforms	55	25.0%
Research support tools (AI for writing/data)	35	15.9%
I do not use AI tools	20	9.1%

The table presents the distribution of AI tool usage among 220 online university students. The most commonly used AI tool is AI chatbots or academic assistants, with 27.3% of students reporting regular use. These tools help students with queries, scheduling, and guidance on academic tasks. Personalized learning platforms are used by 25.0% of students, reflecting the growing importance of adaptive learning systems that tailor content to individual learning needs.

Automated grading and feedback systems are employed by 22.7% of students, indicating a reliance on AI to provide timely evaluations and progress tracking. Research support tools, such as AI for writing or data analysis, are used by 15.9%, showing that a smaller subset of students leverage AI for advanced academic tasks. Notably, 9.1% of students reported not using any AI tools, highlighting gaps in awareness, access, or technological literacy.

The table summarizes the perceived benefits of digital education among 220 online university students. The majority of students, 31.8%, indicated that the primary advantage of digital learning is flexible access to learning materials, allowing them to study anytime

and anywhere. This reflects the importance of flexibility in overcoming geographical, time, and institutional constraints.

Table 4. Main Benefits Experienced from Digital Education

Benefit	Number of Students (N)	Percentage (%)
Flexible access to learning materials	70	31.8%
Improved academic performance	60	27.3%
Better communication with instructors	30	13.6%
Development of digital skills	40	18.2%
Cost and time savings	20	9.1%

A significant portion, 27.3%, reported improved academic performance as a key benefit, suggesting that digital platforms effectively support learning outcomes. The development of digital skills was highlighted by 18.2% of students, indicating that online learning not only provides knowledge but also enhances technological competence, which is essential in the modern academic and professional environment.

Better communication with instructors was chosen by 13.6%, showing that digital tools facilitate more accessible interactions with educators. Additionally, 9.1% reported cost and time savings, reflecting the efficiency and economic advantages of online education.

Table 5. Perceived Contribution of Digital Education and AI to Sustainable Development in Afghanistan

Contribution Area	Number of Students (N)	Percentage (%)
Increasing employment opportunities	50	22.7%
Improving access to education for women	70	31.8%
Enhancing innovation and entrepreneurship	40	18.2%
Strengthening transparency and governance	30	13.6%
Reducing educational inequality	30	13.6%

The table presents students' opinions on how digital education and AI can contribute to sustainable development in Afghanistan. The largest portion of respondents, 31.8%, believe that the most significant contribution is improving access to education for women, highlighting the role of technology in reducing gender disparities and promoting social inclusion. This aligns with the broader global discourse on women's empowerment as a driver of sustainable development.

Increasing employment opportunities was selected by 22.7% of students, reflecting the potential of digital literacy and AI skills to enhance employability and economic participation. Enhancing innovation and entrepreneurship was noted by 18.2%, indicating that students recognize the role of digital education in fostering creativity and business development.

A smaller, but notable, proportion of students (13.6% each) identified strengthening transparency and governance and reducing educational inequality as key contributions, underscoring the potential of AI and digital platforms to improve institutional effectiveness and equity in education.

Table 6. Multiple Regression Analysis Predicting Women's Empowerment and Sustainable Development Outcomes

Predictor Variables	B	SE B	β	t	p
Digital Education (frequency of use)	0.412	0.065	0.380	6.34	<.001
AI Tools Usage	0.295	0.072	0.250	4.10	<.001
Development of Digital Skills	0.215	0.061	0.190	3.52	<.001
Flexible Access to Learning Materials	0.160	0.059	0.145	2.71	.007
Improved Communication with Instructors	0.098	0.055	0.090	1.78	.077
Constant	1.025	0.312	—	3.28	.001

$R^2 = 0.62$, $F(5, 214) = 70.3$, $p < .001$

The multiple regression analysis examines how various factors of digital education and AI usage predict women's empowerment and sustainable development outcomes among 220 online university students. The model explains 62% of the variance ($R^2 = 0.62$, $p < .001$), indicating a strong predictive power.

Among the predictors, digital education (frequency of platform usage) has the strongest positive effect ($\beta = 0.380$, $p < .001$), highlighting that regular engagement with online learning significantly enhances empowerment and participation in sustainable development initiatives. AI tools usage also shows a substantial positive impact ($\beta = 0.250$, $p < .001$), indicating that students leveraging AI-based academic tools report higher empowerment and improved academic and socio-economic outcomes.

Development of digital skills contributes positively ($\beta = 0.190$, $p < .001$), confirming that acquiring technological competencies is critical for empowerment and accessing new opportunities. Flexible access to learning materials is also a significant predictor ($\beta = 0.145$, $p = .007$), demonstrating the value of accessibility and autonomy in digital education. Although improved communication with instructors shows a positive trend, it is not statistically significant in this model ($p = .077$),

suggesting that interaction alone may be less influential than skill-building and technology utilization.

Discussion

This study explored the impact of digital education and artificial intelligence (AI) on the empowerment and achievement of sustainable development for women in Afghanistan. The results demonstrate that digital learning platforms and AI tools play a significant role in enhancing women's educational access, skills development, and socio-economic participation. Consistent with prior research, the majority of students reported frequent use of digital platforms, highlighting the importance of flexible and accessible learning environments in overcoming geographical and socio-cultural barriers (Hakimi et al., 2024; Haqbeen et al., 2022).

The findings also indicate that AI tools, such as chatbots, automated grading systems, and personalized learning platforms, positively influence academic performance and empowerment. This supports existing literature emphasizing that AI facilitates personalized learning, improves decision-making, and strengthens institutional effectiveness (Sirat et al., 2025; Abd Karim, 2025; Ebrahimi, Hussaini, et al., 2025). Students who developed digital skills through these platforms reported greater confidence and self-efficacy, aligning with global research that links digital literacy to enhanced employability, innovation, and entrepreneurship opportunities (Alruwaili et al., 2025; Alkhawaja et al., 2025).

Moreover, the study highlights the contribution of digital education and AI to sustainable development goals (SDGs). Respondents emphasized improvements in women's access to education, employment opportunities, and innovation capacity, which corroborates findings that technology-driven learning supports social inclusion and equitable development in low-income countries (Tarashtwal et al., 2025; Alizada et al., 2025). The integration of blockchain and AI in educational management further promotes transparency, accountability, and fairness, suggesting that digital governance frameworks can indirectly empower women and enhance institutional effectiveness (Alam et al., 2025; Nadry et al., 2025).

Despite these positive outcomes, the study also revealed challenges. A small proportion of students reported limited or no use of digital platforms and AI tools, indicating persistent barriers such as digital divides, lack of infrastructure, and limited awareness (Shaikhzada et al., 2025). These findings align with previous research showing that socio-economic constraints and limited access to technology can hinder the full potential of digital education initiatives (Moreira et al., 2024; Samuel et al., 2020).

Overall, the study confirms that digital education and AI are crucial enablers for empowering women and advancing sustainable development in Afghanistan. By providing flexible learning environments, fostering digital literacy, and promoting access to AI tools, higher education institutions can significantly enhance women's academic, economic, and social outcomes. Future policies should prioritize equitable access, digital infrastructure, and capacity-building programs to ensure that these technological advancements benefit all women, thereby contributing to broader national development objectives (Quraishi et al., 2025; Ebrahimi, Popalzay, et al., 2025).

Conclusion

This study examined the impact of digital education and artificial intelligence (AI) on the empowerment and sustainable development of women in Afghanistan. The findings indicate that digital learning platforms and AI-based tools significantly enhance women's access to education, academic performance, and skill development. Students who frequently engaged with digital platforms reported improved learning outcomes, greater confidence, and enhanced technological competence, demonstrating the transformative potential of digital education in bridging socio-cultural and geographical barriers.

The study also highlighted that AI tools, including chatbots, automated feedback systems, personalized learning platforms, and research support tools, play a critical role in facilitating personalized learning, efficient academic management, and digital empowerment. Furthermore, students recognized the broader societal impact of digital education and AI, particularly in promoting women's access to education, improving employment opportunities, fostering innovation and entrepreneurship, and contributing to sustainable development initiatives.

Despite these positive outcomes, the study identified challenges that may hinder the effectiveness of digital education and AI integration. These include limited digital literacy, insufficient infrastructure, socio-economic constraints, and unequal access to technology among certain groups of students. Addressing these barriers is essential to ensure that digital education and AI reach their full potential in empowering women and fostering sustainable development.

Acknowledgments

The authors would like to thank all the students who participated in the development and testing of the open-source repository, including high school and undergraduate students who contributed to data processing, coding, visualization, and documentation. Their participation played an important role

in improving the repository and demonstrating its pedagogical value for teaching geospatial data analysis and urban planning concepts. The authors also acknowledge the providers of open-access datasets, including OpenStreetMap, Microsoft Building Footprints, WorldPop, and NASA, whose data made this research possible.

Author Contributions

All authors have contributed to completing this manuscript

Funding

For research This research received no external funding.

Conflicts of Interest

The authors declare no conflict of interest.

References

- Alam, M. I., Khatri, S., Shukla, D. K., Misra, N. K., Satpathy, S., & Hakimi, M. (2025). Blockchain-based coal supply chain management system for thermal power plants. *Discover Computing*, 28(1), 61. <https://doi.org/10.1007/s10791-025-09512-6>
- Nadry, Z., Sirat, A. W., Hakimi, M., & Quraishi, T. (2025). Integrating Blockchain In Educational Management Systems: Transparency And Accountability In Public Administration. *Jurnal Ilmiah Dinamika Sosial*, 9(2), 286-309. <https://doi.org/10.38043/jids.v9i2.7079>
- Sirat, A. W., Hakimi, M., Himmat, B., & Enayat, W. (2025). Artificial intelligence in educational leadership: Strategic, analytical, interactive, and decision-making applications for the digital age. *Jurnal Ilmiah Telsinas Elektro, Sipil dan Teknik Informasi*, 8(2), 210-224. <https://doi.org/10.38043/telsinas.v8i2.7044>
- Tarashtwal, O., Hakimi, M., & Naderi, Z. (2025). The role of artificial intelligence in achieving the UN sustainable development goals (SDGs) in low income nations. *Jurnal Ilmiah Akuntansi dan Bisnis*, 10(2), 163-178. <https://doi.org/10.38043/jiab.v10i2.7184>
- Tarashtwal, O., Sirat, A. W., & Nadry, Z. (2026). From Space to Society: Integrating Remote Sensing and GIS to Monitor Educational Infrastructure and Social Transformation. *Indonesian Journal of Education and Social Studies*, 5(1), 150-167. <https://doi.org/10.33650/ijess.v5i1.14221>
- Abd Karim, R. (2025). *The role of artificial intelligence in advancing gender equality and women's empowerment in academia: A conceptual framework*. *European Scientific Journal*, 21(43), 73-. <https://doi.org/10.19044/esj.2025.v21n43p73>
- Alizada, Z., Mohammadi, F., & Sahibzada, F. (2025). *The role of AI technology in advancing education, empowerment, and entrepreneurship for Afghan women*.

- Journal of Digital Learning and Distance Education*, 4(6), Article 606. <https://doi.org/10.56778/jdlde.v4i6.606>
- Alkhwaja, L., Idris, M., Al-Sayyed, S., & Al Jaber, A. M. (2025). *Exploring the impact of artificial intelligence on students' skills for sustainable development. Frontiers in Education*, 10, Article 1691148. <https://doi.org/10.3389/feduc.2025.1691148>
- Alruwaili, N. M., Ali, Z., Siddiqui, M. S., Butt, A. H., Ahmad, H., Ali, R., & Alsalem, S. H. (2025). *Exploring the impact of female student's digital intelligence on sustainable learning and digital well-being. Sustainability*, 17(14), 6632. <https://doi.org/10.3390/su17146632>
- Ebrahimi, M., Hussaini, Z., Ghory, R., Ali Yari, T., & Ahmadi, L. (2025). *The role of artificial intelligence in fostering women's growth and leadership in the modern world. International Journal of Multidisciplinary Research and Literature*, 4(3), 335. <https://doi.org/10.53067/ijomral.v4i3.335>
- Ebrahimi, M., Popalzay, S., Azamy, N., Karimi, S., & Quraishi, T. (2025). *The role of AI in empowering women in educational systems: A case study of the online university. International Journal of Global Sustainable Research*, 3(2), 2986. <https://doi.org/10.59890/ijgsr.v3i2.2986>
- Ebrahimi, M., Rahimi, B., Sharifi, M., Sadat, D., Amiri, N., Khalil, S., & Quraishi, T. (2024). *Empowering women through artificial intelligence: Opportunities and challenges. Journal Electrical and Computer Experiences*, 2(2), 38–46. <https://doi.org/10.59535/jece.v2i2.346>
- Hakimi, M., Quchi, M. M., Hasas, A., & Fazil, A. W. (2024). *The transformative power of information and communication technology in empowering women in Afghanistan. Journal of Social Science Utilizing Technology*, 2(1), 275–287. <https://doi.org/10.70177/jssut.v2i1.702>
- Haqbeen, J., Sahab, S., & Ito, T. (2022). *A digital initiative to address girls' education challenges in post-2021 Afghanistan. IIAI Letters on Informatics and Interdisciplinary Research*, 4(176), Article 176. <https://doi.org/10.52731/liir.v004.176>
- Lashari, A. A., Wassan, I. A., & Larik, A. H. (2025). *Assessing the impact of digital inclusion on women's economic empowerment in the age of artificial intelligence. International Journal of Social Sciences Bulletin*, 3(1). <https://doi.org/10.5281/zenodo.15710865>
- Moreira, L. F. R., Soares, L. S., & Martinhago, A. Z. (2024). *Inspiring women in technology: Educational pathways and impact. Anais do XVIII Women in Information Technology (WIT 2024)*, 325–330. Retrieved from arXiv. <https://arxiv.org/abs/2412.17960>
- Nasrati, S. N., Khalil, D., Ahmadi, L., & Quraishi, T. (2024). *Digital empowerment of women: The role of the internet in an online university setting. Socio-Economic and Humanistic Aspects for Township and Industry*, 2(3), 326. <https://doi.org/10.59535/sehati.v2i3.326>
- Nesari, N., Hosseini, M., Saberi, N., & Quraishi, T. (2024). *Bright future: The role of online educational technology in empowering the academic advancement of Afghan women. Gameology and Multimedia Expert*, 2(4), 114–121. <https://doi.org/10.29103/game.v2i4.23163>
- Quraishi, T., Faizi, F., Shewa, F., Shewa, H., Sadat, A., & Moradi, S. (2025). *Educate a woman, empower a nation: The role of education in women's socioeconomic advancement in Afghanistan. International Journal of Multidisciplinary Research and Literature*, 4(4), 348. <https://doi.org/10.53067/ijomral.v4i4.348>
- Quraishi, T., Hashimi, A., Yasini, S., Barak, P., Amani, Z., & Sahel, S. A. (2025). *Examining the influence of digital learning on women's education in Afghanistan: An in-depth analysis. Journal of Digital Learning and Distance Education*, 2(11), Article 234. <https://doi.org/10.56778/jdlde.v2i11.234>
- Samuel, Y., George, J., & Samuel, J. (2020). *Beyond STEM, how can women engage big data, analytics, robotics and AI?* (Working paper). Retrieved from arXiv. <https://arxiv.org/abs/2003.11746>
- Shaikhzada, N., Mohammadi, L., Rahmani, L., Asghari, T., Hosseini, M., & Quraishi, T. (2025). *Challenges and opportunities for Afghan women in the digital world in Afghanistan. International Journal of Applied Research and Sustainable Sciences*, 3(3), 261–272. <https://doi.org/10.59890/ijarss.v3i3.5>
- Sharma, K. A., & Sharma, B. S. (2026). *Impact of digital literacy on women's economic empowerment in rural Rajasthan. International Journal of Research in Social Science and Humanities (IJRSS)*, 1(3). <https://doi.org/10.47505/IJRSS.2026.1.3>
- Hakimi, M., Amiri, G. A., Jalalzai, S., Darmel, F. A., & Ezam, Z. (2024). *Exploring the integration of AI and cloud computing: navigating opportunities and overcoming challenges. TIERS Information Technology Journal*, 5(1), 57–69. <https://doi.org/10.38043/tiers.v5i1.5496>