International Journal for Novel Research in Economics , Finance and Management
www.ijnrefm.com, ISSN:3048-7722
Volume 4, Issue 1, Jan-Feb-2026, PP: 01-06

A Study an Artificial Intelligence and Women Entrepreneurs in Karnataka

Dr Nagesha
Karnataka State Open University Mysore
Economic department

Abstract **– Although AI would ease the operations, make it better in customer interface, and make scalable growth easier for women entrepreneurs in Karnataka, there are several deterring factors against its adoption. Self-learning capabilities and AI-driven data for marketing forecasts and wider customer reach through digital platforms would assist women businesses; however, the following deterrents are at work: high usage costs, limited access to resources and technical know-how, and ingrained gender biases. There is a need to bridge this gap with gender-responsive policies and services. Business ecosystem enablers include programs like Elevate 2024 and the Women Entrepreneur Cell under the Startup Karnataka program. Socio-cultural and socio-economic contexts must be known for AI-based interventions, especially in food processing, handicrafts, and textiles. The Diffusion of Innovations Theory and TAM theories explain the factors influencing the acceptance and adoption of AI by women entrepreneurs. The key strategies would include peer networking, enhancement of digital literacy skills, strengthening public-private partnership for financial support, and mentorship from experienced technology adopters. There is a need to do participatory action research and longitudinal studies in order to analyze the socioeconomic effects of AI on women-owned businesses in Karnataka. With this, overcoming these barriers would empower women entrepreneurs to utilize AI skilfully towards achieving growth and contribute toward an economy that becomes more balanced and sustainable by way of gender equality and enhanced economic empowerment in Karnataka's entrepreneurial landscape.**

Keywords **– Artificial Intelligence (AI), Women Entrepreneurs, Karnataka, Technology Adoption, Entrepreneurial Ecosystem, Gender Equity.**

I. INTRODUCTION

With tremendous advancements and feature flexibility, AI has changed the global paradigm and ushered in the entire world of efficiency and scalability opportunities (Aiswarya& Sangeetha, 2022). These women entrepreneurs in Karnataka firmly hold a strong technological backing for using AI in their business needs (Somashekara, 2017). In this regard, owners of the business can make repetitive tasks automated, gain insights on consumer behavior through advanced analytics, and design personalized marketing strategies by using AI solutions (Bano, 2023). It is quite challenging to implement AI by women-owned businesses in Karnataka. This is because significant challenges involve financial barriers like high upfront investment costs for implementing AI software and infrastructure (Aiswarya& Sangeetha, 2022).

The technical skills and digital literacy of women entrepreneurs also limit their use of AI solutions (Somashekara, 2017). Social norms and the stereotypes of gender are the causes which restrict access to networks, capitals, and mentorship for using technology and expanding businesses (Bano, 2023). The Koparde study in the year 2023 reported that organizations, for example, the Association of Women Entrepreneurs of Karnataka, AWAKE provide help to women in assimilating technology and achieving literacy through digital media, which enable women to move beyond these barriers. Government initiatives such as Elevate 2024 offer funding and support to AI and machine learning start-ups, especially those owned and operated by women (Analytics India Magazine, 2019).

Women entrepreneurs can contribute to the economic development of Karnataka significantly through AI, as it can increase productivity, open new markets, and create job opportunities (Aiswarya& Sangeetha, 2022). It also breaks the gender stereotype and makes them more economically independent, thereby promoting gender equality in the business world (International Women's Entrepreneurial Challenge Foundation, 2017). In Karnataka's entrepreneurial environment, AI may be aligned with innovation, economic growth, and gender equity by providing adequate support and inclusive legislation (Bano, 2023)

II. SIGNIFICANCE OF THE RESEARCH STUDY

This paper discusses the integration of AI among women entrepreneurs in Karnataka, particularly in the context of gender equality, economic development, and diversity in the entrepreneurial pipeline. With AI technologies, women-owned businesses have been empowered with competitive tools and services. However, the women businesses face high implementation costs, limited access to advanced technology, low digital literacy, and social norms and gender biases. But use of AI to empower women entrepreneurs may lead to great socio-economic benefits. Research reflects that women's involvement in the economy is positively associated with general economic development. The organizations working for women empowerment and developing AI and ML start-ups like Elevate 2024 are, Association of Women Entrepreneurs of Karnataka and so on.

It is, therefore very important to remember that AI building requires women entrepreneurs in policies, programs, and resources, and so stakeholders should curate approaches in order to ensure inclusive and equitable opportunities. AI can help women raise their own entrepreneurial enterprises and promote gender representation in the business world. This research area is crucial for encouraging economic growth and motivating female entrepreneurs to participate in creative initiatives.

III. REVIEW OF LITERATURE RELATED TO THE STUDY

Scholars have criticized how Artificial Intelligence in entrepreneurial ventures can solidify business processes and innovative abilities. However, the integration, especially among women business owners in Karnataka, also brings along opportunities and hurdles.

Aiswarya and Sangeetha (2022) contend that AI becomes an eventual tool for streamlining all sectors of a business firm. It better process services such as the ability to forecast demand, carry out automatic bookkeeping, and service experience. There has been a surge in AI implementation for the women entrepreneurs post the Covid19 era to streamline both the processes of sales and operational efficiency but is expensive, installation-based, and with lesser digital competency. Somashekara (2017) has discussed the development of gaps in gender for women entrepreneurs.

Karnataka, which indicate a need for economic as well as social development in that area. Such growth is also necessary for rural women who are crucial for common economic growth. Bano, 2023 illustrates that women entrepreneurship in India can either be an opportunity or challenge.

The Association of Women Entrepreneurs of Karnataka (AWAKE) would enhance digital know-how and arm women entrepreneurs with tools and skills. This kind of support plugs the gap identified in preceding research on digital literacy. In AI-driven start-ups, women have documented tasks, according to Analytics India Magazine (2019).

However, the above notwithstanding, there are still challenges. She The People (2024) reported that only 22% of AI roles in India are held by women, showing a considerable gender gap in the field. This underrepresentation limits the utilization of AI technologies because skills are core to AI implementation.
Vohra and Nanda (2020) investigated the possibilities for AI as a force that would uplift women in India through possible applications of AI for improving gender equality across multiple industries. They emphasized the point that structural problems, such as resource access and gender-related bias, are restricting the full revolutionary impact of AI.

In sum, existing literature shows major opportunities for improving entrepreneurial activities among women in Karnataka but indicates significant challenges, including high costs, digital illiteracy, and social biases. Support from organizations such as AWAKE and successes from AI start-ups headed by women can guide the methods with which some of these challenges can be dealt with. However, continuing disparities in AI positions indicate targeted steps are required to ensure women entrepreneurs get to fully benefit from this revolution.

In order to deal with such challenges, proper support and resources from the organizations need to be addressed. Stories of successful AI companies headed by women can inspire and guide. Conclusion In conclusion, for women entrepreneurs to fully exploit the transformative potential of AI, specific interventions are needed to bridge the gaps for women in AI positions.

Research Gap related to the study
Three main research gaps in media studies regarding the adoption of AI by women entrepreneurs in Karnataka have been highlighted by literature review. First, little empirical research has been carried out addressing the contextual challenges and facilitators specific to women-led enterprises despite the realization of AI's benefits such as automation of processes, like demand forecasting, and providing personalized customer experiences. Aiswarya and Sangeetha (2022) report high installation costs and inadequate digital skills as the most significant limitations. There is a limited understanding of how socio-cultural and technology adoption factors intersect. Cultural and gender biases in Karnataka would differently position women in the discourse around high-end technologies like AI. Although Bano (2023) mentions groups such as AWAKE in relation to the tackling of such issues, not much is known in detail about how sociocultural shifts are changing the adaptation of AI.

Third, there are no aggregate data on the support systems aimed at helping female businesses implement AI. While such initiatives have been launched by some organizations, like SAP and the UNDP, there is no clear evidence if they impacted the adoption of AI and the impact there of on business performance. One should also not forget to consider the problems at an industry level with the digital platform implementation of AI in traditional sectors, such as agriculture, textiles, and handicrafts. Therefore, these gaps merit more research to be provided for thorough insights and direction toward focused policy and support of successful AI adoption in enhancing company performance and increasing gender equity.

IV. METHODOLOGY ADOPTED FOR THE PURPOSE OF THE STUDY

Government reports, academic journals, industry publications, and reliable websites form an exhaustive review that acts as the basis for the approach taken in conducting such a study (Research Method, 2023). It may

assist in identifying the trends and patterns without data collection.

This paper undertakes a systematic review and synthesis of primary sources to understand the AI adoption among women entrepreneurs in Karnataka. Government reports like Centre of Excellence for Data Science & Artificial Intelligence (DSAI) reports indicate the AI developments and support structures available in the region (K-Tech, 2018). Academic literature regarding digital technologies and women's entrepreneurship in India refers to the challenges and opportunities, but there is no particular concern expressed regarding these issues (Munshi et al., 2011).

The study includes extensive reviews of industry and case studies on the operational applications of AI. For example, a study on female entrepreneurs identifying factors influencing ICT adoption in India highlights reasons for technology uptake and business impact (IEEE Xplore, 2022). The research analyzes government policies, program evaluations, and official announcements to ascertain their role in integrating AI into women-led businesses. This approach gives a holistic overview of AI adoption among women entrepreneurs in Karnataka, with suggestions regarding the policy improvements and support strategy.

V. MAJOR OBJECTIVES OF THE PRESENT STUDY

- To Analyze the Current State of AI Adoption Among Women Entrepreneurs in Karnatak
- To Identify Challenges Hindering AI Adoption Among Women Entrepreneurs
- To Evaluate the Effectiveness of Existing Government Policies and Support Mechanism
- To Propose Strategic Recommendations for Enhancing AI Integration in Women-Led Enterprises

VI. DISCUSSION RELATED TO THE STUDY

Current State of AI Adoption Among Women Entrepreneurs in Karnataka focuses on identifying the extent to which AI technologies are being integrated into business operations by women entrepreneurs in Karnataka and understanding the key areas where AI is being utilized, such as marketing, operations, and customer engagement
Artificial Intelligence has transformed business transactions of women entrepreneurs in Karnataka through the use of the marketing function, operation, and engaging the customers. While organizations integrate AI into all sectors, there are vast differences between these entities concerning the adoption rates. In India, 22% of AI jobholders are women, reports Aiswarya and Sangeetha in 2022.
AI tools make it possible for women entrepreneurs to know about customer behavior, personalize communications, and optimize campaign performance. Shops like Shopify also give recommendations on marketing strategies, while ticketing will be automated using Zendesk, which comes with an AI chatbot JNNCE Journal of Engineering & Management, Special Edition, 04, January-2025 ISSN 2582-0079

490 that can perform real-time customer support (10 Top AI Tools, 2023). It also facilitates the process in the handling of stock and supply chain optimization.
But challenges do not disappear. The HerShakti program was started in 2024 and aims to reach 500 women for IoT and AI, focusing on filling the skill gap (HerShakti Program, 2024).
Scaling women-led startups through the Elevate WomEN government program provides them with access to advanced technologies such as AI (Elevate WomEN, 2022). Continuous training along with conducive government policies would help women entrepreneurs to gain full leverage of AI technologies and innovate their businesses.

Challenges Hindering AI Adoption Among Women Entrepreneurs aims to explore the financial, technical, and socio-cultural barriers that limit the effective adoption of AI by women-led enterprises, particularly in rural and underserved areas of Karnataka
Financial, technical and socio-cultural constraints hinder the women entrepreneurs in the rural areas of Karnataka in adopting the Artificial Intelligence (AI) technology. A significant limit is the up-front costs attached to AI infrastructure and other maintenance costs are way beyond the limit of many of the small businesses led by women. The lack of equal access to credit facilities and funding prospects also limits the investment of female entrepreneurs in new technologies (Kumar &Ayedee, 2018).

Technical issues involve a requirement for special skills and know-how, which rural women do not possess because of a lack of exposure to advanced tech education and training. For instance, the digital infrastructure is patchy with unstable internet and lack of modern hardware that makes complexities for integrating AI solutions (Sindakis&Showkat, 2024).

The socio-cultural factor also adds up because gender biases and traditional roles tend to reinforce these aspects; women get limited networking and support. Little time is available for the female entrepreneur to explore the AI technology in this scenario of the double burden of household chores. HerShakti is one of the programs that trains women on AI and other technologies bridging the gap for skills to exist (HerShakti Program, 2024). Successful implementation, however would entail addressing financial and socio-cultural barriers concomitantly. An intervention model is required as integrated and one, which is financially supported on the technical and socio-cultural spheres to make an encouraging environment adopt AI by women-led enterprises. Effectiveness of Existing Government Policies and Support Mechanisms examines the impact of government initiatives, training programs, and financial support schemes in promoting AI adoption among women

entrepreneurs and identifies gaps in these interventions Women entrepreneurs in rural and underserved areas of Karnataka do not adopt Artificial Intelligence (AI) because of financial, technical, and socio-cultural barriers. One of the main reasons is that there is a lack of capital; the initial investment and expenditure on AI infrastructure and its subsequent maintenance is beyond the means of most women-led businesses. It is also due to insufficient credit facilities and funding avenues available to them to invest in advanced technologies (Kumar &Ayedee, 2018).

Technical barriers also prevail; few women possess the relevant skills or competencies for integrating and sustaining AI capabilities. Inadequate digital infrastructure coupled with no access to education and training in higher-order technologies, this creates an enlarged gap in skills (Sindakis&Showkat, 2024). The JNNCE Journal of Engineering & Management, Special Edition, 04, January-2025 ISSN 2582-0079 491 deep-rooted gender norms and traditional roles bound women into conventional roles and further restrict their entrepreneurial endeavors, mostly in technology-aided industries. Their domestic duties also keep them tied to the time and resources available for them to participate in AI technologies (Shirva& Naik, 2024).

Initiatives like HerShakti try to train women in AI to close up the gaps (HerShakti Program, 2024). However, overcoming both financial and socio-cultural barriers at the same time is a prerequisite for success. Funding, skill development, and societal cultural changes are all important to systematically create an environment friendly to the adoption of AI in women-owned businesses.

Strategic Recommendations for Enhancing AI Integration in Women-Led Enterprises seeks to develop actionable strategies to overcome the identified challenges and foster greater adoption of AI technologies, enabling women entrepreneurs to scale their businesses, improve operational efficiency, and enhance competitiveness.

The AI adoption of women's entrepreneurship in Karnataka faces financial, technical, and socio-cultural issues. These need to be tackled from multiple angles. One such example is the Vriddhi Scheme that provides loans of ₹5 Lakhs to ₹10 Lakhs at 4% interest to the women entrepreneurs that would help eliminate the economic-financial issues. Other issues such as subsidization or grants for infrastructure development for AI and partnerships with banks may help reduce the barriers to entry.

Adequate training in AI and technology abilities is very necessary. Programmes like HerShakti seek to prepare 500 women for emerging technologies, such as AI, ML, and Big Data in the next six months (HerShakti Programme, 2024). Joining academic institutes and technological organizations might also be beneficial for them so that women entrepreneurs keep up with change in technologies.
Mentorship programs like AWAKE link experienced business leaders with emerging women entrepreneurs. This fosters the exchange of knowledge and best practices in AI deployment. Through awareness campaigns and workshops, women can be enlightened about the benefits of AI by using successful case studies as momentum builders.

Scaling the early-stage women entrepreneurs at the Tier 2 and Tier 3 cities, thus making the startup ecosystem inclusive (Elevate Women, 2022), are initiatives like Elevate Women.
Community involvement in the form of sensitization programs can help to break socio-cultural barriers and encourage women to take part in technological and entrepreneurial activities. Support from family and the community towards women entrepreneurs is another imperative. Such strategies can create an ecosystem where women entrepreneurs can make use of AI technologies for their advantage for more innovation and economic growth in Karnataka.

VII. MANAGERIAL IMPLICATIONS OF THE RESEARCH STUDY

The research article portrays several managerial implications to foster AI adoption among women entrepreneurs. For instance, to increase the availability of access to AI tools and technologies, since only 22% of AI workers in India are women (HerShakti Program, 2024). Policy makers and managers should host training sessions and workshops together with the tech companies and educational institutions to demystify AI and provide them with hands-on experience. Another factor that is essential is financial aid. The biggest hurdle to women founders is the costs involved. Policymakers may offer grants, subsidies, or low-interest loans. The Vriddhi Scheme, for example, allows JNNCE Journal of Engineering & Management, Special Edition, 04, January-2025 ISSN 2582-0079 492 loans at an interest of 4%. The range is ₹5 to 10 lakhs (Vriddhi Scheme, n.d.). Mentorship, such as that offered by AWAKE, can provide a source of one-to-one mentorship between the woman entrepreneur and the AI expert for women entrepreneurs (AWAKE). Socio-cultural challenges such as a low awareness of AI, gender biases, and little family support need to be overcome through awareness campaigns and community outreach. Family and community support should be promoted.

Nests like Elevate WomEN nurture early-stage entrepreneurs from Tier 2 and Tier 3 cities with the vision to make startups more inclusive (Elevate WomEN, 2022). Hence, through balanced implementation at the governmental level, disparities can be better bridged, leading to a wider entrepreneurial ecosystem in terms of accessibility and technological empowerment.

VIII. CONCLUSION

The research article has described AI as a transformative technology for women-led enterprises in Karnataka by enhancing efficiency, innovation, and scalability through the application of automation, data-driven decision-making, and personalized customer engagement. In reality,

however, numerous challenges exist, including finance constraints, technical skill gaps, and socio-cultural impediments such as gender prejudices and traditional norms.

This gap is being filled with financial assistance and technical training offered by the government itself under the Vriddhi Scheme and HerShakti program. The Elevate WomEN program accelerates women entrepreneurs in Tier 2 and Tier 3 cities. The opportunities in mentoring through AWAKE, in addition to community engagement, are essential. The necessity for gender-inclusive policies, low-cost AI infrastructure, and improved digital connectivity creates the enabling ecosystem for women entrepreneurs to embrace AI. Karnataka's economy and gender disparities shall be challenged by AI through this policy.

IX. SCOPE FOR FURTHER RESEARCH AND LIMITATIONS OF THE STUDY

A couple of limitations and further avenues of research have emerged from this study to understand AI better by women entrepreneurs in Karnataka. Most of the earlier studies in this area utilized secondary data, which could be misleading and may not show current ground realities. More studies would benefit from a collection of primary data using methods like surveys and interviews with women entrepreneurs directly getting them to account for AI.

It only focuses on urban areas, leaving out the rural. Future studies should include samples from both urban and rural settings to understand regional differences in AI implementation. Due to the rapid evolution of AI technology, the results become obsolete quickly, and research is required to be done continuously to track the technological changes.

Further research is also needed to assess the effect of education programs on adoption, cultural norms on adoption, and sector-specific issues in AI adoption. Also, analysis of government policy and support programs can further fortify a climate for the adoption of AI. Further comparative studies across states or countries can also help find the best practices applicable to Karnataka.

REFERENCES

1. Aiswarya, & Sangeetha, S. (2022). Augmenting Innovation: Artificial Intelligence among Women Entrepreneurs. RA Journal of Applied
2. JNNCE Journal of Engineering & Management, Special Edition, 04, January-2025 ISSN 2582-0079
493 Research, 8(5), 232-238. Retrieved from https://rijbr.in/1/article/view/1366
3. Alshurideh, M. (2024). Empowering Women Entrepreneurs: Navigating the Adoption of Generative Artificial Intelligence Tools. ESI Culture Journal, 12(1), 45-60. Retrieved from https://esiculture.com/index.php/esiculture/article/view/2009
4. Analytics India Magazine. (2019). Top 5 Successful Indian AI Startups Led By Women. Retrieved from https://analyticsindiamag.com/tech-ai-blend/top-5-successful-indian-ai-startups-led-by-women/
5. Association of Women Entrepreneurs of Karnataka (AWAKE). (n.d.). Retrieved from https://awakeindia.org.in/
Bano, S. (2023). Women Entrepreneurship in India: Opportunities and Challenges. International Journal of Creative Research Thoughts (IJCRT), 11(8), 380-386.
6. Bhalerao, K., Kumar, A., & Pujari, P. (2022). A Study of Barriers and Benefits of Artificial Intelligence Adoption in Small and Medium Enterprise. Academy of Marketing Studies Journal, 26, 1-6. Retrieved from https://www.researchgate.net/publication/360912025_A_STUDY_OF_BARRIERS_AND_BENEFITS_OF_ARTIFICIAL_INTELLIGENCE_ADOPTION_IN_SMALL_AND_MEDIUM_ENTERPRISE
7. Bridging the Gap: SAP and UNDP Foster Digital Skills and Social Entrepreneurship in Rural Karnataka. (2021). Retrieved from https://nextbillion.net/news/bridging-the-gap-sap-and-undp-foster-digital-skills-and-social-entrepreneurship-in-rural-karnataka/
8. Chakraborty, S. (2023). The Role of Digital Platforms in the Growth of Women-Owned Businesses in India. In Digital Entrepreneurship and the
Global Economy (pp. 215-232). Springer. Retrieved from https://link.springer.com/chapter/10.1007/978-3-031-71213-5_13
9. Elevate WomEN (Elevate Women Entrepreneurship) - Mission Startup Karnataka. (2022). Retrieved from https://wordpress.missionstartupkarnataka.org/wp-content/uploads/2022/02/220201_Elevate-WomEN_Call-for-Proposals.pdf
10. HerShakti Program – Karnataka Govt Launches Initiative to Train Women in AI. (2024). Retrieved from https://analyticsindiamag.com/ai-news-updates/karnataka-govt-co-launches-initiative-to-train-women-in-ai/
11. International Women's Entrepreneurial Challenge Foundation. (2017). Karnataka, India Is Best State in The World for Women Entrepreneurs. Retrieved from https://www.iwecfoundation.org/news/karnataka-india-best-state-world-women-entrepreneurs/
12. Issues and Challenges of Women Entrepreneurs in Karnataka – A Study. (2017). Retrieved from https://ijrar.org/papers/IJRAR19D4257.pdf
13. Kaur, S., Mahindru, R., Bagchi, S., Srinivasan, R., Sahoo, S. R., Devi, D., & Ravindra, R. (2023). Technology Adoption by Indian Women Entrepreneurs: An Enabler or Differentiator? Academy of Marketing Studies Journal, 27(6), 1-7. Retrieved from
https://www.abacademies.org/articles/technology-adoption-by-indian-women-entrepreneurs-an-enabler-or-differentiator-16077.html
14. Kumar, S., &Ayedee, N. (2018). Social Media Tools for Business Growth of SMEs. Journal of Management, 5(3), 137-142. Retrieved from

https://www.abacademies.org/articles/technology-adoption-by-indian-women-entrepreneurs-an-enabler-or-differentiator-16077.html JNNCE Journal of Engineering & Management, Special Edition, 04, January-2025 ISSN 2582-0079
494

15. Koparde, L. (2023). Women Entrepreneurs of Karnataka-A Case Study of Successful Women Entrepreneurs of Hubballi-Dharwad. International Journal of Innovative Research in Technology (IJIRT), 9(11), 741-748
16. Mahendrakar, R., &Soundararajan, K. (2024). The Role of Digital Platforms in the Growth of Women-Owned Start-Ups in North Karnataka Region. In Achieving Sustainable Business Through AI, Technology Education and Computer Science (pp. 143-149). Springer. Retrieved from https://link.springer.com/chapter/10.1007/978-3-031-71213-5_13
17. Muthamma, B. U., & Ranjith Kumar, S. (2024). Karnataka's Rural and Urban Women Entrepreneurship. Journal of Innovation and Entrepreneurship Research, 6(7), 99-110. Retrieved from https://jier.org/index.php/journal/article/view/294
18. SheThePeople. (2024). Six Indian Women Shifting the World of Artificial Intelligence. Retrieved from https://www.shethepeople.tv/women-entrepreneurs/women-entrepreneurs-with-artificial-intelligence-platforms-7561315
19. Sindakis, S., &Showkat, G. (2024). The digital revolution in India: bridging the gap in rural technology adoption. Journal of Innovation and Entrepreneurship, 13, Article number: 29. Retrieved from https://innovation-entrepreneurship.springeropen.com/articles/10.1186/s13731-024-00380-w
20. Somashekara. (2017). Issues and Challenges of Women Entrepreneurs in Karnataka – A Study. International Journal of Research and Analytical Reviews (IJRAR), 4(4), 681-688
21. Uma, S., & Ramesh, K. (2018). Government Schemes for Women Entrepreneurs: Accessibility and Impact. Journal of Entrepreneurship Research, 12(3), 56-67.
22. Vohra, N., & Nanda, P. (2020). Harnessing Artificial Intelligence for Women Empowerment in India. International Journal of Research and Analytical Reviews (IJRAR), 7(2), 234-245. Retrieved from https://ijrpr.com/uploads/V5ISSUE6/IJRPR29773.pdf