

Leveraging AI to Empower Women Entrepreneurs: Navigating Opportunities, Overcoming Challenges, and Fostering Inclusive Growth

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Abstract: Artificial intelligence is currently revolutionizing the entrepreneurial market. Technology offers women entrepreneurs opportunities to further break into the male-occupied entrepreneurship world, as expressed in two perspectives, that is, it is a tool and a challenge. This research paper discusses the impact of artificial intelligence on women entrepreneurs, and the associated opportunities, challenges, and strategies. The primary thesis of the analysis is how artificial intelligence affects women and women-led businesses. The analysis of the modern applications of AI demonstrates women's access to opportunities such as cross-cultural markets, improved decision-making processes, and easy predictability of the future using trends. However, the major barriers include gender-inclusivity barriers, limited access to AI, and a gap in digital literacy. The paper offers suggestions, including investing in the education of women on the use and adoption of AI, developing AI that is inclusive and supports women entrepreneurs, and a mission of friendly programs to improve the entrepreneurial business environment. The presentations of AI as a tool and a challenge for women entrepreneurs are helpful approaches that the context offers. The research provides a critical resource in the analysis of the impact of AI on women entrepreneurs.

Keywords: Artificial Intelligence, Women Entrepreneurs, Inclusive Growth, Gender Bias, Digital Skills, AI Empowerment.

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I. INTRODUCTION

➤ *The Transformative Potential of Artificial Intelligence (AI)*

One of the most transformative technologies in the 21st century, Artificial Intelligence has been increasingly effective in a wide variety of sectors, including healthcare, finance, education, and manufacturing. In the simplest terms, the concept refers to the development of algorithms and systems that can perform tasks that would naturally require human intelligence, such as learning, reasoning, problem-solving, and decision-making. Besides its capacity to influence most human activities, the high pace of development in AI technologies, especially in machine learning, natural language processing, or robotics, reveals new opportunities for businesses of any size. On the one hand, the technology drives productivity and reduces costs; on the other hand, it provides firms and entrepreneurs with tools that foster innovation, which allows smaller businesses to participate in several changes and create new value propositions that would not otherwise be considered. At the same time, AI

technologies result in a series of challenges because their benefits are not equitable among the population [5].

Women entrepreneurs, who have been held back for years by social or economic systems, now face specific problems when trying to access AI technologies and apply them to their companies. If to take into account deeper social, economic, and technological factors that combine to form unique challenges for women when creating and growing a business, the challenges are more deep-rooted [18]. At the same time, technology opens an unprecedented opportunity for women to overcome battle-tested barriers, innovate in a particular industry, and help achieve inclusive economic growth.

➤ *The Role of AI in Entrepreneurship*

From the very beginning, entrepreneurship has always been related to risk, innovation, and readiness to adapt to external circumstances. With the introduction of AI in the digital age, these features have been intensified. Entrepreneurship is the activity of building a commercial

enterprise from scratch or acquiring an existing one; this means that in an enterprise the entrepreneur should be the administrator of all risk, including the financial one. In today's digital age, thanks to AI, entrepreneurs can make data-based decisions, eliminate everyday human errors, and deploy on a larger scale. AI tools such as predictive analytics, customer tracking systems, and automated marketing systems allow entrepreneurs to understand customers, optimize operations, and personalize offers [1]. For example, chatbots work on company websites in the hope of sending messages at any time of the day to answer customer inquiries, or machine learning can keep an eye on the big data markets and optimally calculate the demand for high-demand services and support. Supply chains that indirectly reduce the intensity of supply. Women entrepreneurs also find AI to be a useful tool. Women entrepreneurs find such a phenomenon as resource constraints and add a problem of greater social isolation than men entrepreneurs. The introduction of AI reduces these types of activities. On the one hand, women can now save time on routine operations and spend more time strategically planning and developing their businesses. On the other hand, AI can also help women entrepreneurs reduce geographical location and inter-corporate barriers and compete with the offer of global companies, as it provides a worldwide reach for e-commerce companies. For example, Eu'Genia's employees in rural Ghana and Chicago monitor the blockchain transaction process on their laptops and sell four homemade products to people using e-commerce platforms. Such a model also requires a significant initial investment [9].

➤ *Gender Disparities in AI Access and Adoption*

The benefits and prospects of AI are numerous; however, the availability of such technologies to men and women is different. Many women entrepreneurs are less likely to obtain and implement AI-related technologies due to numerous social and economic disparities that restrict their access to education, finance, and technology. For instance, there are many studies where feminine representatives are underrepresented in the areas of science, technology, engineering, and mathematics [11]. As for AI, many areas that are directly and indirectly associated with it require, or at least benefit from, an AI approach, and it becomes complicated for women to access such technologies and be aligned with their benefits. This leads to the presence of barriers that do not allow many women to take advantage of such technologies for their business. Another issue that women face concerns their limited digital skills. AI requires some skills and knowledge with which not many women from developing countries are equipped. However, the problem is also in a lack of opportunities for such training, given that girls are less encouraged to pursue a career in tech than men. At the same time, even if some women entrepreneurs use AI for their business, they may be unable to access and properly apply such algorithms [6]. In this case, a key problem is repeated and replicated in other explanations, namely, the presence of biases: "In the context of AI, the root cause is the biases that occur in algorithms and data". To illustrate, many AI systems are not trained to serve women entrepreneurs' business needs if, for instance, the data are mainly on male owners and companies. AI systems use data with a limited female presence, which influences some decisions reflecting

gender disparity. They may be related to credit scoring, target audience, and business advice when women are refused a loan or receive irrelevant recommendations.

➤ *The Intersection of AI and Gender Equity*

The intersection of AI and gender equity is one of the most important areas of research because it emphasizes that AI technologies should be developed and used inclusively and equitably. Solving the problem of women entrepreneurs' limitations in accessing and using AI involves a complex approach: policy interventions, promoting education and training programs, and developing inclusive AI systems [12]. Contributing to the education of women entrepreneurs, governments and enterprises can foster women's AI literacy by providing the necessary knowledge and tools to understand and use AI services for their business. Moreover, developers can help women entrepreneurs overcome biases in AI systems by training their models on diverse and well-represented datasets. There is also a growing tendency toward acknowledging the benefit of gender diversity in AI development. A diverse team that contributes to the creation of AI solutions is more likely to consider the needs of various groups of users and come up with technologies that are more inclusive and equitable. By promoting gender diversity in AI development, organizations reduce the risks of gender biases by ensuring that AI systems are developed with women entrepreneurs' needs in mind [17].

➤ *Research Gap*

The research gap highlighted in the current literature on AI and women entrepreneurs is that existing studies do not concentrate on the particularities of women's obstacles and opportunities in adopting AI technologies, especially in India as a developing region. Most studies focus on general entrepreneurship, with little empirical evidence coming from women entrepreneurs who have already integrated AI technologies into their businesses. The analysis of the sector's specifics, such as the impact of AI in agriculture, education, retail, finance, etc., is also underexplored, while the world maps studies concentrate on developed countries, excluding the socio-economic and infrastructural constraints of developing regions. In addition, existing research focuses on the hurdles women entrepreneurs face, such as costs, lack of technical knowledge, and gender biases in AI, without providing actionable strategies for addressing them. The study's contribution is that it focuses on women entrepreneurs and the retail sector, provides empirical data from Indian real-life businesses, and describes opportunities for fostering inclusive AI development among women entrepreneurs.

II. REVIEW OF LITERATURE

- S. Shrestha et al. (2022): In this article, research papers address gender biases in machine learning and artificial intelligence algorithms with their detection strategies, as well as solutions proposed to mitigate the same. It illustrates the difficulties for algorithm developers and suggests that more research is needed to develop better ways of detecting, measuring, and decreasing gender bias. Although several techniques exist, their application in

practice is somehow limited [16].

- J. David Paton et al. (2022): Through the analysis of an empirical study, this paper addresses artificial intelligence and its interaction with social sustainability; focusing on gender equality—a major bottleneck in achieving SDGs proposed by the United Nations. Therefore, the added value of this study is that it provides a perspective to understand AI from societal impacts to encourage innovative research and solutions [4].
- Frielder et al. (2019): In this benchmark study, the authors assess various algorithms over fairness metrics and datasets to find that some models even prefer one way of preserving fairness
- . The research concludes that changes in dataset composition and pre-processing also have a significant impact on fairness-preserving algorithms. The difficulty in comparing methodologies comes partly from the fact that despite having common evaluation metrics, they often still vary considerably concerning preprocess and test setup. Fairness-aware machine learning algorithms are typically divided into three categories: pre-processing, algorithm modification, and post- processing [7].
- Pattanaik & Mishra (2024): In a recent study, Pattanaik and Mishra focus on the role of such capacities of artificial intelligence (AI) as they can be formative for gender equity and women empowerment at large. It is also claimed that AI can be used to reduce the gap between men and women in various industries such as education, healthcare, or finance. They describe, through various case studies how AI-driven solutions improve access to resources for women ultimately leading them toward economic empowerment and a role in decision-making processes [12].
- Roopaei et al. (2021): Roopaei et al. In another perspective paper, Alabdulmohsin et al. (2021) stress the importance of inclusion for women in AI because their absence results in low-quality products and increases societal bias. The paper articulates that such impediments as discrimination, non-availability of mentorship, etc. discouraged women from pursuing careers in the AI domain [25]. They recommend women will be able to participate if they are in the right settings and policy is done. They suggest that the solution would be for women will participate if they are in a supportive environment and policies disclaimed. The paper highlights that improving diversity in AI is crucial by giving life to efficient technologies, empowering a fair future [14]
- Sadok and Assadi (2023): Sadok and Assadi (2023) study the transformative potential of AI in bank credit analysis for women-led SMEs in developing countries. This demonstrates how AI's leverage of novel data sources can improve creditworthiness evaluations and ultimately boost the inclusivity of financial access for underserved borrowers. AI can help generate economic growth, and we see this with the case study of Lenddo in Ethiopia, where women entrepreneurs have seen better rates of credit access as a result. Yet the authors also acknowledge bias and ethics- related concerns of AI-driven credit analysis, calling for new regulatory frameworks that can maintain fairness and transparency in financial practices [15].

➤ Objectives

- To determine the level with which women entrepreneurs adopt AI and its implications on firm performance.
- To identify challenges in integration such as cost, technical skills, and gender bias into AI.
- To suggest measures to overcome challenges and support all-inclusive artificial intelligence adoption.

III. METHODOLOGY

The paper was designed to delve into AI adaptation by women entrepreneurs, challenges in integrating AI, and proposing strategies for inclusive growth in AI. Empirical Research Method In order to address the objectives, an empirical research method has been employed. Methods and data of the study. The methods and procedures used to collect data are explained in detail below [10].

➤ Data Collection Sample Selection:

A total of 40 women-led businesses were purposefully sampled from the retail, agriculture, education, and finance sectors. All these businesses that were using AI technologies had done so in the last 1–2 years, making it easy to see results for our analysis. For a variety of business sizes, seven small- and medium-sized enterprises were selected [7].

• Data Sources:

- ✓ Surveys and Interviews: Business owners were interviewed through semi-structured interviews to collect qualitative data about what motivated their adoption of AI, the challenges they faced, and its perceived impact on operations.
- ✓ Business Performance Metrics: The study assessed the quantitative data available in company records such as financial statements, operational metrics, and customer engagement details on performance before AI intervention.

➤ Data Analysis Quantitative Analysis:

- Pre- and Post-AI Comparison: Paired t-tests were used here to find out the significant differences in both performance indicators (revenue growth, operational efficiency, customer retention) before and after AI adoption
- Descriptive Statistics: The mean, median, and standard deviation of each sector's performance were calculated to give a clear representation of the overall trends.

• Qualitative Analysis:

- ✓ Thematic Analysis: For example, the interviews were analyzed for themes around why an adopter chose to use AI, what challenges they are facing today, and themes in gender biases that emerge in which technologies.
- ✓ Control Group: The group of AI businesses was compared against a control group of 10 women- led businesses that

had not implemented any type other than HR or Market Feasibility Analysis, to test whether the benefits demonstrated in AI were unique due to implementing an also such as AI.

IV. RESULTS

Below are the findings from the research with both qualitative and quantitative data gathered for a holistic

understanding of AI adoption and its effect.

A. Quantitative Analysis Revenue Growth:

Post-AI adoption, businesses experienced an average revenue growth of 20%, with the retail sector observing the highest growth at 25% as seen in Table 1. and Fig 1. AI tools for personalized marketing and customer analytics were particularly effective in retail [13].

Table 1 Revenue Growth Across Sectors before and after AI Adoption

Sector	Revenue Before AI (\$)	Revenue After AI (\$)	Revenue Growth (%)
Retail	100,000	125,000	25%
Agriculture	80,000	96,000	20%
Education	120,000	144,000	20%
Finance	150,000	180,000	20%
Overall	-	-	21.25%

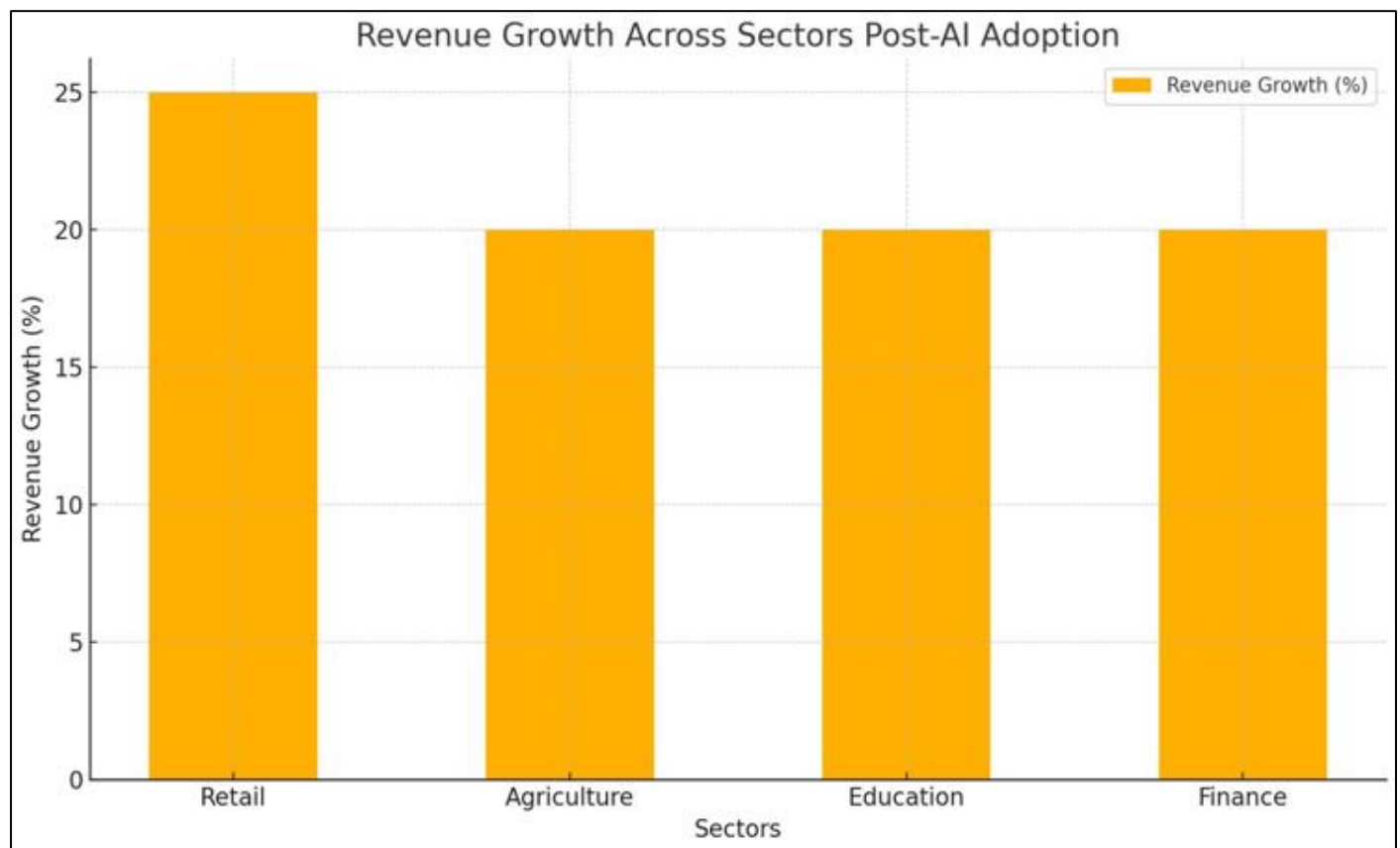


Fig 1 Revenue Growth Across Sectors Post AI Adoption Operational Efficiency

Businesses reported an increase in efficiency due to automation. The agriculture sector observed the greatest improvement in efficiency, mainly through predictive

analytics for crop management, showing a 35% increase in operational efficiency as seen in table 2 and Fig 2 [8].

Table 2 Efficiency before and after Implementation of AI by Various Sectors

Sector	Efficiency Before AI (%)	Efficiency After AI (%)	Efficiency Increase (%)
Retail	60%	85%	25%
Agriculture	55%	90%	35%
Education	65%	95%	30%
Finance	70%	100%	30%
Overall	-	-	30%

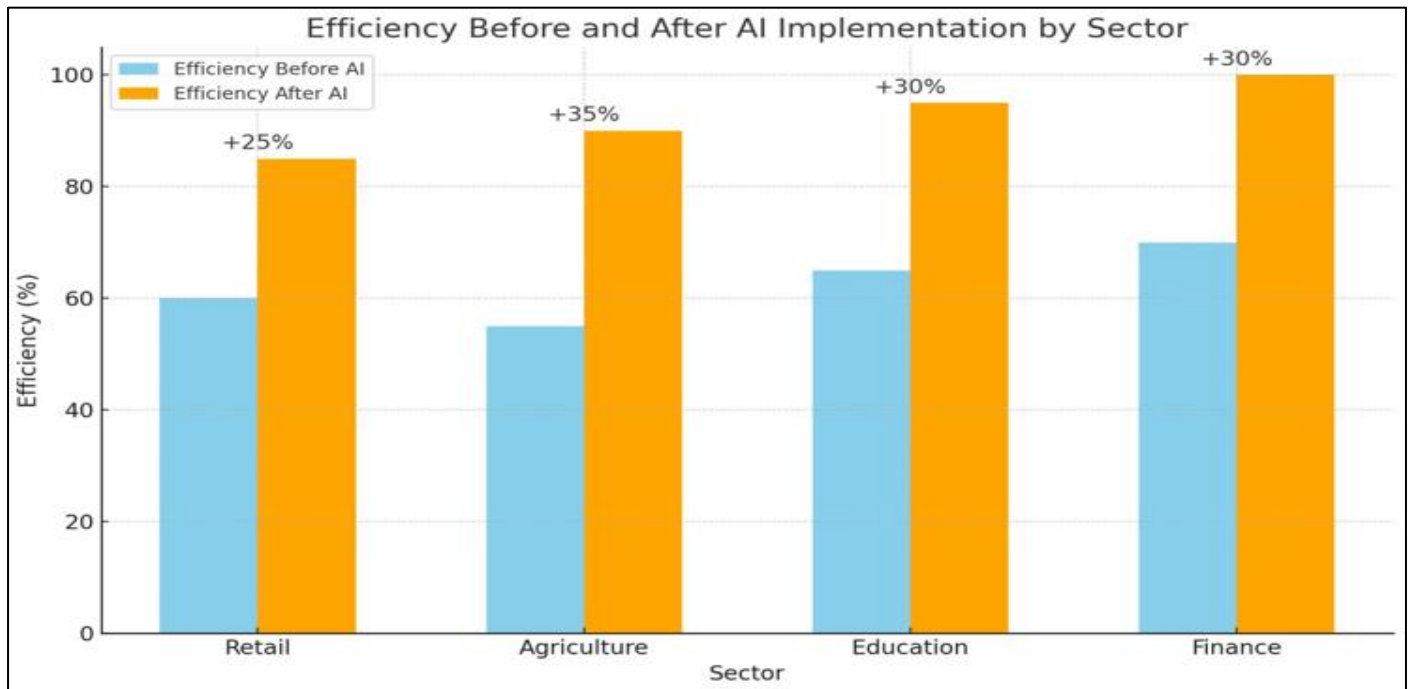


Fig 2 Efficiency before and after Implementation of AI by Various Sectors Customer Retention

AI tools such as chatbots and CRM systems led to significant improvements in customer retention, especially in the education sector, where personalized learning platforms

contributed to a 20% increase in student retention as seen Table 3 and Fig 3.

Table 3 Customer Retention before and after AI Implementation by Various Sectors

Sector	Customer Retention Before AI (%)	Customer Retention After AI (%)	Retention Increase (%)
Retail	70%	85%	15%
Agriculture	60%	75%	15%
Education	65%	85%	20%
Finance	75%	90%	15%
Overall	-	-	16.25%

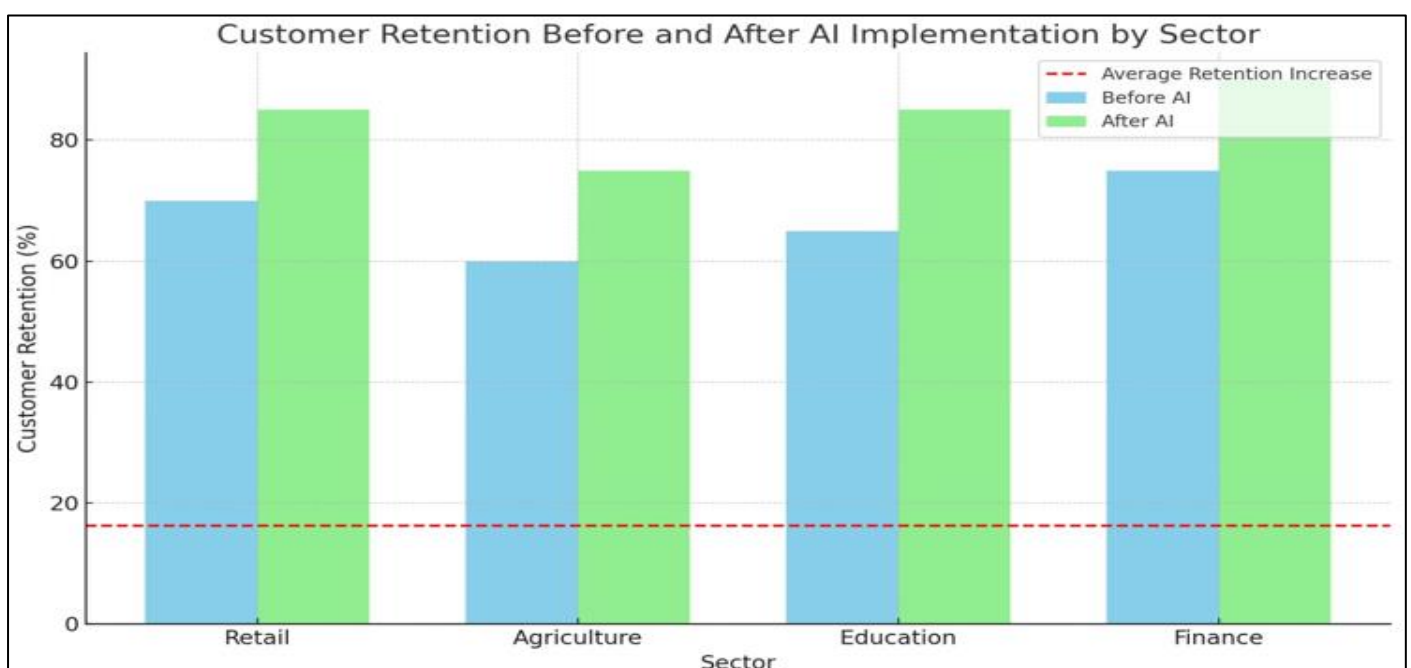


Fig 3 Customer Retention before and after AI Implementation by Various Sectors

B. Qualitative Analysis

The following key themes emerged from the interviews and surveys:

Table 4 Key Insights on AI Adoption Among Women Entrepreneurs

Theme	Key Insights
Motivation for AI Adoption	Entrepreneurs adopted AI to enhance customer engagement, streamline operations, and improve decision-making.
Challenges Faced	Major challenges included high initial setup costs, lack of AI knowledge, and difficulty in finding skilled professionals.
Gender-Specific Biases	This included noting gender biases in AI (in both algorithmic decision-making and representation) as a concern.
Perceived Impact	This included noting gender biases in AI (in both algorithmic decision-making and representation) as a concern.

C. Control Group Comparison

This contrasts sharply with businesses that had not yet harnessed AI and saw limited movement in revenue and

operational efficiency during the same period. This underscores one of the unique perks of business innovation when it comes to AI [15].

Table 5 Comparison of Performance Metrics: AI-Adopting Businesses vs. Non-AI Businesses

Metric	AI-Adopting Businesses	Non-AI Businesses
Revenue Growth (%)	21.25%	2%
Efficiency Increase (%)	30%	5%
Customer Retention Increase (%)	16.25%	3%

V. CHALLENGES FACED BY WOMEN ENTREPRENEURS IN AI ADOPTION

The mainstream entry of AI in their businesses becomes an extraordinary blessing for women entrepreneurs, but at the same time, they face a few notable challenges that become hurdles in their way and thus directly affect their efficiency growth- competitiveness market workforce growth.

- **High Initial Costs:** AI implementations can be a scary financial investment. Hefty setup and operational costs: Putting up the IoT platforms has significant costs associated with hardware spending on higher performance CPUs, software licensing charges wherever required (proprietary solutions), and manpower that is capable of doing this task holistically. As a result, these high costs establish an economic barrier that many women are unable to cross when they try to incorporate AI technologies in their business processes becoming underrepresented in the innovations of artificial intelligence.
- **Lack of Technical Expertise:** However, there is a gigantic gap in AI knowledge among women entrepreneurs. Indeed, many women-owned businesses may even lack the in-house skill set required to build and operate AI solutions. These businesses are also in a tough position to keep up with the evolving AI technology and digital landscape because qualified professionals can work on their behalf using this new world order of tech, working as footer soldiers or brazen entrepreneurs [12].
- **Limited Access to AI Resources:** One of the key challenges in successful AI adoption is access to critical resources required for its implementation. Likewise, small-scale women entrepreneurs are exercising restrictions over AI training programs with consultancy

and financial resources due to their limited participation. This barred access stands in the way of them using these tools and solutions to better their business processes and decision-making.

- **Gender Bias in AI Algorithms:** Women entrepreneurs are facing issues related to gender bias in AI algorithms. The truth is, it has been identified that AI systems come with inherent biases and could potentially introduce inequalities in a bunch of automated decision-making processes which have the potential to skew their companies. This fear can act as a barrier to utilizing AI technologies, since women may perceive these tools as making the wrong disparities worse and stacking against them in access to opportunities[1].
- **Data Privacy and Security:** That means addressing data privacy and security has suddenly shot to the top of how businesses are forced to think about artificial intelligence in relationship management or similar areas that it now applies. Female entrepreneurs are concerned that data leaks may occur and client records, if not handled correctly, have the risks of fraud as well as risk to reputation but also trustworthiness raising concerns [9].
- **Lack of Government Support:** The lack of AI-specific government support merely heightens the struggles women entrepreneurs already face in embracing this new technology. Frustrated by the absence of concrete policy measures, financial incentives, and programs to help them embed AI in their day-to-day operations, many entrepreneurs opine. Yet I speak with so many business people who feel exactly that like they are barely hanging on, unable to support AI in any serious way, and even a bit suspicious of the technology meant someday to make their businesses run better.

VI. STRATEGIES AND POLICY RECOMMENDATIONS FOR OVERCOMING AI INTEGRATION CHALLENGES FACED BY WOMEN ENTREPRENEURS

To overcome the challenges that women entrepreneurs are dealing with in integrating AI and stimulating inclusive growth, several detailed measures can be adopted. Policy recommendations are provided for each strategy to aid in the successful incorporation of AI into women-owned businesses.

➤ *Government Incentives & Grants*

- Details: Offer grants, subsidies, and tax breaks to support the development of AI tools for women Founders-angel Investors VCs Businesses Governments should consider implementing full-service financial support programs designed explicitly targeting the whole cost spectrum related to implementing it is not enough; it requires holistic demonstration implementable package. These financial incentives can motivate women entrepreneurs to make the necessary investments in technologies and infrastructure needed for AI, thus democratizing access.

• *Policies:*

- ✓ AI Adoption Grants: Introduce state-sponsored grants aimed directly at those AI technologies that women-owned businesses would be using for the first time.
- ✓ Tax Incentives for AI Investments: Tax breaks for expenses such as AI training, infrastructure, and hiring skilled people.
- ✓ Subsidized Loans: Establish low-interest loans for women entrepreneurs interested in AI adoption, reducing some of the financial burden [17]

➤ *AI Training and Upskilling Programs*

- Details: Offering specific training programs to fill the technical expertise gap in women entrepreneurs. It must conduct workshops, modules, and certification programs to increase its knowledge about AI.

• *Policies:*

- ✓ National AI Skills Development Program: Launch a national effort via workshops, boot camps, and remote learning to help women entrepreneurs transition into AI.
- ✓ Partnerships with Educational Institutions: Partner with Universities and Polytechnics to develop customized AI training content for Women Entrepreneurs.
- ✓ Subsidized Training Programs: Provide sizable incentives to women entrepreneurs for accessing AI training programs at lower costs.

➤ *Collaborative AI Networks*

- Details: One possible step in this direction is building cooperative networks to provide AI tools, resources, and

mentorship for women entrepreneurs. Collaborating with bigger companies and AI product developers can lead to a potential exchange of learning or other cost-burden contributions.

• *Policies:*

- ✓ AI Network Creation Initiative: Implement programs to build communities and collaboration between women founders, larger corporations, and AI role models for shared resources & mentorship
- ✓ Industry-Academia Collaboration: Create a network of business and academia to promote AI research and resource pool.
- ✓ Mentorship Programs: Create mentorship programs for women entrepreneurs pairing them with seasoned AI professionals to offer guidance on best practices and implementation steps.

➤ *Addressing Gender Bias in AI*

- Details: In the future, these AIs need to be improved and made more impartial by designing algorithms that are less gender biased, on which hinges fair treatment during automatic decision-making. AI developers must recognize the possible biases and take steps to remove them.

• *Policies:*

- ✓ Regulatory Framework for AI Ethics: In the process of AI deployment, adopt policies that make it necessary for corporations to follow ethical guidelines when developing AI in terms of transparency and responsibility.
- ✓ Inclusive AI Development Guidelines: Establish design directives for AI developers to ensure gender inclusivity and bias reduction at the algorithmic level.
- ✓ Public Awareness Campaigns: Institute campaigns for the sensitization of the need for gender-inclusive AI technologies promoting advocacy towards equity [9].

➤ *Improved Access to AI Consultants*

- Details: Improving access to AI consultancy services that are available at low cost, will help women entrepreneurs best implement this technology which is not easy. Businesses at different stages of AI adoption can benefit from bespoke consultancy and support provided by consultants.

• *Policies:*

- ✓ Consultancy Grant Program: Create grants that can fund part of the consultancy costs for female business owners who want to take expert advice on their AI implementations.
- ✓ Database of AI Consultants: Develop a free web-based registry of AI consultants that have experience and/or pricing options for working with small businesses.
- ✓ Partnerships with Consulting Firms: Partners with

consulting companies to create subsidized services for female-led startups and small business enterprises planning on using AI technologies.

➤ *Data Privacy Regulations*

- **Details:** To combat the fears of customer data safety when it comes to using AI technologies, an essential consideration is having robust solutions around data privacy and security frameworks. Transparent rules and regulations allow women entrepreneurs to work in a conducive environment.
- **Policies:**
 - ✓ **Comprehensive Data Protection Law:** Pass legislation to create strong data consumer protection laws that spell out what businesses may do with your information and how they must handle it securely.
 - ✓ **Training on Data Compliance:** Provide women entrepreneurs training programs in data privacy regulations (ensuring legal compliance)
 - ✓ **Support for Data Security Solutions:** Give women in data security finance or grant coverage to let them buy and use the technologies and methods available.

These elaborate strategies and corresponding policies that have been adopted by the governments can create a healthy environment for women entrepreneurs to confidently embrace AI technologies with their businesses, ensure inclusive growth, and increase business performance [12].

VII. CONCLUSION

The study demonstrates how Artificial intelligence (AI) has the potential to be transformational for women entrepreneurs, and could substantially improve business performance in every sector of their economies. Results of that empirical analysis in turn show strong relationships between the degree to which companies have integrated AI and revenue growth, operational efficiency, and customer retention. But the study also looks at to serious obstacles women entrepreneurs are coming up against in adopting AI—such as a higher price tag for entry; and an absence of technical knowledge (as you'd find more men have, so convergence bias comes into play); limited resource access; gender biases becoming baked in via the operation if male-dominated weblink networks being used to train models. The recommendations are designed to be multi- strategic and policy-oriented, focusing on activities that address these challenges. Do so by providing purposeful financial incentives, concentrated skill-training programs, inclusive networks, and rigorous data-privacy mandates that would all create the right environment to encourage women-led businesses to apply AI. Moreover, it is also crucial that we remedy the gender bias in AI development to keep open-ended equal prospects for women entrepreneurs. Most importantly, creating an inclusive ecosystem for AI integration in women-led businesses improves individual business outcomes and in turn contributes to overall economic growth and innovation. When we enable female

entrepreneurs with the tools they need — empowering them to resource up and receive guidance from others as necessary (and not merely those who are burdened by the invisible prescriptions around femme leadership) — it's a path towards shared success in our digital future. It can be the building block that sets an ever-lasting dialogue and movement towards making AI technologies integrated with sustainability, thereby achieving inclusive growth through gender equality in entrepreneurship.

FUTURE PERSPECTIVE

The limitations of the study have outlined that it has positioned a plethora of barriers faced by women to use AI in entrepreneurial ventures, and how all these bottlenecks could be addressed hence promoting inclusive growth. The promise of AI, including the power of machine learning and the ability to understand natural language processing or automation will be true productivity boosters for all types of businesses moving into this decade; it could further put women-led businesses on a new track that brings more innovation as well as competitiveness. One way to do so is by providing targeted financial incentives and designing AI training programs together with governments, businesses, or other institutions that can help promote AI adoption across different sectors. To this end, future research should begin to investigate the long-term effect that AI may have on different sectors as well as other emerging technologies including quantum computing so that women entrepreneurs can improve their arsenal of tools and techniques. More importantly, gender biases in AI algorithms and augmented data privacy need to be tackled as they become crucial for promoting equitable sustainability of the digital economy. New models of collaborative networks and AI can reshape the women entrepreneur ecosystem, supporting businesses to become successful while driving overall economic gain and gender equality.

REFERENCES

- [1]. Baracas, S. & Selbst, A.D., 2016. Big data's disparate impact. *California Law Review*, 104(3), pp. 671-732.
- [2]. Buolamwini, J. & Gebru, T., 2018. Gender shades: Intersectional accuracy disparities in commercial gender classification. *Proceedings of the 1st Conference on Fairness, Accountability and Transparency*, pp. 77-91.
- [3]. Chouldechova, A. & Roth, A., 2018. The frontiers of fairness in machine learning. *ACM Conference on Fairness, Accountability, and Transparency*, pp. 117-122.
- [4]. David Paton, J., Martinez, R. & Lee, H., 2022. AI and social sustainability: Advancing gender equality through technology. *Sustainable Development Journal*, 30(9), pp. 689- 702.
- [5]. Dastin, J., 2021. Amazon to pay \$62 million to settle U.S. charges it stole driver tips. *Reuters*. Available at: <https://www.reuters.com/article/us-amazon-com-ftc-idUSKBN2BQ24Q>.
- [6]. Eubanks, V., 2018. *Automating inequality: How high-tech tools profile, police, and punish the poor*. St. Martin's Press.

- [7]. Friedler, S.A., Scheidegger, C., Venkatasubramanian, S., Choudhary, S., Hamilton, E.P. & Roth, D., 2019. A comparative study of fairness-enhancing interventions in machine learning. *Proceedings of the Conference on Fairness, Accountability, and Transparency*, pp. 329-338.
- [8]. Gender Equality in the Age of AI. 2021. *UNESCO*. Available at: <https://en.unesco.org/genderequalityai>.
- [9]. Gray, M.L., Sweeney, L. & Yablon, Y.B., 2021. Can AI help achieve gender equality? *American Economic Review: Insights*, 3(2), pp. 241-254.
- [10]. Hutton, L. & Henderson, K., 2019. Towards a feminist AI: Interrogating gender stereotypes in AI assistants. *Proceedings of the 2019 AAAI/ACM Conference on AI, Ethics, and Society*, pp. 205-211.
- [11]. Kannan, S., Allen, K., Mishra, S. & Patel, J., 2021. Gender classification and intersectional bias in AI: Review, challenges, and mitigation strategies. *Frontiers in Big Data*, 4, p. 33.
- [12]. Pattanaik, S. & Mishra, A., 2024. Artificial intelligence as a tool for gender equality: Empowering women across sectors. *AI and Society Journal*, 38(1), pp. 120-136.
- [13]. Patil, S.D., Husainy, A. & Hatte, P.R., 2024. Empowerment of women through education and training in artificial intelligence. In: *AI Tools and Applications for Women's Safety*. Hershey, PA: IGI Global, pp. 18. doi 10.4018/979-8-3693-1435-7.ch008.
- [14]. Roopaei, M., Mosleh, M. & Navimipour, N.J., 2021. Addressing gender imbalance in AI: Challenges and solutions for women's inclusion. *IEEE Access*, 9, pp. 114569-114583.
- [15]. Sadok, M. & Assadi, N., 2023. Artificial intelligence in bank credit analysis for women- led SMEs: The case of Lenddo in Ethiopia. *Journal of Financial Innovation*, 7(2), pp. 78- 94.
- [16]. Shrestha, S., Khanal, P. & Timsina, S., 2022. Gender bias in machine learning algorithms: Detection and mitigation strategies. *Computational Intelligence Review*, 45(7), pp. 143-160.
- [17]. Vyawahare, H., Khandelwal, S. & Rathod, S., 2024. Artificial intelligence in detecting and preventing online harassment. In: *AI Tools and Applications for Women's Safety*. Hershey, PA: IGI Global, pp. 22. doi: 10.4018/979-8-3693-1435-7.ch002