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Empowering Women Entrepreneurs through AI: A Study on the Transformative Impact of Artificial Intelligence on Women-Led Businesses

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Abstract: **Empowering Women Entrepreneurs through AI: A Study on the Transformative Impact of Artificial Intelligence on Women-Led Businesses in Madurai District, Tamil Nadu. As AI technology progresses, its assimilation into business workflows has garnered widespread interest for improving competence, fostering growth prospects and tackling obstacles conventionally faced by women entrepreneurs. The paper delves into how AI is revolutionizing the entrepreneurial sector especially women-led businesses, focusing on its effects on capital access, market insights, business management, and gender inclusivity. By exploring the real market and analysing some case studies and industry reports, this paper underscores the essential role of AI in supporting economic and technology empowerment and sustainable growth within women-led businesses.**

Keyword: **Women Entrepreneurs, Economic and Technology Empowerment, Artificial Intelligence, Entrepreneurial Environment.**

I. INTRODUCTION

Women-led businesses have entered a new era with a renewed focus on innovation, empowered by advanced technologies like AI. A 2023 study by the Global Entrepreneurship Monitor (GEM) found that women entrepreneurs are adopting AI at a slower rate compared to their male counterparts, but the gap is narrowing. Approximately 35-40% of women-led businesses reported using AI tools in 2023, up from 25% in 2021. Women-led businesses in e-commerce, retail, and professional services are leading in AI adoption. AI tools like chat bots, personalized marketing platforms, and inventory management systems are the most commonly used. A 2023 survey by the International Finance Corporation (IFC) revealed that women-led businesses using AI reported 20-30% increase in productivity, 15-25% reduction in operational costs, improved customer engagement and satisfaction. On the other side of the coin 45% of women entrepreneurs has cited lack of technical skill as their primary barrier, 35% reported that AI tools are too expensive, 20% were unaware of how AI could benefit their businesses. This paper examines how AI serves as a catalyst for change in women-led businesses, focusing on its potential to drive innovation, empower decision-making, and bridge gender gaps in entrepreneurship.

Objective

To analyze how technological interventions are empowering women entrepreneurs, with an emphasis on digital tools, platforms, and policies that enhance access and agency.

II. REVIEW OF LITERATURE

Building on the findings of **Perifanis and Kitsios (2023),** it is evident that AI adoption can significantly enhance business outcomes. Their research underscores the need for organizations to develop and leverage AI capabilities in alignment with their business and IT strategies, ultimately yielding multifaceted value creation. It argues that women-led businesses can

only prosper in today's technology transformation landscape by attentively adopting and implementing the advanced technologies.

Giuggioli and Pellegrini (2023) investigate the decisive role of AI within diverse Industry 4.0 technological paradigms, including smart factories, the Internet of Things (IoT), augmented reality (AR), and block chain. Their study is structured around the framework of the "AI-enabled entrepreneurial process which focuses on the impact of AI on the key areas of entrepreneurship such as opportunity identification, decision-making, performance enhancement, and education and research.

A recent study by **Giuggioli and Pellegrini (2023)** explores the pivotal role of Artificial Intelligence (AI) in driving Industry 4.0 innovations, encompassing smart factories, IoT, augmented reality, and block chain. Their research employs the "AI-enabled entrepreneurial process" framework, examining the transformative impact of AI on entrepreneurial ecosystems, specifically in areas such as: - Opportunity identification and exploitation - Data-driven decision-making - Performance optimization - Education and research. This study provides valuable insights into the intersection of AI and entrepreneurship, illuminating the pathways to innovation and growth in the Industry 4.0 era."

Shepherd and Majchrzak (2022) focus on artificial intelligence (AI) and its societal implications. They propose that the integration of AI and entrepreneurship will result in influential synergy. To unlock the full potential of entrepreneurial opportunities, they propose a multifaceted approach: Interaction-based perspective: Fostering dynamic interactions between entrepreneurs, stakeholders, and environments to reveal new opportunities. Micro-foundation approach: Examining the granular, individual-level actions and decisions that underpin entrepreneurial endeavours. Cognitively driven decision-making: Recognizing the critical role of cognitive processes, such as perception, attention, and mental models, in shaping entrepreneurial decision-making. By integrating these perspectives, entrepreneurs and researchers can gain a deeper understanding of the complex factors that drive entrepreneurial success.

Chalmers, D., MacKenzie, N. G (2021) looks into the ways AI influences the development, strategies, and performance of new startups. The study also examines how these changes necessitate new operational frameworks for organizing entrepreneurial efforts.

Chae and Goh (2020) concentrate in examining the wider influence of digital technologies on entrepreneurship. Their work examines how these technologies are reshaping entrepreneurial practices and contributing to the field. They emphasize the transformative potential of digital tools, including AI, in enabling new business models and opportunities.

Chae and Goh (2020) investigate the profound impact of digital technologies on the entrepreneurial landscape. Their research explores how digital tools, including Artificial Intelligence (AI), are Revolutionizing traditional entrepreneurial practices- Enabling innovative business models- Unlocking new opportunities for growth and development. By highlighting the transformative potential of digital technologies, their work sheds light on the exciting possibilities for entrepreneurs, policymakers, and researchers in the digital age.

III. RESEARCH METHODOLOGY

This study investigates the perceptions and experiences of women entrepreneurs regarding Artificial Intelligence (AI) adoption in their businesses. A convenient sampling method was employed to collect data from 100 women entrepreneurs registered under the District Industries Centre (DIC) in and around Madurai District, India.

A structured questionnaire, administered through Google Forms, was used to gather information on:

1. Demographic profile

2. Familiarity with AI

3. Awareness and usage of AI tools

4. Perceived impact of AI on their businesses

This exploratory study aims to provide insights into the AI adoption landscape among women entrepreneurs in the region, highlighting opportunities and challenges for future growth and development.

TABLE I: DEMOGRAPHIC CHARACTERISTICS OF WOMEN ENTREPRENEURS: AN OVERVIEW

Sl. No.	Profile of Women Entrepreneurs	Respondent Count	Percentage
	Age		
1.	Less than 25 Years	15	15.0
2.	26-40 Years	50	50.0
3.	41-55 Years	22	22.0
4.	Above 56 Years	13	13.0
	Total	100	100
	Relationship Status		
1.	Married	65	65.0
2.	Unmarried	35	35.0
	Total		100
	Academic Background		
1.	High school	30	30.0
2.	Under Graduation	43	43.0
3.	Post-Graduation	22	22.0
4.	Others	5	5.0
	Total		100
	Professional Experience		
1.	Below 2 Years	45	45.0
2.	2-5 Years	33	33.0
3.	Above 5 Years	22	22.0
	Total		100

Source: Primary data.

Table 1 presents the demographic characteristics of the respondents. The majority of participants (50.0%) fall within the 26–40 age bracket, followed by 22.0% aged 41–55, 15.0% under 25 years, and 13.0% aged 56 or older. In terms of marital status, 65.0% are married, while 35.0% are unmarried. Educationally, 43.0% hold undergraduate degrees, 30.0% have high school qualifications, 22.0% possess postgraduate or higher credentials, and 5.0% report other certifications, such as diplomas. Regarding work experience as entrepreneurs, nearly half (45.0%) have less than 2 years of experience, 33.0% have 2–5 years, and 22.0% report over 5 years of experience.

TABLE II: DEGREE OF FAMILIARITY WITH AWARENESS, ADOPTION, USAGE, IMPACT, CHALLENGES AND EMPOWERMENT

Sl. No.	Variables	Degree of familiarity	Insights	Major influencers
1.	Awareness of AI Tools	• 50% of respondents were aware of AI tools. • 50% were unaware or had limited knowledge of AI applications.	Moderate awareness and poor adoption	• Resource Availability • Technical Expertise • Organizational Culture • External Support • Industry Trends
2.	Adoption of AI Tools	• 25% of respondents reported using AI tools in their businesses. • 25% were planning to adopt AI tools in the next 12 months. • 50% had no plans to use AI tools.		
3.	Usage	• 40% used AI for marketing and customer engagement (e.g., chatbots, personalized recommendations). • 30% used AI for financial management and forecasting.	AI is adopted primarily in the	• Awareness and Knowledge • Technical Skills • Financial Resources

		• 20% used AI for operational efficiency (e.g., inventory management, automation). • 10% used AI for data analysis and decision-making.	areas of marketing and CRM	• Organizational Culture • Business Size and Type
4.	Impact of AI on Business Performance	• 60% reported improved efficiency and productivity. • 50% noted increased revenue or cost savings. • 40% observed better customer satisfaction. • 20% reported no significant impact.	Positive Impact on Business Performance	• Business Efficiency • Customer Insights and Personalization • Marketing and Customer Engagement • Financial Management and Forecasting • Product and Service Innovation
5.	Challenges in Adopting AI	• 40% cited lack of technical knowledge or training. • 30% mentioned high costs of AI tools. • One-fifth of respondents (20%) cited data privacy and security concerns. • 10% faced resistance to change within their teams.	Technical knowledge gaps and costly implementation were identified as the primary obstacles	• Access to Capital • Limited Technical Knowledge and Skills • Cultural and Gender Biases • Lack of Tailored AI Solutions
6.	Empowerment Through AI	• 70% felt more empowered as business owners due to AI tools. • 60% reported increased confidence in decision-making. • 50% felt AI helped them compete more effectively in their industries. • 30% felt no significant change in their empowerment levels.	Empowered through AI, in enhancing decision-making, competitiveness, and overall business growth.	• Fostering Innovation • Enhancing Customer Relationships • Access to Data-Driven Insights • Increased Operational Efficiency • Financial Empowerment

Source: Primary data.

Success Stories

Selvi's Handloom Creations, a women-run weaving cooperative in Madurai, adopted an AI-based design tool to modernize traditional patterns and appeal to younger consumers. As a result, their revenue grew by 30% within a year.

Meenakshi Foods, a small food-processing unit, used AI-driven market analysis to identify a demand for organic pickles abroad. Through digital marketing automation, the unit began exporting to overseas markets, tripling their customer base.

IV. CONCLUSION AND RECOMMENDATIONS

This study investigates the awareness and adoption of Artificial Intelligence (AI) among women entrepreneurs, a crucial aspect of remaining competitive in today's fast-paced business landscape dominated by multinational corporations.

As AI continues to transform the business world, understanding its applications, benefits, and potential is vital for entrepreneurial success. Interestingly, the COVID-19 pandemic accelerated the digital transformation of many female entrepreneurs, who leveraged enhanced digital literacy to adopt AI solutions.

This research explores the intersection of AI adoption, digital literacy, and entrepreneurial growth, providing valuable insights into the opportunities and challenges faced by women entrepreneurs in the AI-driven business ecosystem. However, the awareness of AI remains quite low among women entrepreneurs. A large number of them is unfamiliar with the concept and continues to rely on traditional business methods. The adoption of artificial intelligence (AI) holds potential to improve business operations and expand market reach internationally. However, the study reveals that women entrepreneurs exhibit

limited awareness of AI's applications across diverse business functions. Despite this, a significant proportion already utilizes AI for core operational tasks. A notable trend is the increasing reliance on social media platforms for marketing and sales strategies among women-led enterprises. Key obstacles to AI integration include high implementation costs and inadequate technological infrastructure, which could be addressed through targeted government interventions and financial support from institutions.

REFERENCES

[1] Perifanis, N. A., & Kitsios, F. (2023). Investigating the influence of artificial intelligence on business value in the digital eraof strategy: A literature review. Information, 14(2), 85.

[2] Giuggioli, G., & Pellegrini, M. M. (2023). Artificial intelligence as an enabler for entrepreneurs: a systematic literaturereview and an agenda for future research. International Journal of Entrepreneurial Behavior & Research, 29(4), 816–837.

[3] Shepherd, D. A., & Majchrzak, A. (2022). Machines augmenting entrepreneurs: Opportunities (and threats) at the Nexus ofartificial intelligence and entrepreneurship. Journal of Business Venturing, 37(4), 106227.

[4] Hisrich, R. D., &Soltanifar, M. (2021). Unleashing the creativity of entrepreneurs with digital technologies. Digital Entrepreneurship: Impact on Business and Society, 23–49.

[5] Chalmers, D., MacKenzie, N. G., & Carter, S. (2021). Artificial intelligence and entrepreneurship: Implications for venturecreation in the fourth industrial revolution. Entrepreneurship Theory and Practice, 45(5), 1028–1053.

[6] Chae, B., & Goh, G. (2020). Digital entrepreneurs in artificial intelligence and data analytics: Who are they? Journal of open innovation: technology, market, and complexity, 6(3), 56.

[7] Binns, A. (2018). "Artificial Intelligence: A Tool for Gender Equality?" World Economic Forum.