

## Impacts of Artificial Intelligence on Women in India

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### Abstract

Artificial Intelligence (AI) is rapidly reshaping India's social and economic landscape, offering both opportunities and challenges for women. This paper examines the dual nature of AI's impact on women in different sectors, focusing on empowerment, bias, and accessibility. The methodology consists of **case study reviews of women across healthcare, education, employment, and safety sectors**, comparing rural and urban women's experiences. Findings reveal that while AI opens pathways for education, entrepreneurship, and safety, it also reproduces systemic biases and deepens the digital divide. Through thematic analysis, key patterns emerge: empowerment through digital literacy, persistent discrimination in algorithms, contrasting rural-urban experiences, and the paradox of surveillance as both protection and control. The paper concludes that AI has the potential to be a feminist tool of liberation, but only if women are included as equal stakeholders in its design and implementation.

**Keywords:** Artificial Intelligence, Women, India, Empowerment, Digital Divide.

### Introduction

Artificial Intelligence (AI) is at the nucleus of India's vision for Digital India, and the market is expected to grow to USD 8 billion by 2025 with initiatives such as NITI Aayog's National Strategy for AI and the India AI portal. From banking, textile, and healthcare automation to AI-enabled education and telemedicine, technology is transforming opportunities and challenges for women. Though digital tools empower women, particularly women in rural regions, through initiatives such as Internet Saathi and customized learning, they also potentially cause job loss, data security, discriminatory hiring, and propagation of stereotypes using appearance filters or snooping. AI is therefore a double-edged sword in India: increasing the access of women to education, healthcare, and employment opportunities while, at the same time, exposing them to exclusion and inequality. This research investigates this paradox using case studies and questionnaires from women in rural and urban settings, posing the question of whether AI increases the liberty of women or exacerbates current obstacles.

## Statement of the Problem

Artificial intelligence (AI) is reshaping India across sectors like education, healthcare, jobs, and safety. While it creates new opportunities, women often struggle to access these benefits due to the digital gender gap, limited devices, poor connectivity, and low digital literacy, especially in rural areas. AI can also reinforce stereotypes through biased hiring tools, beauty filters, and automated decisions, further deepening inequalities. Urban women benefit more because of better resources, leaving rural women behind. Despite efforts like Digital India and AI education initiatives, the real impact of AI on women's daily lives remains less understood. This study explores how AI influences Indian women, the barriers they face, and ways to make AI more inclusive and empowering.

## Research Objectives

- To identify the level of digital literacy among women across different age groups and occupations.
- To explore how women use AI technologies in daily life, including education, healthcare, and household activities.
- To examine the challenges women face in accessing AI, such as affordability, internet connectivity, and device availability.
- To investigate women's perceptions of AI's impact on their personal and professional lives.
- To assess the trust women place in AI systems and the factors influencing this trust.
- To propose strategies for inclusive AI integration that empower women and bridge the digital gender divide.

## Exploring Opportunities, Challenges, and the Digital Gender Divide

### ● AI and Women Globally

Artificial intelligence technologies often reflect biases found in the societies that create them. Global studies show that AI systems, such as facial recognition, make significantly more errors when identifying women, especially women with darker skin tones. These biases can lead to unfair outcomes in hiring, security, and access to services, demonstrating the need for diverse datasets and ethical AI practices.

### ● Women and AI in India

India faces a significant digital gender gap, with fewer women accessing the internet or digital devices compared to men. In rural areas, only about 25% of women have internet access,

limiting their ability to benefit from AI applications in education, health, and employment. Bridging this gap is essential for ensuring equitable opportunities for women.

- **AI and Employment**

The rise of AI and automation is changing India's employment landscape. Women working in sectors like BPOs, clerical jobs, and textiles face the risk of job displacement due to automation. However, AI also creates new opportunities, such as remote digital work, entrepreneurship, and tech-based startups. Access to skills and training is key for women to benefit from these opportunities.

- **AI and Healthcare**

AI is transforming healthcare for women in India, especially in rural areas. AI-powered chatbots, telemedicine services, and monitoring tools help women access medical guidance, track pregnancies, and manage health risks. These technologies make healthcare more accessible and timelier. However, concerns regarding the privacy of sensitive health data and ownership of information must be addressed to maintain trust.

- **AI, Safety, and Surveillance**

AI-driven safety apps have become essential tools for women in India. Features such as real-time GPS tracking, SOS alerts, and emergency notifications help women feel more secure in public spaces. Apps like 'Karan Kavach' allow instant alerts to trusted contacts. Despite these benefits, issues of surveillance, data misuse, and privacy violations remain concerns that need careful regulation.

## **Methodology**

### **Research Design**

The research employs a qualitative case study approach to investigate the effects of AI on women in India. This methodology enables an in-depth appreciation of personal experience, issues, and prospects that cannot be quantified through statistics.

### **Selection of Participants**

Four women participants, representing urban and rural settings for major sectors, were chosen:

Priya (Urban) – Education

Radha (Rural) – Healthcare

Anjali (Urban) – Employment

Sunita (Rural) – Safety

This choice emphasizes access and experience disparities between urban and rural women.

### **Data Collection**

Data were collected using narrative accounts of participants' use of AI. Stories center on opportunities, barriers, and personal experiences in their respective fields, expressing both positive (skill improvement, access, safety) and negative (bias, connectivity, privacy, job insecurity) aspects.

### **Data Analysis**

Thematic analysis highlighted patterns of recurrence, including AI access, empowerment opportunities, infrastructural and bias-related barriers, and exclusionary or surveillance risks. Urban and rural case comparisons raised awareness of variation in digital literacy and resources.

### **Ethical Considerations**

Pseudonyms were used in order to protect the anonymity of participants, and cultural/contextual sensitivity was maintained. Privacy was maintained due to the sensitivity of the issues being discussed.

### **Limitations**

The study's small sample size and focus on limited regions prevent generalization. Being qualitative, findings are interpretive, yet the case studies provide valuable insights into AI's impact on women's lives.

### **Case Study 1: Priya – AI in Education (Urban)**

Priya, a 24-year-old software trainee in Bangalore, also made use of AI-powered learning platforms to circumvent the cost and availability of pricey in-class training. By utilizing personalized lesson paths, real-time feedback, and adaptive quizzes, she enhanced her coding skills and completed work that was once beyond her range. But she also has issues; most sites will have a tendency to assume there is already technical knowledge; this will confuse new learners, and mentorship sites will portray male icons more than female icons. Prayas shows an example of how AI brings learning to women and shows that there might be hidden biases that may discourage them.

**Case Study 2: Radha – AI in Healthcare (Rural)**

Radha, a 32-year-old resident of a village in Uttar Pradesh, uses telemedicine platforms and AI-based maternity health apps to get check-up reminders, dietary advice, and notifications regarding possible risk indicators when she is pregnant. The platforms save time and money by eliminating the need to travel long distances to far-off clinics. But problems such as a volatile internet, her poor proficiency on her smartphone, and language problems make her use all of them with full potential at times. Radha's story is the huge potential of AI to transform the image of healthcare among rural women and shows an urgent need for possessing good digital literacy and connectivity in villages.

**Case Study 3: Anjali – AI in Employment (Urban)**

Anjali is employed in a BPO in Mumbai, where AI applications manage workflow, monitor performance, and automate administrative work. This transition frees her up to work on more analytical projects and to consider new career paths, including remote freelance work in digital marketing. She sees AI as an opportunity to grow and adapt, but she also worries that automation may eventually replace jobs in sectors dominated by women, like BPOs and data entry. Anjali’s case highlights the double impact of AI in employment, empowering women to upskill and diversify, yet creating anxiety about job security in the long run.

**Case Study 4: Sunita – AI for Safety (Rural)**

Sunita, a 28-year-old rural Telangana schoolteacher, depends on AI-powered safety apps like Kavach to feel safe during commutes. The GPS location tracking, SOS alerts, and emergency calls assuage her fears, especially when driving alone late at night. Even as she avails herself of the security of such features, she is wary of the dangers of continuous location tracking and misuse of personal information. Sunita's experience demonstrates how AI could enhance women's safety and empowerment in rural areas but at the same time poses significant concerns regarding privacy, data security, and ethical application of technology.

*“ Consolidated summary of four case studies with key details and implications. ”*

Name	Location	Sector	AI Use	Opportunities	Challenges
Priya	Urban (Bangalore)	Education	Learning apps, mentorship tools	Learn coding, personalized lessons	Too advanced lessons, male-focused Examples

Radha	Rural (Uttar Pradesh)	Healthcare	Maternal health apps, telemedicine	Timely medical guidance, track pregnancy	Poor internet, limited digital skills
Anjali	Urban (Mumbai)	Employment	Task management, remote work	Reduce routine work, freelancing	Job security, need for up-skilling
Sunita	Rural (Telangana)	Safety	GPS tracking, SOS alerts	Feel safer, emergency support	Privacy concerns, data misuse

### Discussion

The study confirms that the digital gender divide shapes AI's impact. Urban women gain more opportunities, while rural women face structural barriers like limited internet access, affordability, and low digital literacy. Gendered biases in AI platforms and surveillance concerns further constrain inclusivity. Nonetheless, even minimal access to AI tools can significantly improve women's education, healthcare, employment, and safety, emphasizing the importance of supportive ecosystems, policy, and ethical AI design.

### Recommendations

- Promote digital literacy programs, especially in rural areas.
- Improve access to affordable devices and reliable internet.
- Ensure gender-sensitive AI design with diverse datasets.
- Strengthen privacy and data protection policies for AI apps.
- Encourage continuous up-skilling for women to adapt to AI-driven jobs.

### Future Research Scope

Future studies could involve larger, more diverse samples across states, explore additional sectors, or examine long-term impacts of AI on women. Intersectional factors like caste, income, and disability could also be studied to deepen understanding of barriers and opportunities.

### Conclusion

AI has transformative potential for women in India, but is shaped by access, infrastructure, and social factors. While it offers opportunities in education, healthcare, employment, and safety, challenges such as biases, connectivity gaps, and privacy risks remain. Bridging the digital gender divide and

promoting inclusive AI are essential for empowering women and ensuring equitable participation in the AI-driven future.

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