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Digital Education and Employment Opportunities for Women

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Abstract: The present study examines how digital education contributes to job creation and fosters the economic empowerment of women in India. As digital technologies advance rapidly, online education, digital literacy initiatives, and skill development platforms have emerged as vital resources for improving women's employability and socio-economic involvement. This study utilizes a qualitative research methodology, drawing on secondary data sourced from government reports, scholarly journals, research papers, books, etc., and previous studies related to digital education and women's empowerment. The research underscores that digital education enhances women's professional capabilities, access to information, entrepreneurial prospects, financial self-sufficiency, and engagement in various sectors, including education, business, healthcare, information technology, and online services. The results indicate that digital learning platforms and online training courses offer flexible educational opportunities and employment opportunities, particularly for rural and semi-urban women. The study concludes that digital education plays a significant role in reducing gender inequality and strengthening women's economic empowerment. However, challenges such as poor digital infrastructure, limited internet access, low digital literacy, and socio-cultural barriers continue to affect women's participation in the digital economy. The study suggests that government initiatives, digital skill-development programs, and accessible online educational resources are essential for improving women's employment opportunities and promoting inclusive economic growth. The study suggests that government initiatives, digital skill-development programs, and accessible online educational resources are essential for improving women's employment opportunities and promoting inclusive economic growth.

Keywords: Digital Education, Women Empowerment, Employment Opportunities, Digital Literacy, Economic Empowerment.

INTRODUCTION

Education has always played a significant role in shaping human development and economic progress. In the twenty-first century, digital education has emerged as one of the most transformative tools for enhancing learning opportunities and employment prospects across the world. The increasing use of digital technologies, online learning platforms, virtual classrooms, mobile applications, and internet-based training programs has changed the traditional structure of education and employment.

Digital education refers to the use of digital technologies and online resources for teaching,

learning, communication, and skill development. It includes e-learning platforms, virtual classrooms, online certification courses, digital literacy programs, and information and communication technology-based learning systems. In recent years, digital education has gained importance in India due to rapid technological advancement, expansion of internet facilities, government initiatives, and the growing need for skill-based employment.

Women constitute nearly half of the population and are considered essential contributors to social and economic development. However, women have historically faced barriers in accessing quality

education, skill development opportunities, and employment resources. Digital education has created new possibilities for women by providing flexible learning opportunities, improving access to information, and enabling participation in economic activities.

In India, digital education has become particularly important after the expansion of programs such as Digital India, Skill India, PMGDISHA, and online educational initiatives. These programs have encouraged women to participate in online learning, digital entrepreneurship, freelancing, e-commerce, online teaching, banking services, and remote employment opportunities.

The growing digital economy has opened multiple employment opportunities for women in fields such as information technology, online business, digital marketing, education, healthcare, customer services, banking, and content creation. Women are increasingly using digital platforms for self-employment, entrepreneurship, and income generation. Digital education has also helped women develop professional skills, communication abilities, technological awareness, and financial independence.

Despite significant progress, women still face several challenges in accessing digital education and employment opportunities. Lack of digital infrastructure, low internet accessibility, gender discrimination, financial limitations, lack of technological awareness, and socio-cultural barriers continue to affect women's participation in digital learning and employment.

Therefore, the present study attempts to examine the relationship between digital education and employment opportunities for women using qualitative analysis and secondary data source

OBJECTIVES OF STUDY

1. To examine how digital literacy influences women's economic empowerment.
2. To recognize the obstacles encountered by women in obtaining digital education.
3. To examine the connection between digital education and the employability of women.
4. To propose strategies for enhancing digital education and job prospects for women.
5. To examine the role of digital education in improving women's employment opportunities.

SIGNIFICANCE

This study highlights the importance of the role of digital education in enhancing women's socio-economic

status. The study will help policymakers, educators, researchers, and government agencies in comprehending the impact of digital learning on women's empowerment and job creation.

The research additionally adds to the current body of work on women's empowerment, digital skills, job creation, and economic advancement. It offers perspectives on the obstacles encountered by women in the digital economy and suggests measures for enhancing digital access and skill enhancement.

REVIEW OF LITERATURE

Digital Education and Women Empowerment

Digital learning helps break down barriers related to geography, distance, and socio-economic status, allowing women to access educational content, improve their digital literacy, and advance in their careers. Women need to overcome challenges such as limited access to technology, low digital literacy, socio-cultural norms, and safety concerns in the digital space for digital learning to effectively empower them. (Rajvala, 04 APRIL 2025).

Digital literacy greatly enhances educational participation, access to online learning, communication, and opportunities for income generation and entrepreneurship. The COVID-19 pandemic has made it even clearer that digital skills are essential for education continuity and for accessing remote services. When combined with good infrastructure and culturally suitable programs, digital literacy can be a strong tool for reducing educational gaps, supporting economic mobility, and promoting gender equality in rural Bangladesh. (Ritesh Karmaker, 2025)

EMPLOYMENT OPPORTUNITIES AND DIGITAL SKILLS

The increasing reliance on technology has created many new job opportunities for women. Digital platforms have enabled women to work from home, start online businesses, and take on remote jobs.

The analysis clearly shows that women's skill levels are very low. Improving skill development to match the needs of the modern job market, especially digital literacy, can significantly increase job opportunities for women. (mehta, 2021)

AI skill development and digital education are becoming powerful tools for women's empowerment in India. Women who previously had little opportunity are now building careers, gaining confidence, and achieving financial independence through technology-based learning. Today, women across India are exploring careers in digital marketing, AI tools, content creation, graphic design, automation, and online business management. (AI Skill Development for Women in India: The Future of Digital Empowerment, 2026)

CHALLENGES IN DIGITAL LITERACY

Socio-cultural barriers, including gender expectations and early marriage, greatly affect girls' ability to access and benefit from education. Economic challenges such as poverty and hidden costs worsen these disparities, while poor infrastructure and education quality contribute to high dropout rates and low learning outcomes. (Mir, 2024)

The findings show that limited digital literacy and poor internet access are the main barriers to digital learning. Higher education and income levels are positively linked to better technology engagement. Socio-cultural norms and institutional support also influence this, although changing gender roles are reducing traditional constraints. (Majoo, 2025)

RESEARCH METHODOLOGY

This study is descriptive and analytical in nature, using qualitative research methodology. It is based entirely on secondary data collected from: government reports, research journals, books, research papers, websites, and online educational reports. Relevant literature and documents related to digital education, women's empowerment, and employment opportunities were systematically reviewed and analyzed. The data were analyzed using qualitative content analysis and descriptive interpretation.

Digital Education and Women's Employment Opportunities

Role of Digital Education in Women Empowerment

Digital education has transformed the educational landscape by making learning more accessible, flexible, and affordable. Women who previously lacked access to traditional educational institutions can now participate in online learning programs and skill development courses.

Digital education empowers women by:

- Improving educational accessibility
- Enhancing technological knowledge
- Developing professional skills
- Increasing self-confidence
- Supporting entrepreneurship
- Improving financial literacy
- Enhancing communication skills

Women who receive digital education are better prepared to be involved in economic activities and employment opportunities.

Digital Literacy and Economic Empowerment

Digital literacy refers to the ability to use digital technologies effectively for communication, learning, and employment purposes. Digital literacy plays a

crucial role in women's economic empowerment.

Women with digital skills can:

- Apply for online jobs
- Participate in remote work
- Access digital banking services
- Operate online businesses
- Use e-commerce platforms
- Engage in freelancing activities
- Access government welfare schemes

Digital literacy improves women's employability and supports their financial independence.

According to the National Sample Survey and various government reports, internet usage and smartphone ownership among women in India have increased significantly in recent years. The Digital India initiative and rural digital literacy programs have helped improve women's access to online learning and employment. Reports indicate that women's participation in online skill development, digital banking, and e-commerce activities has gradually increased, especially since the COVID-19 pandemic.

This study investigates the impact of digital literacy on the economic empowerment of women in Owerri Municipal.

By analysing data from a survey of 255 women, the research found that women with digital skills demonstrate greater economic success compared to those without. Key findings include:

- **Enhanced Economic Performance:** Digitally literate women show improved performance in various economic activities.
- **Increased Opportunities:** Digital literacy opens new opportunities, especially in entrepreneurship and online businesses.
- **Improved Financial Management:** Digital tools help women with better financial planning and decision making.
- **To maximize the potential of digital literacy, the following recommendations are proposed:**
- **Government Initiatives:** The government should focus on digital literacy programs for women, offering scholarships and incentives.
- **Empowerment Opportunities:** Women should actively seek out opportunities to learn digital skills and benefit from them for economic advancement.
- **Leadership Roles:** Digitally literate women should be encouraged to take on leadership roles in both public and private sectors.

By investing in digital literacy, Nigeria can empower women, drive economic growth, and create a more

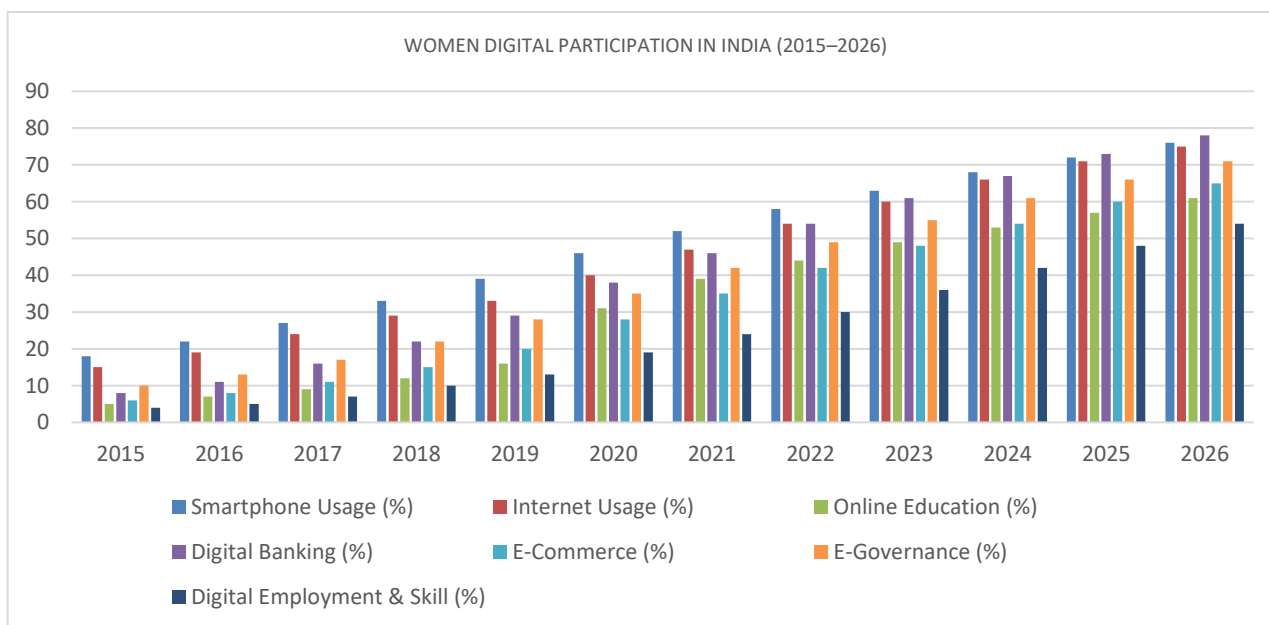
equitable society. (Egbuka, 2026)

The study examines how current levels of digital literacy among rural women affect their ability to access financial services, engage in entrepreneurship, and

participate in income-generating activities. Results show that better digital literacy greatly supports women's economic empowerment by creating more job opportunities, improving market access, and promoting financial independence. (Sharma, 2026)

WOMEN DIGITAL PARTICIPATION IN INDIA (2015–2026)

Year	Smartphone Usage (%)	Internet Usage (%)	Online Education (%)	Digital Banking (%)	E-Commerce (%)	E-Governance (%)	Digital Employment & Skill (%)
2015	18	15	5	8	6	10	4
2016	22	19	7	11	8	13	5
2017	27	24	9	16	11	17	7
2018	33	29	12	22	15	22	10
2019	39	33	16	29	20	28	13
2020	46	40	31	38	28	35	19
2021	52	47	39	46	35	42	24
2022	58	54	44	54	42	49	30
2023	63	60	49	61	48	55	36
2024	68	66	53	67	54	61	42
2025	72	71	57	73	60	66	48
2026*	76	75	61	78	65	71	54



Source: Compiled using secondary data from:

- [NITI Aayog](#)
- [NFHS-5 \(National Family Health Survey\)](#)
- [TRAI \(Telecom Regulatory Authority of India\)](#)
- [RBI Digital Payments Reports](#)
- [IAMAI Digital India Reports](#)
- [Digital India Programme \(MeitY\)](#)
- [NITI report: From Borrowers to Builders \(2025\)](#)

Online Learning Platforms and Skill Development

Online learning platforms such as SWAYAM, Coursera, Udemy, Google Digital Garage, and government-supported digital training programs provide women with opportunities to improve professional skills.

These platforms offer courses related to: Information technology, Digital marketing, Graphic designing, Communication skills, Entrepreneurship, Financial management, Teaching and training, Data analysis, Artificial intelligence. Women can access these programs from home, making education more flexible

and convenient.

Remote work opportunities, online training modules, and networking have become easier due to the internet, but their benefits are skewed. This paper explores the impact of increasing digitisation on female labour force participation. While the advent of digitisation has opened doors to new opportunities and empowered women through increased access to education, skills training, and financial inclusion, thus contributing to increasing female labour force participation, women's full economic potential is still hindered by persistent barriers such as the digital gender divide, occupational segregation, and safety concerns. (Bajaj, 2024)

with geographical distances from learning facilities. The ability to learn online enables women to earn qualifications and advance their education while maintaining their flexibility regarding time and physical locations.

Online platforms provide women with extensive learning options across domains from entrepreneurship to technology and healthcare to finance, thus they build professional qualifications for higher job opportunities and financial independence. Online courses have established mentorships and networking functions, and custom-designed skill development resources that benefit women in their occupational advancement. Because digital learning gives them access to up-to-date market knowledge, women may easily re-enter the workforce after they return.

Although women benefit from digital education, there are several obstacles, such as digital disparities, poor digital skills, and limited Internet access in certain regions. The impact of Online education for women will grow stronger through policy improvements combined with cheap technology solutions and women-centric awareness initiatives, which will promote lasting gender equality together with financial empowerment.

BENEFITS OF E-LEARNING FOR WOMEN

- Online courses provide women with the chance to learn as they please because they can easily adapt their education to their changing commitments.
- Through online education, women based in rural or remote locations have access to quality education services without needing to move their residence or make lengthy commutes.
- Through e-learning, women can develop new abilities and official qualifications, which result in better career advancement and professional development.
- Business, marketing, and finance courses give women essential competencies for launching

their self-owned businesses and taking on management.

- Affordable learning admission through digital education presents itself as a smart choice for economically limited female students.
- Three crucial characteristics are offered to women by many online platforms: worldwide expert peer networks, mentorship programs, and networking forums.
- Professional women who need to pause their careers can improve their skills through education to smoothly return to work. (Devi, 2025)

Challenges Faced by Women in Digital Education and Employment

1. **The Digital Divide.** Women, especially in developing countries, are less likely to have access to the internet, mobile phones, or digital skills. This gap disproportionately affects rural women, older women, and those from lower-income backgrounds. Without access to digital infrastructure, women are excluded from the benefits of the digital economy and may face further marginalization
2. **Job Displacement and the Changing Nature of Work** Women also tend to be underrepresented in the science, technology, engineering, and mathematics (STEM) fields, making it harder for them to transition into high-tech industries that are less vulnerable to automation.
3. **Gender Bias in Technology** The development and design of digital technologies are often shaped by male-dominated teams, leading to products and platforms that may not fully meet the needs of women. This gender bias in technology development can have real-world consequences, perpetuating inequalities and exclusion.
4. **Work-Life Balance and "Always-On" Culture** While digital tools enable flexibility, they also create challenges related to work-life balance. The constant connectivity offered by mobile phones, emails, and messaging apps can blur the boundaries between work and personal life, leading to increased stress and burnout, particularly for women who often juggle professional and domestic roles. (Suman Mishra Tiwari, 2024)
5. **Cultural norms and gender stereotypes** The widespread gender stereotypes and cultural conventions that determine women's roles in society are a major obstacle to

women's full engagement in the digital economy. The gender gap in technology and digital sectors is perpetuated by these preconceptions, which frequently deter women from seeking education and jobs in these industries.

6. Inability to Obtain Training and Education

This is especially noticeable in developing nations where there are significant gender differences in educational attainment. Women cannot fully engage in the digital economy if they lack the requisite digital literacy and skills.

Government Initiatives for Digital Education and Women Employment

The Government has taken various steps to ensure empowerment of women and girls through their educational, social, economic, and political uplift through various schematic interventions. The Government has also taken several initiatives for digital literacy of citizens, including women and girls, so that they can operate digital devices (like computers, smartphones, etc.) and work on them for various purposes, including educational, commercial, and digital transaction purposes

1.'Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)'

It aims to bridge the digital divide, especially targeting the rural population, including the marginalised sections of society, women, and girls, by covering 6 crore rural households. (SCHEME FOR DIGITAL EMPOWERMENT OF WOMEN, 2022)

2. Through the [STEM for Girls Program](#), girls in rural government schools and villages have broken gendered stereotypes in the field of education by accessing localized STEM educational content to explore Science, computational thinking, coding, and problem-solving skills. (Ghosh, 2025)

3 Digital Nakshatra Abhiyan (DISHA):

The Digital Saksharta Abhiyan (DISHA) was launched in 2014 by the Ministry of Electronics & IT (MeitY) with the aim of boosting basic digital literacy. This initiative particularly targets women and rural communities, empowering them to access online education, banking services, and various e-services

5. PMGDISHA-CSC Wi-Fi Choupal: PMGDISHA-CSC Wi-Fi Coupal- 2018, MeitY & CSC is all about bringing internet access and Wi-Fi connectivity to rural villages. This initiative empowers women by giving them the tools to tap into online services, engage in e-learning, and manage their finances more effectively.

6.Skill India Digital Platform: The Skill India Digital Platform, launched in 2023 by the Ministry of Skill Development & Entrepreneurship, provides a range of online skill development courses. These courses include special modules designed specifically for women, focusing on areas like digital marketing, e-

commerce, and entrepreneurship. (N.Gawate, 2023)

7. NITI Aayog's flagship initiative for women is the Women Entrepreneurship Platform (WEP), a unified portal that brings together aspiring and established women entrepreneurs to build sustainable, long-term businesses. It acts as a national aggregator, providing access to funding, mentorship, networking, and skill development. (<https://www.pib.gov.in/>, 2025)

FINDINGS AND DISCUSSION

The study highlights the growing importance of digital education in improving women's employment opportunities and economic empowerment. Digital learning platforms and government initiatives have increased women's access to education, skill development, entrepreneurship, and online employment opportunities. Flexible online education has especially benefited rural women, married women, and women returning to work after career breaks.

The findings reveal that digital literacy enhances women's employability by helping them participate in remote work, freelancing, online teaching, digital marketing, e-commerce, and other technology-based jobs. Digital education also strengthens financial independence by improving access to online banking, digital payments, and government welfare schemes. Many women are using digital platforms to start small businesses and expand entrepreneurial activities.

The COVID-19 pandemic further emphasized the importance of digital education and remote employment. Government programs such as Digital India, PMGDISHA, Skill India, and WEP have played an important role in promoting women's digital participation and awareness.

However, the study also identifies several challenges, including the digital divide, lack of internet access, low digital literacy, financial constraints, and socio-cultural barriers. Women in rural and marginalized communities continue to face difficulties in accessing technology and digital training. Gender stereotypes, domestic responsibilities, and low participation in STEM fields further limit women's opportunities in the digital economy.

Overall, the study concludes that digital education is a powerful tool for women's socio-economic development and empowerment. To maximize its benefits, there is a need for inclusive digital policies, improved digital infrastructure, affordable technology, gender-sensitive education, and greater social support for women's digital inclusion.

Recommendations and suggestions

Based on the findings of the study, the following suggestions are proposed to improve digital education and employment opportunities for women:

1. **Improvement of Digital Infrastructure**
The government should improve internet connectivity, electricity supply, and access to affordable digital devices, especially in rural and remote areas. Public Wi-Fi and community digital centers can help women access online education more easily.
2. **Promotion of Digital Literacy**
Special digital literacy programs should be organized for women and girls, focusing on computer skills, internet usage, online safety, and digital financial services. Local training centers can increase women's participation.
3. **Affordable Access to Technology**
Subsidized smartphones, laptops, and low-cost internet services should be provided to women students and job seekers. Scholarships and financial support for digital learning should also be expanded.
4. **Encouragement of STEM Education**
Women should be encouraged to participate in science and technology fields through awareness programs, mentorship, and scholarships. Educational institutions must promote equal opportunities in technical education.
5. **Expansion of Skill Development Programs**
Training programs should include practical digital skills such as coding, digital marketing, graphic designing, e-commerce, and entrepreneurship to improve women's employability.
6. **Support for Women Entrepreneurship**
Government and financial institutions should support women entrepreneurs through easy loans, online business training, mentorship, and digital marketing assistance.
7. **Awareness of Cybersecurity and Online Safety**
Programs on cybersecurity, online privacy, and safe internet practices should be conducted regularly to reduce fear of cyber harassment and encourage women's digital participation.
8. **Flexible Learning Opportunities**
Online learning platforms should provide flexible schedules, multilingual content, and user-friendly interfaces to meet women's educational and employment needs.
9. **Government and Private Sector Collaboration**
Partnerships between government agencies, educational institutions, NGOs, and private companies can help expand digital training, internships, and employment opportunities for women.
10. **Promotion of Gender Equality**
Awareness campaigns should challenge gender

stereotypes and encourage families and communities to support women's education, digital learning, and career development.

CONCLUSIONS

The digital transformation has the potential to significantly enhance women's economic participation, empowerment, and well-being. By enabling access to remote work, education, and entrepreneurship, digitalization can level the playing field and open new doors for women across the globe. However, these opportunities must be balanced against the challenges of the digital divide, job displacement, and gender bias in technology. Policymakers, businesses, and civil society organizations must work together to ensure that women are equipped with the tools, skills, and opportunities to thrive in the digital age. Only by addressing these challenges can we ensure that digitalization leads to a more inclusive, equitable, and sustainable future for all. (Suman Mishra)

The study concludes that digital education has become an important tool for improving women's employment opportunities and economic empowerment. Digital learning helps women develop professional, technological, and entrepreneurial skills required in the modern economy. It has increased opportunities in areas such as remote work, online business, freelancing, e-commerce, and online teaching. Government initiatives like Digital India, PMGDISHA, and Skill India have positively supported women's digital participation and skill development, especially in rural and semi-urban areas.

However, challenges such as poor digital infrastructure, limited internet access, financial problems, low digital awareness, and social barriers still restrict many women from benefiting fully from digital education. Therefore, joint efforts by governments, educational institutions, and society are needed to improve digital access, literacy, and employment opportunities for women.

Overall, digital education has strong potential to promote women's empowerment, gender equality, employment generation, and inclusive economic development.

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