



Digital Divide and Its Impact on Rural and Tribal Women in India: A Gendered Analysis of Access, Education, and Empowerment

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ABSTRACT

The digital revolution has reshaped societies by transforming access to education, employment, healthcare, and governance. Despite these advancements, unequal access to digital technologies continues to marginalize vulnerable groups, particularly rural and tribal women. This paper critically examines the digital divide and its impact on rural and tribal women in India. It explores how limited access to digital infrastructure, low levels of digital literacy, economic deprivation, patriarchal social structures, and linguistic barriers restrict women's participation in the digital sphere. The study highlights the consequences of digital exclusion on women's education, economic empowerment, access to government welfare schemes, and social participation. Drawing on secondary data, policy documents, and existing literature, the paper argues that bridging the digital divide is essential for achieving gender equality and inclusive development, in line with the goals of the United Nations Sustainable Development Agenda.

Introduction

The rapid expansion of digital technologies has become a defining feature of contemporary society. Digital tools now play a central role in education, communication, governance, healthcare delivery, and economic activities. Governments across the world increasingly rely on digital platforms to deliver public services, promote financial inclusion, and enhance citizen participation. In India, initiatives such as online education platforms, digital banking, and e-governance aim to promote inclusive growth and development.



However, the benefits of digitalization are not evenly distributed. Significant sections of the population remain digitally excluded, and this exclusion is deeply gendered. Rural and tribal women face multiple and intersecting disadvantages that restrict their access to digital technologies. The digital divide, therefore, is not merely a technological gap but a reflection of existing social, economic, and cultural inequalities.

This paper seeks to analyze the nature of the digital divide and its specific impact on rural and tribal women. It examines how digital exclusion affects their educational opportunities, economic participation, access to government services, and overall empowerment. By focusing on rural and tribal women, the study highlights the intersection of gender, geography, poverty, and social marginalization in shaping digital inequality.

Conceptualizing the Digital Divide

The digital divide refers to the unequal distribution of access to information and communication technologies (ICTs), including the internet, smartphones, computers, and digital skills. Scholars have identified multiple dimensions of the digital divide:

1. Access Divide

This refers to the lack of physical access to digital devices and reliable internet connectivity. In many rural and tribal regions, inadequate infrastructure, poor network coverage, and irregular electricity supply limit access to digital technologies.

2. Skills Divide

Even when access is available, many women lack the necessary digital literacy to use technology effectively. Limited education, lack of training opportunities, and fear of technology contribute to this divide.

3. Usage Divide

This dimension highlights differences in how technology is used. Rural and tribal women often use digital devices in restricted and passive ways, such as receiving calls, rather than actively using them for education, employment, or entrepreneurship.

For rural and tribal women, these divides overlap and reinforce each other, resulting in persistent digital exclusion.



Socio-Economic Position of Rural and Tribal Women

Rural and tribal women occupy a marginalized position within Indian society due to structural inequalities. They often experience lower literacy rates, limited access to formal education, economic dependency, and restricted mobility. Patriarchal norms frequently control women’s access to resources, including technology.

Tribal women face additional challenges due to geographical isolation, displacement, lack of institutional support, and cultural marginalization. These factors significantly influence their ability to engage with digital technologies. As a result, digital exclusion becomes an extension of existing social and economic inequalities.

Digital Divide in India:

1. Key Statistics and Trends

Below are recent national data points revealing the scale of digital exclusion, especially for rural and tribal women.

(Sources: National surveys, government reports, and research studies cited below.)

| Metric | Overall | Rural women | Rural men | Urban women | Urban men |
|--------------------------------------|------------|-------------|-----------|-------------|-----------|
| % Who Have Ever Used Internet (NFHS) | ~55% total | ~34% | ~55% | ~52% | ~73% |
| Gender Gap in Internet Use (NFHS) | n/a | 21% gap | n/a | n/a | n/a |
| % Women Among Total Internet Users | ~33% | | | | |

Interpretation:

Only about one-third of Indian women have ever used the internet, compared with more than half of men. In rural areas, only about 34% of women have ever used the internet, compared to 55% of rural men.



2. Mobile Phone Usage and Ownership

| Indicator | Rural Women | Rural Men | National Avg. Women | National Avg. Men |
|------------------------|-------------|-----------|---------------------|-------------------|
| Mobile Phone Usage | ~76.3% | ~89.5% | ~--- | ~--- |
| Mobile Phone Ownership | ~48.4% | ~80.7% | ~67% | ~79% |

(2025 survey by Indian government)

Many rural women use phones but do not own them, which limits autonomy and privacy

3. Digital Literacy and Skills

Around 56% of Indians aged 15+ cannot use email services; among women this rises to ~64%.

Women are 33% less likely to use mobile internet services than men.

Smartphone ownership and digital skill gaps exacerbate the divide, with women often limited to basic applications rather than productive use.

4. Rural-Urban Digital Divide

| Indicator | Rural | Urban |
|-----------------------------------|-------|----------------------|
| % Households with Internet Access | ~25% | ~65% |
| % Internet Users | ~42% | significantly higher |

This shows that despite rural India being home to the majority of Indians, digital inclusion remains low.

Socio-Cultural Barriers Amplifying Digital Exclusion

1 Gender Norms and Patriarchy

Socio-cultural restrictions limit women’s access to technology. In many households, men control device usage and mobility, restricting women’s ability to engage with digital platforms independently.

2 Economic Constraints



High costs of devices and data plans disproportionately affect women in lower-income, rural, and tribal households.

3 Language and Literacy Barriers

India's linguistic diversity and relatively low formal literacy in rural areas constrain effective use of digital content, especially when platforms prioritize English language interfaces.

4 Safety and Cyber Risks

Lack of awareness about online safety leads to fear of cyber violence, discouraging women from active digital participation.

Impact of the Digital Divide on Rural and Tribal Women

1 Educational Disadvantages

The shift to online education — accelerated during the COVID-19 pandemic — exposed deep digital inequalities. Without digital access and skills, rural girls and tribal women face higher dropout rates, fewer chances to engage with online learning resources, and reduced access to competitive exams and online skill development programs.

2 Economic Exclusion and Livelihood Impacts

The digital divide severely restricts women's economic participation:

Excluding women from digital finance platforms, e-commerce marketing, and online employment opportunities.

Women are more likely than men to be limited to low-income, informal work due to lack of digital skills, reducing upward mobility.

3 Access to Governance and Welfare

Many welfare schemes and public service delivery platforms are now digitized. Women without digital access struggle to enroll, track benefits, or submit applications independently, often relying on male intermediaries.

4 Social and Political Participation



Digital literacy and connectivity are increasingly essential for civic engagement, social networking, and political participation. Exclusion from digital platforms limits women's space in public discourse, advocacy, and community leadership.

6. Case Studies: Tribal Women and Digital Disempowerment

A study of tribal communities in the Wayanad district of Kerala reveals significant digital disempowerment among tribal women, where many have little or no access to internet or social media platforms.

7. Government and NGO Initiatives: Progress and Gaps

Successful Examples

Internet Saathi Program: Joint initiative by Google India, Intel, and Tata Trusts aims to train rural women in basic internet use, benefiting millions of women across thousands of villages.

State-level initiatives enhancing digital literacy and entrepreneurship among women.

However, many digital inclusion programs are gender neutral and do not adequately address the intersectional challenges rural and tribal women experience.

Policy Recommendations

To bridge the digital divide, targeted and gender-sensitive interventions are needed:

1 Enhance Infrastructure

Ensure reliable broadband and 4G/5G coverage in all rural and tribal areas.

Address connectivity gaps highlighted by villages remaining without mobile coverage.

2 Promote Digital Literacy

Expand community digital literacy centers focused on women. Offer training in local languages and culturally relevant curricula.

3 Increase Device Accessibility

Subsidize digital devices for women from low-income households. Partner with NGOs and CSR initiatives to distribute low-cost devices.



4 Focus on Safety and Empowerment

Provide training on cyber safety, online finance, and privacy protection. Create community support groups for women to share digital experiences.

5 Strengthen Monitoring and Accountability

Collect gender-disaggregated data on digital access and usage. Include women's digital inclusion targets in national development frameworks.

Conclusion

The digital divide in India remains a significant barrier to gender equality and inclusive development. Rural and tribal women — already marginalized by structural inequalities — face deep digital exclusion that affects their education, employment, access to services, and socio-political participation. Bridging this divide requires not only technological interventions but sustained socio-cultural transformation, gender-inclusive policymaking, and community-based capacity building. Ensuring that rural and tribal women are not left behind in the digital transformation is essential for sustainable and equitable national development.

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