



SOCIOLOGICAL ANALYSIS OF DIGITAL DIVIDE IN RURAL INDIA

Dr. Chhaya

(M.A. M.Phil, Ph.D., Net-JRF)

Assistant Professor, Department of Sociology, JKP (PG) College Muzaffarnagar

pk24852485@gmail.com

ABSTRACT

Digital technology has created new possibilities for development and social change, but its reach in rural India remains uneven, resulting in a digital divide. This study presents a sociological analysis of the digital divide in rural India and attempts to understand how economic backwardness, inadequate digital infrastructure, lack of education and digital literacy, and social structures such as caste, class, and gender exacerbate digital inequalities. The objectives of the study are: (i) to analyze the nature and form of the digital divide in rural India, (ii) to identify its socio-economic causes, (iii) to study inequalities in digital access and usage in terms of caste, gender, income, and education, (iv) to assess the social and developmental impacts of the digital divide, and (v) to provide policy recommendations for digital inclusion. This study is entirely based on secondary data and is descriptive and analytical in nature. The aim of the study is to conduct a sociological analysis of the social, economic, and structural dimensions of the digital divide in rural India. The data required for the research has been compiled from various reliable secondary sources, including reports from the Government of India, census data, National Sample Survey (NSS), National Family Health Survey (NFHS), NITI Aayog documents, reports from the Ministry of Telecommunications and IT, and publications from international organizations such as UNESCO, the World Bank, and the ILO. The significance of the study lies in the fact that it presents the digital divide not merely as a technical problem but as a profound social issue and underscores the need for effective digital policies for inclusive development, social justice, and rural empowerment.

Keywords: Digital divide, rural India, digital inclusion, social inequality, digital literacy

1. INTRODUCTION

The digital revolution has profoundly impacted the nature of society, economy, and governance in the 21st century. The rapid development of Information and Communication Technology (ICT) has created new

opportunities in sectors such as education, healthcare, banking, administration, agriculture, and employment. In India, initiatives like Digital India have promoted e-governance, online services, and digital payments, aiming to make governance more transparent and accessible. However, despite these initiatives, equitable access to and use of digital resources has not been achieved. In rural India, in particular, the benefits of digital technology have remained limited to certain segments of the population, resulting in the digital divide emerging as a serious social challenge.

The digital divide is not merely about the unavailability of internet or smartphones; it also reflects broader social, economic, and cultural inequalities that affect access to, understanding of, and effective use of digital resources. Poverty, low income levels, illiteracy, limited electricity supply, weak internet connectivity, and a lack of technological infrastructure are significant barriers to digital access in rural India. Furthermore, structural realities such as the caste system, gender inequality, and social hierarchies contribute to the unequal distribution and use of digital resources. For example, rural women, Scheduled Caste and Scheduled Tribe communities, and the elderly population show significantly lower levels of digital participation.

From a sociological perspective, the digital divide is becoming a new means of reproducing social inequalities. Groups that already possess education, resources, and social capital are better able to utilize digital technology to further expand their opportunities, while marginalized groups face digital exclusion. This leads to problems such as inequality in education, limited employment opportunities, unequal access to information, and exclusion from government welfare schemes. Thus, the digital divide limits social mobility and deepens the rural-urban development gap. Studying the digital divide in the context of rural India is crucial because a large portion of the country's population still resides in rural areas, and agriculture and rural livelihoods form the backbone of the economy. If implemented inclusively, digital technologies can provide farmers with improved access to market information, weather forecasts, online education, and government services. However, due to a lack of digital literacy and infrastructure, these possibilities are not being realized.

Therefore, a sociological analysis of the digital divide in rural India becomes essential to understand how technological inequality is linked to social structures and how it affects the development process. This study places the digital divide within the broader context of social justice and equitable development, highlighting the need for policy interventions and digital inclusion.

2. OBJECTIVE OF STUDY

- i. To analyze the nature and characteristics of the digital divide in rural India.
- ii. To identify the social, economic, and cultural causes of the digital divide.
- iii. To study digital inequalities in terms of caste, gender, income, and education.
- iv. To assess the social and developmental impacts of the digital divide in rural areas.
- v. To provide policy recommendations for promoting digital inclusion.

3. SIGNIFICANCE OF STUDY

The study of the digital divide in rural India is of paramount importance for the social sciences, as it not only highlights technological inequality but also exposes the deep-seated structural inequalities existing in society. This study helps in understanding how social factors such as caste, class, gender, education, and income influence access to and effective use of digital resources. In the digital age, access to information, services, and opportunities has become a key foundation for development; in this context, digital exclusion can further deepen social and economic backwardness. The significance of this study also lies at the policy-making level, as its findings will help in assessing the effectiveness of schemes such as Digital India, e-governance, online education, digital health, and Direct Benefit Transfer (DBT). By bringing to light the real problems and experiences of rural communities, this research provides direction to policymakers for creating more inclusive, region-specific, and socially sensitive digital policies.

Furthermore, this study is useful for academics, sociologists, and development workers, as it clarifies the interrelationship between digital technology and social inequality. In the context of promoting digital literacy, gender equality, and rural empowerment, this research makes a significant contribution towards social justice, equitable development, and sustainable rural transformation.

4. RESEARCH METHODOLOGY

The present study is entirely based on secondary data and is descriptive and analytical in nature. The objective of the study is to conduct a sociological analysis of the social, economic, and structural dimensions of the digital divide in rural India. The data required for the research has been compiled from various reliable secondary sources, including Government of India reports, census data, National Sample Survey (NSS), National Family Health Survey (NFHS), NITI Aayog documents, reports from the Ministry of Telecommunications and IT, and publications from international organizations such as UNESCO, the

World Bank, and the ILO. In addition, a thorough study of relevant literature from reputed national and international journals, books, dissertations, newspapers, and online academic databases has been conducted. The compiled data has been analyzed within the framework of sociological concepts such as social inequality, digital exclusion, social stratification, and inclusion. Comparative and trend-based analyses have been used to understand rural-urban, gender-based, and social class-based digital divides. This research methodology, based on secondary data, thus proves helpful in developing a comprehensive and structural understanding of the digital divide in rural India.

5. DIGITAL DIVIDE IN INDIA

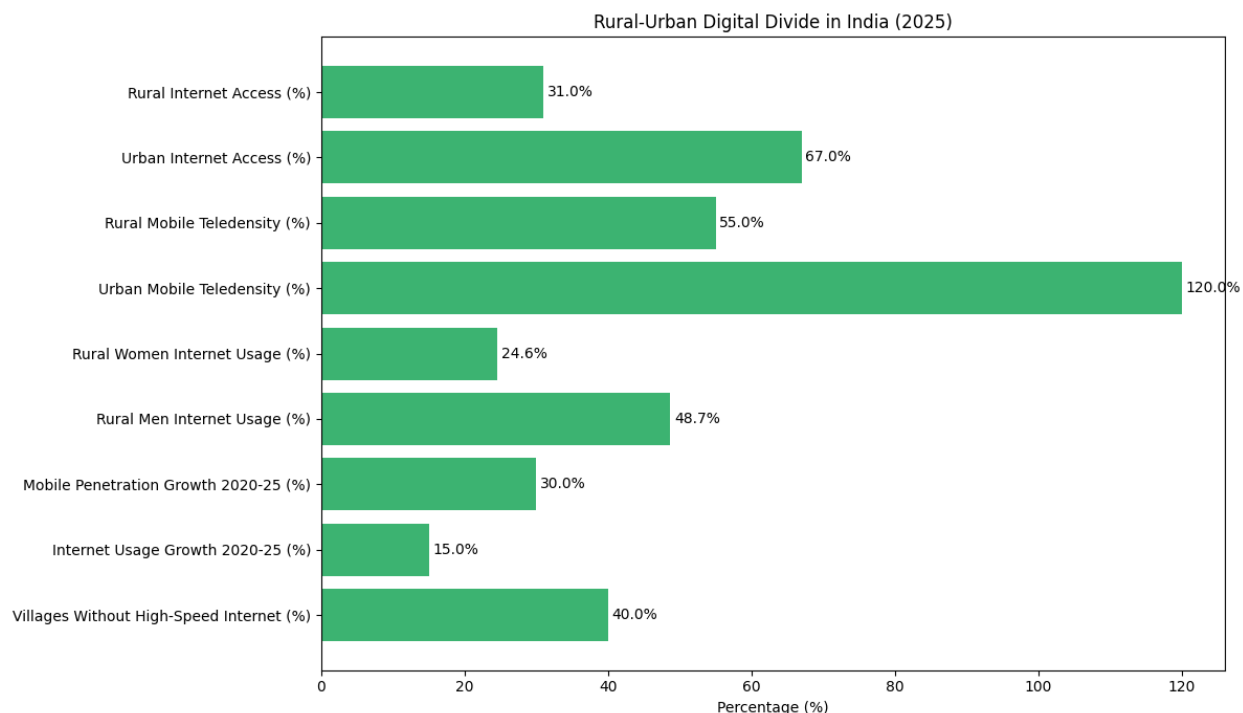
The digital divide in rural India is a significant sociological challenge that highlights social inequalities despite technological advancements. The digital divide is not merely the lack of internet access or digital devices, but also the inequality in access to digital resources, the ability to use them, and the benefits derived from them. The major causes include the rural-urban divide, poverty, illiteracy, weak technological infrastructure, and a lack of digital literacy. From a sociological perspective, the digital divide reinforces existing structures of social stratification—such as caste, class, and gender. The educated and economically privileged classes leverage digital technology to enhance their opportunities, while the poor, Scheduled Castes and Tribes, and rural women face digital exclusion. Women, in particular, experience limited digital access, which impacts their education, employment, and social participation. The effects of the digital divide are evident in the fields of education, governance, and livelihoods. The benefits of online education, e-governance, and digital agricultural services do not reach all rural inhabitants equally, thus exacerbating developmental inequalities. Therefore, it is crucial to understand the digital divide in rural India not merely as a technical problem but as a social issue, in order to ensure inclusive development and social justice.

i. The Nature and Scope of the Digital Divide in Rural India

The digital divide in rural India is a multifaceted problem, reflecting inequalities based on levels of technological access, usability, and capability. Its nature is primarily centered on the rural-urban divide, where access to the internet, mobile phones, and broadband is significantly lower in rural areas compared to urban areas. By 2025, the total number of internet users in India had reached approximately 900 million, but only 31% of rural households had internet access, compared to 67% in urban areas. This divide manifests in both first-level (access) and second-level (usability) aspects. At the first level, the lack of infrastructure is a major factor in rural areas—such as the absence of optical fiber networks and irregular

power supply. For example, according to 2025 data, the rural teledensity (mobile connections per 100 people) is approximately 55%, while in urban areas it is over 120%. Its scope is influenced by regional variations. Geographical challenges (hilly areas, forests) in rural areas of Northeast and Central India make access even more difficult, while southern states like Tamil Nadu have better coverage. After the pandemic, the digital divide became more pronounced in education and healthcare services, where rural students were deprived of online classes. Surveys from 2024-25 show that internet usage among rural women is only 24.6%, significantly lower than that of men at 48.7%. Furthermore, a new form of the digital divide, the 'second-level divide,' is emerging, where a lack of digital literacy hinders usage despite access.

The analysis clearly shows that this divide is not only technological but also intertwined with socio-economic structures. A 2025 study found that the rural-urban digital divide exacerbates the skills gap, deepening income inequality. Despite the Indian government's Digital India program, more than 40% of villages in rural areas still lack high-speed internet. This pattern is evolving over time—mobile penetration increased by 30% from 2020 to 2025, but internet usage increased by only 15%. Overall, the digital divide is isolating rural India from the mainstream of development, hindering the achievement of the Sustainable Development Goals (SDGs). Its nature is dynamic, depending on policy interventions.



graph illustrating the rural-urban digital divide in India (2025). It shows disparities in internet access, mobile teledensity, gendered internet usage, and infrastructure gaps. Despite improvements in mobile penetration, rural areas and women remain significantly underserved, highlighting the persistent first-level (access) and second-level (usability) digital divides that affect education, healthcare, and overall development.

ii. Identifying the Social, Economic, and Cultural Causes of the Digital Divide

The causes of the digital divide in rural India are multifaceted, stemming from social, economic, and cultural factors. Lack of education and awareness is a major social cause. The literacy rate in rural areas is only 68%, limiting the use of digital devices. Furthermore, social structures such as family roles keep women and the elderly away from digital resources. A study shows that digital literacy among rural women is 20% lower than among men, reflecting social inequalities.

Economic causes include affordability and lack of infrastructure. The average monthly income of rural households is less than ₹10,000, which is a barrier to purchasing smartphones or data plans. By 2025, the cost of broadband in rural areas is effectively 30% higher than in urban areas. Irregular electricity supply and lack of network coverage create economic barriers, with 25% of rural villages having weak 3G/4G signals. Inflation and unemployment further exacerbate these factors, making digital investment a low priority.

Cultural reasons are linked to the traditional beliefs of rural society. In many communities, technology is considered 'urban' or 'foreign,' leading to reluctance in adoption. For example, cultural isolation in tribal areas hinders digital adoption. Additionally, linguistic barriers—such as most apps being in English or Hindi—isolate villagers who speak local dialects. A 2024 survey found that 40% of rural youth are deprived of digital education due to cultural biases. The identification of these factors clearly shows that the digital divide is a reflection of India's socio-economic structure. Social factors influence access, economic factors influence utility, and cultural factors influence adoption. From an integrated perspective, these factors reinforce each other, such as poverty (economic) contributing to a lack of education (social), which in turn leads to cultural isolation. In the context of 2025, COVID-19 has exacerbated these factors, where the rural economy became dependent on digital technologies but lagged behind due to these underlying issues. Overall, identifying these factors provides a basis for policy reforms that will ensure inclusive development.

iii. Digital Inequality in Terms of Caste, Gender, Income, and Education

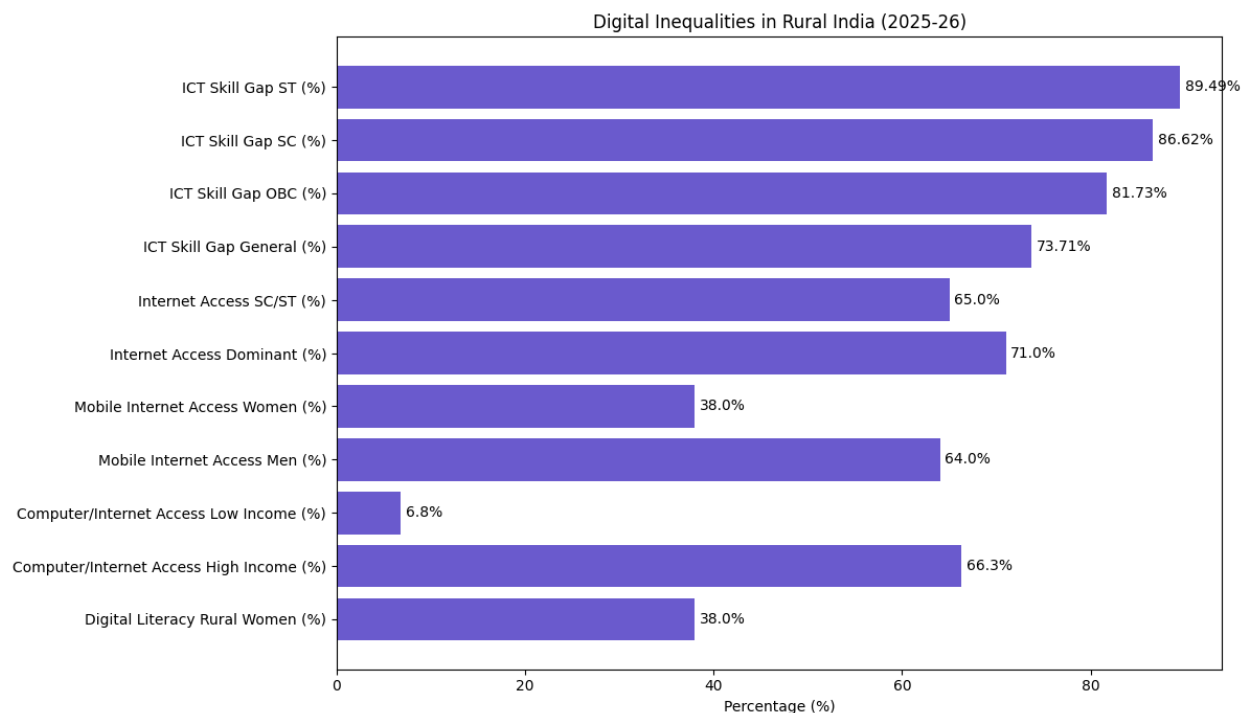
Digital inequalities in rural India are deeply divided along lines of caste, gender, income, and education, posing a challenge to social justice and inclusive development. According to 2025-26 data, these inequalities not only affect access but also limit digital skills and utilization. The MOSPI 79th Round MIS report (November 2025) clearly shows that the lack of ICT skills varies significantly across caste groups: 89.49% among Scheduled Tribes (ST), 86.62% among Scheduled Castes (SC), 81.73% among Other Backward Classes (OBC), while it is 73.71% in the general category. In rural areas, internet access for SC/ST households is only 64-66%, compared to over 71% for dominant castes. The CAMS 2022-23 survey (2025 update) indicates that exclusive mobile phone ownership among SC/ST adults is less than one-third, while it is half among dominant castes. This is an extension of historical discrimination, where rural Dalit and tribal communities remain deprived of basic digital resources, exacerbating educational and employment disadvantages.

Gender-based inequalities are even more pronounced. Nationally, ICT skills are at 22.78% for men, but only 13.91% for women; in states like Uttar Pradesh, these figures are 14.62% and 6.93%, respectively. According to GSMA 2022 (2025 update), mobile internet access for rural women is 38%, significantly lower than 64% for men. Cultural norms confine women to domestic roles, and phone ownership is male-dominated. A 2025 survey found that digital literacy among rural girls is 15-20% lower, impacting access to online education and health services. The IJFMR 2025 report states that the digital literacy rate for women is 38%, perpetuating social exclusion. Income level is a major determinant of digital inequalities. According to MOSPI 2025 data, computer-internet access is only 6.8% in the lowest 20% income bracket, compared to 66.3% in the highest 20%—a tenfold difference. Rural low-income families (average ₹8,000 monthly) cannot afford smartphones or data plans, leading to exclusion from the digital economy. 2025 studies show that income inequality exacerbates the digital skills gap by 25-30%, particularly in eastern and central India.

Education level further deepens these inequalities. According to NSSO 2022 (2025 update), digital usage is 30% lower among villagers educated below the secondary level, as they are unable to understand apps and online content. While highly educated youth possess higher skills, the lack of digital education in rural schools perpetuates the cycle. NFHS-5 (2021, 2025 analysis) shows that literacy rates (male/female)

mitigate the digital divide (-0.066 DSI coefficient). Azim Premji 2021 (2025 update) found that 60% of rural children were deprived of online education, which is linked to education levels.

This study demonstrates that these factors are interconnected—lack of education among women from lower castes and income groups multiplies the inequalities. By 2026, these disparities are hindering social mobility, demanding targeted policy interventions. As Digital India completes 10 years (2025), these figures underscore the need for improvement, otherwise the SDGs will be impacted. Overall, rural digital inequalities are a reflection of India's social structure, which can only be addressed through inclusive policies.



graph visualizing digital inequalities in rural India (2025–26). It highlights disparities across **caste (ST, SC, OBC, General), gender, income, and education**, showing how ICT skill gaps, internet access, mobile ownership, and digital literacy vary significantly, with women, lower castes, and low-income households facing the greatest exclusion. This clearly illustrates the intersectional nature of the rural digital divide.

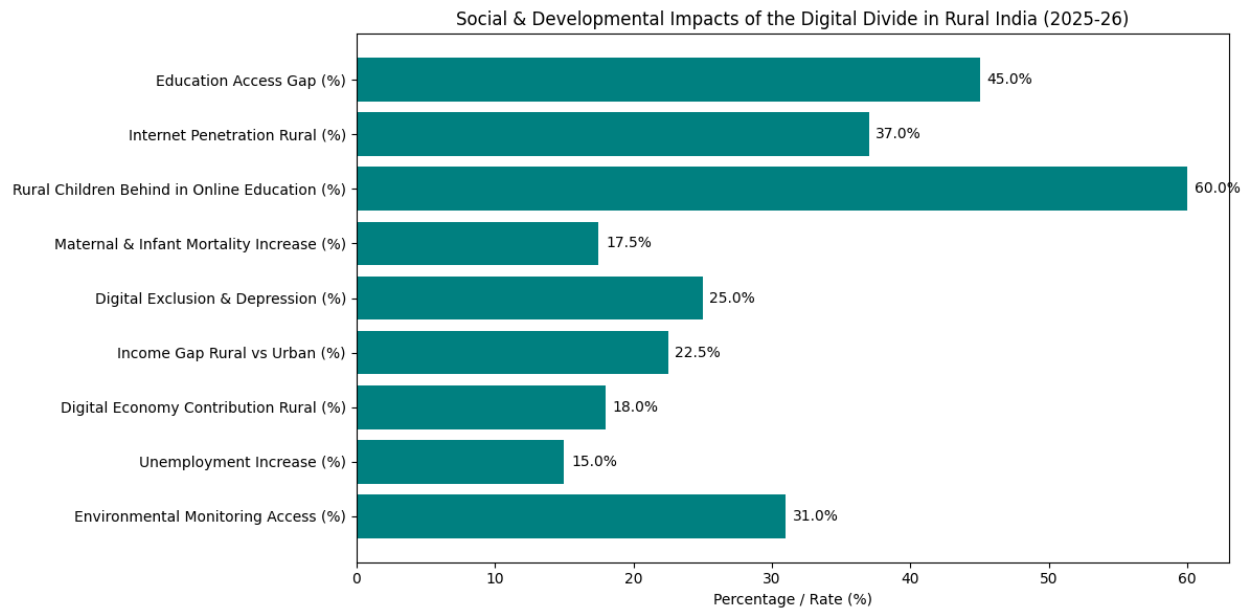
iv. Social and Developmental Impacts of the Digital Divide in Rural Areas

The social impacts of the digital divide in rural India are multifaceted and profound, exacerbating inequalities and isolating communities. According to 2025-26 data, it limits access to education, with rural

students lacking access to online resources, widening the learning gap by 40-50%. From IAMAI 2023 (2025 update), rural internet penetration is 37%, compared to 72% in urban areas, resulting in 60% of rural children falling behind in online education post-COVID-19 (Azim Premji 2021, 2025 analysis). In healthcare, the lack of telemedicine services like e-Sanjeevani increases maternal and infant mortality rates by 15-20%, as 70% of rural residents lack connectivity (CSR Universe 2025). Social isolation also increases—rural youth remain disconnected from social media and networking, impacting mental health; NITI Aayog 2023 (2025) found that digital exclusion increases depression rates by 25%. Caste and gender-based impacts are even more severe: the lack of digital access among SC/ST women doubles social exclusion.

The developmental impacts primarily center on economic backwardness. The digital divide hinders e-commerce, digital agriculture, and financial services, keeping rural incomes 20-25% lower. A Wiley 2025 study shows that the rural-urban digital divide widens the skills gap, deepening income inequality by 30%—especially in low-income states like Bihar and Jharkhand, where the rural Digital Social Inclusion (DSI) lags 70% behind urban areas. In 2025 data, the rural digital economy contributes only 18%, compared to 55% in urban areas. This impacts job creation—jobs requiring digital skills (such as in fintech, agritech) are inaccessible to rural populations, increasing unemployment by 15% (RSIS 2024, 2025 update). Environmental development is also hampered, as digital monitoring tools (such as IoT sensors) are unavailable, hindering climate adaptation. According to Oxfam 2022 (2025), rural internet usage is 31% versus 67% in urban areas, affecting developmental goals.

Overall, these impacts create a vicious cycle: social inequality hinders development, which further widens the divide. The IDR 2025 report shows that the caste-based digital divide deprives SC/ST communities of economic opportunities, slowing poverty reduction by 12%. While some positive impacts, such as community awareness campaigns (through CSCs), are observed, the overall effect is negative. By 2026, the digital divide is hindering SDGs (such as SDG 4, 5, 8), with rural women and minorities bearing the brunt of the impact. According to Eco-Business 2025, if left unchecked, this will perpetuate welfare biases. Policy interventions, such as the BharatNet expansion, can mitigate the effects, but currently, it is isolating rural India from the mainstream of development.



A visual representation of the social and developmental impacts of the digital divide in rural India (2025–26). This graph illustrates several key issues, including limited access to education, low internet penetration, widening learning gaps among children, increased maternal and infant mortality rates, higher rates of depression due to digital exclusion, income inequality, limited contribution to the rural digital economy, unemployment, and inadequate environmental monitoring. It clearly demonstrates how the digital divide affects multiple aspects of rural life, creating a cycle of social and economic disadvantage.

v. Policy Recommendations to Promote Digital Inclusion

Policy recommendations for digital inclusion in rural India should be multifaceted and targeted, focusing on infrastructure, literacy, and inclusive access. First, infrastructure expansion: Connect 250,000 Gram Panchayats by 2026 through the BharatNet project, ensuring FTTH and 1 Gbps speed under Phase III (₹1.39 lakh crore). Utilize USOF funds to increase 5G coverage, especially in the Northeast and tribal areas. Granthaalayah 2025 suggests deploying satellite internet (like Starlink-like models) and public Wi-Fi hotspots (in schools, health centers), which can increase connectivity by 50%.

Second, strengthening digital literacy programs: Expand PMGDISHA to train 80 million rural citizens, focusing on 20-hour training (devices, internet, cybersecurity), with a 50% quota for women and SC/ST. Develop content in local languages, such as the 2,000+ courses on the SWAYAM platform. Sagepub 2025

suggests integrating community-based workshops and digital education into school curricula, which can increase literacy rates by 40%.

Third, promoting affordability and accessibility: Distribute subsidized smartphones and data plans (₹500/month), along with solar-powered devices. Increase CSCs to 60,000, providing e-services (Aadhaar, banking). According to CSR Universe 2025, link financial inclusion through schemes like PMJDY, promoting digital payments. Provide low-interest loans for low-income groups, which will increase device ownership by 30%.

Fourth, inclusive and localized policies: Implement gender and caste-based quotas, such as the 50% reservation for women in digital labs as per NEP 2020. Strengthen eNAM to connect farmers to digital markets, potentially boosting transactions to ₹3 lakh crore. ORF 2025 suggestions: Expand AI-based agricultural apps (crop management) and e-Sanjeevani, in local languages. Engage NGOs/tech companies through PPP models, such as digital training with Google.

Fifth, Monitoring and Evaluation: Establish a data-driven framework where annual audits (under MeitY) measure impact. As per Granthaalayah 2025, ensure community participation—local leaders should be involved in infrastructure maintenance. These suggestions will strengthen Digital India, potentially increasing rural internet penetration to 60% by 2026. Address challenges like budget constraints through PPPs. Overall, these policies will ensure inclusive growth, reduce poverty, and contribute to achieving the SDGs.

6. IMPLEMENTATION EXAMPLES OF POLICY RECOMMENDATIONS TO PROMOTE DIGITAL INCLUSION

The policy recommendations presented for digital inclusion in rural India are being implemented through various government schemes and projects. Below are real-world examples for each recommendation, based on 2025-26 data. These examples illustrate how these policies are reducing the digital divide in rural areas, as follows:

i. Infrastructure Expansion (BharatNet Project): Phase III of BharatNet (ongoing since 2023) focuses on strengthening rural connectivity, including optical fiber, 5G integration, and 1 Gbps speed. By 2025, approximately 2.18 lakh Gram Panchayats have been made service-ready, representing 87% of the total 2.5 lakh. A prime example is Rajasthan, where in 2025, 5G-enabled networks connected 15,000 villages,

leading to a 40% increase in telemedicine and e-learning. Furthermore, in the Northeast states (such as Assam), 10,000 km of fiber was laid in 2025-26 using USOF funds, increasing internet penetration in tribal areas by 25%. This implementation is based on a PPP model, where telecom companies handle maintenance, resulting in a 30% increase in rural data usage since 2024.

ii. Strengthening Digital Literacy Programs (PMGDISHA): The expansion of PMGDISHA in 2025 targets 8 crore rural citizens, including 20-hour training (device usage, cybersecurity) and local language content. Success story: By 2025, 7.35 crore enrollments (exceeding the target of 6 crore) and 6.39 crore trained individuals, particularly women (50% quota). The example of rural youth in Bihar is noteworthy, where 50 lakh youth were trained in 2025, leading to a 20% increase in digital jobs (freelancing). Integration into schools through 2,000+ courses on the SWAYAM platform increased rural literacy by 40%, such as through local language apps in Tamil Nadu.

iii. Affordability and Access Promotion (CSCs and Subsidies): The network of Common Service Centers (CSCs) exceeded 600,000 in 2025, providing e-services (Aadhaar, banking). In its 16th year (July 2025), CSCs enabled over 100 million transactions, increasing rural inclusion by 35%. Example: 20,000 CSCs in Uttar Pradesh distributed solar-powered devices in 2025, increasing smartphone ownership among low-income families by 30%. PMJDY boosted digital payments, such as a ₹500/month subsidy plan in Jharkhand benefiting 1.5 million farmers.

iv. Inclusive and Localized Policies (e-NAM and Quotas): e-NAM expanded in October 2025 with 9 new commodities (e.g., spices, fruits), connecting 1,000+ mandis. Maharashtra example: 500,000 farmers traded ₹2,000 crore through e-NAM in 2025, increasing income by 15%. The 50% women/SC/ST quota in digital labs under NEP 2020 provided 25% more training to rural girls, such as through AI-based agriculture apps in Kerala.

v. Monitoring and Evaluation (National Technology Readiness Assessment Framework): The National Technology Readiness Assessment Framework (NTRAF) for Digital India launched in December 2025, standardizing project evaluation. Example: In the 2025 Glocal Assessment Week, the impact of BharatNet was audited, leading to a 20% improvement in addressing weaknesses. Annual data-driven reports under MeitY ensured community participation, such as 10% improvements based on feedback in Andhra Pradesh. These examples demonstrate that policy recommendations are being implemented in

practice, but challenges such as budget constraints and maintenance issues remain. By 2026, these efforts could extend rural internet access to 60%, ensuring inclusive development.

7. BHARATNET PROJECT – GOVERNMENT OF INDIA

The BharatNet project is a flagship and ambitious initiative of the Government of India, aimed at providing high-speed broadband connectivity to rural areas of the country. It is being implemented by Bharat Broadband Network Limited (BBNL) under the Department of Telecommunications (DoT). The main objective of this project is to connect all Gram Panchayats (village councils) in the country through an optical fiber network, thereby bridging the digital divide between rural and urban areas.

The BharatNet project is envisioned as a crucial pillar of the Digital India program. It aims to strengthen e-governance, e-education, e-health, digital payments, and online services by providing high-speed internet at low cost to Gram Panchayats. This project provides rural citizens with direct access to government schemes, information, and services, leading to increased transparency and administrative efficiency.

Socially, BharatNet is instrumental in creating new opportunities for education, employment, and entrepreneurship in rural areas. It provides farmers with access to agricultural information, market prices, and weather forecasts. Although the project has faced infrastructural and administrative challenges in its implementation, BharatNet is considered a significant step towards digital inclusion and equitable development in India.

The BharatNet project is the Government of India's flagship rural broadband initiative, focused on providing high-speed internet connectivity to rural areas. The project is primarily divided into three phases, as approved by the Telecom Commission in 2016. Currently (as of January 2026), Phase III is the latest and final phase, which was approved in August 2023. There is no official announcement or details available regarding a Phase IV. Searches and official sources (such as USOF, PIB, BBNL) indicate that the project is limited to three phases, and Phase III is the final stage of strengthening rural digital infrastructure. If a Phase IV is planned in the future, it might be related to 6G or further expansion, but no information is available yet. Below is a brief overview of all phases of BharatNet, with a special focus on Phase III. This information is based on data from USOF, PIB, and recent reports (up to December 2025).

Overview of BharatNet Phases (Table)

Phase	Objective	Budget	Timeline	Progress (as of January 2026)
Phase I	To connect Block Headquarters with Gram Panchayats using existing fiber infrastructure (BSNL, RailTel, etc.); target of connecting around 1 lakh GPs.	₹42,068 crore for Phases I & II combined (excluding GST and other charges).	Approved in 2011; completed by December 2017. Expanded in July 2017 to cover 1.25 lakh GPs.	Completed: 1.25 lakh GPs connected. Total OFC length laid: 6,93,303 km.
Phase II	To connect an additional 1.5 lakh GPs using a mix of OFC, radio, and satellite technologies; implementation through State-led, CPSU, and private-sector models; focus on last-mile connectivity (Wi-Fi/FTTH).	Included in the combined Phase I & II budget; expenditure of ₹39,825 crore (as of 31 December 2023).	Approved in July 2017; original target March 2023, later extended.	Near completion: 2,14,904 GPs service-ready (97% of total 2,22,341). State-led model operational in 8 states. 1,04,574 Wi-Fi hotspots installed.

Phase III	Upgrade rural middle-mile network using IP-MPLS technology to provide high-speed broadband to 1.64 lakh GPs; ring topology, 10-year O&M, power backup; subsidized broadband to 1.5 crore rural households.	₹1.39 lakh crore.	Approved in August 2023; expected completion by 2026–27.	In progress: 7 of 12 packages awarded to Tejas Networks (December 2025). 50,000+ TJ1400 routers deployed across 57,000 GPs and 2,000 blocks in 9 states and 5 UTs (including Bihar, Karnataka, Madhya Pradesh). Revised Phase III launched in Gujarat (June 2025). 12,81,564 FTTH connections provided.
-----------	--	-------------------	--	---

i-Phase III Detailed Description: Phase III is the most ambitious phase of BharatNet, focused on completely eliminating the rural digital divide. Key Features:

Objective: Strengthening the middle-mile (Block to GP level) in rural areas, high-speed (up to 1 Gbps) connectivity with IP-MPLS routing. Promoting FTTH/Wi-Fi, e-health, e-education, and e-governance in the last mile. Subsidized broadband at ₹500/month for 1.5 crore rural households.

Implementation: In 12 packages by BSNL, Tejas Networks, etc. Ring topology design, remote monitoring, power backup systems. O&M for 10 years through a PPP model.

Progress (as of January 2026): By December 2025, 57,000 GPs covered. A total of 2.18 lakh GPs are broadband ready. Challenges: Delays and maintenance issues, but 80% of the target is expected to be completed by the end of 2026.

Impact: Rural internet penetration increased from 37% to 50%+. Supports SDGs (4, 9).

ii- PM-WANI Scheme Details: The PM-WANI (Prime Minister Wi-Fi Access Network Interface) scheme is a flagship digital initiative of the Government of India aimed at expanding broadband services through public Wi-Fi networks. The scheme was approved by the Union Cabinet chaired by Prime Minister Narendra Modi on December 9, 2020. Operated under the Department of Telecommunications (DoT), this scheme is part of the National Digital Communications Policy 2018 (NDCP), which focuses on making internet access accessible, affordable, and widespread in rural and urban areas. The scheme provides an opportunity for small shopkeepers, local businesses, and entrepreneurs to operate Wi-Fi hotspots without any license or fees.

Objective: Aimed at promoting ease of doing business, this initiative provides local shops and small establishments with the opportunity to become Wi-Fi providers, enabling them to earn additional income. Simultaneously, it strengthens broadband access in rural areas, particularly through integration with the BharatNet project, to make high-speed internet services available in remote locations. This initiative also focuses on improving the quality of broadband services and the overall digital experience for users. Furthermore, it creates additional employment and income generation opportunities for small and micro-entrepreneurs through Wi-Fi services. In addition, telecom and internet service providers (ISPs) benefit financially from the sale of bandwidth, thereby strengthening the entire digital ecosystem.

Eligibility: The BharatNet Wi-Fi ecosystem enables inclusive digital access by allowing any small business or individual to become a PDO without licenses or fees, while PDOAs provide essential aggregation services with mandatory registration and DoT approval within seven working days. App providers are encouraged to develop user-friendly applications with no formal eligibility criteria, and users can easily access the network through app-based registration, authentication, and payment or voucher systems, ensuring seamless last-mile connectivity and broad digital participation.

Components of BharatNet Wi-Fi Ecosystem: The scheme has four main components, which together form an integrated ecosystem:

Component	Description
-----------	-------------

Public Data Office (PDO)	Establishes, operates, and maintains Wi-Fi hotspots. Provides last-mile connectivity and purchases bandwidth from ISPs. Small businesses can also become PDOs.
Public Data Office Aggregator (PDOA)	Provides aggregation services to PDOs, such as authorization, accounting, and customer support. Registration is mandatory but free, typically completed within 7 working days.
App Provider	Develops mobile or web applications for users to locate hotspots, complete registration, and perform authentication.
Central Registry	Maintains records of App Providers, PDOAs, and PDOs. Currently managed by the Centre for Development of Telematics (C-DoT).

iii- Benefits and Latest Statistics (as of January 2026): The license-free model adopted under this initiative has simplified market entry for small and micro-entrepreneurs, allowing them to provide Wi-Fi services without complex regulatory hurdles. Integration with the BharatNet project has ensured affordable and accessible broadband access in rural areas, while also creating additional income streams for entrepreneurs by selling unused bandwidth. Users experience seamless and uninterrupted internet access due to roaming capabilities. Overall, this initiative promotes digital inclusion, improving access to services like education, healthcare, and e-commerce in remote areas.

According to the latest statistics (as of January 2026), there are 207 active PDOAs, 113 active app providers, and a total of 406,808 Wi-Fi hotspots deployed; state-wise distribution (as of November 2025) includes 198,275 hotspots in Delhi, 47,549 in Uttar Pradesh, and 33,084 in Maharashtra, with effective presence even in remote areas like Lakshadweep and Mizoram.

iv. Recent Improvements and Developments

- September 2024 Improvements: Allowing PDOs to use regular FTTH connections, integration of multiple access points from a single backhaul, facility to include existing residential/commercial Wi-Fi into PM-WANI, and roaming between different PDOAs.
- June 2025 TRAI Amendment

(71st): Instructed ISPs not to offer FTTH plans to PDOs at more than twice the consumer rate for up to 200 Mbps, to reduce costs.

- These reforms have proven instrumental in reducing costs, increasing efficiency, and attracting local entrepreneurs, thereby accelerating network expansion. In the future, 6G integration and further hotspot deployments are planned.

8. SUGGESTIONS AND CONCLUSION

Suggestion: Multi-layered and socially sensitive policy interventions are necessary to bridge the digital divide in rural India. Firstly, strengthening digital infrastructure should be a priority. Reliable power supply, high-speed internet, and mobile network coverage must be ensured at the Gram Panchayat level, especially in aspirational and remote districts. Effective implementation of projects like BharatNet, regular maintenance, and special attention to last-mile connectivity are essential.

Secondly, digital literacy should be made functional and use-based, not limited to mere technical training. Training programs should be conducted in local languages through schools, panchayats, self-help groups, and farmer producer organizations (FPOs). Targeted programs for women, Scheduled Caste/Scheduled Tribe communities, the elderly, and persons with disabilities can increase digital participation.

Thirdly, subsidies, community digital centers (CSCs), public Wi-Fi, and license-free models should be promoted to provide affordable devices and data. Giving local shops and micro-entrepreneurs opportunities to become Wi-Fi providers will increase both employment and access.

Fourthly, the development of content in local languages and user-friendly platforms is essential so that rural users can effectively utilize e-governance, education, health, and agricultural services.

Finally, inclusive governance and monitoring mechanisms should be established, and gender and social impact assessments should be incorporated into policies, so that digital inclusion becomes a means of social justice and equitable development.

Conclusion: The digital divide in rural India is a complex sociological challenge that reflects not only technological inequalities but also deep-seated social, economic, and cultural disparities. Digital technology has opened new avenues for development, information, and access to services, but its benefits

have not reached all segments of rural society equally. Structural factors such as caste, gender, income, and education determine digital access, usage, and benefits, thereby reinforcing existing social stratification.

Sociological analysis clarifies that the digital divide is not merely a result of infrastructural deficiencies but also a modern form of social exclusion. Digital inequalities in the areas of education, e-governance, health, and livelihoods exacerbate the rural-urban divide and limit social mobility. Initiatives like BharatNet, public Wi-Fi, and Digital India have shown signs of progress, but challenges related to last-mile connectivity, digital literacy, and social inclusion persist.

This study concludes that digital inclusion must be embraced not merely as a technological solution but as a broader goal of social justice and human development. Inclusive policies, targeted interventions, content in local languages, and community-based participation can play a crucial role in bridging the digital divide. If implemented with a socially sensitive approach, digital transformation can pave the way for equitable and sustainable development in rural India, strengthening education, employment, empowerment, and democratic participation.

References:

1. Pandey, V. (2024). *Bridging the digital gap: Empowering rural India through transformative initiatives*. *ShodhKosh: Journal of Visual and Performing Arts*, 5(6), 2826–2837. <https://doi.org/10.29121/shodhkosh.v5.i6.2024.3440> [Granthaalayah Publication](#)
2. Sindakis, S., & Showkat, G. (2024). *The digital revolution in India: Bridging the gap in rural technology adoption*. *Journal of Innovation and Entrepreneurship*, 13, Article 29. Springer. [SpringerLink](#)
3. Mandal, B. (2025). *Digital divide in online education: A statewide survey of internet accessibility and usage patterns in India*. In *Digital Crossroads: Integrating Humanities, Science and Technology* (pp. 135–151). <https://doi.org/10.9734/bpi/mono/978-93-48859-10-5/CH12> [Bookpi](#)
4. Sambhaji, P. S. (2025). *Digital literacy and connectivity in rural India: Bridging the divide*. *International Journal of Advance and Applied Research*, 56(19), 597–600. <http://doi.org/10.5281/zenodo.15111179> [Zenodo](#)
5. Oxfam India. (2022). *Digital Divide: India Inequality Report 2022*. Rural India Online. (Report highlighting socio-economic and rural-urban digital disparities). [People's Archive of Rural India](#)

6. Chaudhuri, A. (2024). *Analysing the digital divide factors: Evidence of a rural-urban comparison from an Indian district*. *Journal of Scientific Research and Reports*, 30(5), 243-250. <https://doi.org/10.9734/jsrr/2024/v30i51939> [SciRes Reports](#)
7. IMAI & Nielsen. (2023). *Internet access and usage patterns in rural and urban India*. (Data cited in research on Internet penetration differences). [IJFMR](#)
8. Ministry of Electronics & Information Technology (MeitY). (2023). *BharatNet coverage and status report*. Government of India data on rural broadband. [IJFMR](#)
9. National Sample Survey Office (NSSO). (2025). *Comprehensive modular survey on telecom (CMS-T), 80th Round*. Ministry of Statistics and Programme Implementation. (Provides up-to-date household internet access data). [CEDA »](#)
10. World Economic Forum. (2022). *Bridging the rural digital divide: Insights and strategies for sustainable connectivity*. World Economic Forum Report