

Digital Revolution - A Significant Shift in Rural India: A Case Study of Mahbubnagar District

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Abstract: ***Purpose:** The study aims to investigate the impact of digital revolution on the strengthening of rural India. Digital technology rapidly increasing in the forms of inter connectivity and digital infrastructure. India became one of the largest and most dynamic digital ecosystems in the world which is influencing agriculture, education, healthcare, governance and financial inclusion. Today, villages are not isolated, they are entering into digital technology centers of entrepreneurship, innovation and inclusive development. As per recent estimation, India has around 9.58 million active internet users which intern increasing to 1.03 billion by 2026 with the continued rollout of 5G services. This growth is happening due to adoption of digital technology in the rural India. At present rural people around 548 million users are there which comes around 57 percent of total population which is expanding nearly four times faster than urban regions. Bharat Net, backbone of rural digital infrastructure, is connecting around 2.15 lakh Gram Panchayats with high-speed optical fiber networks and enabling access to telemedicine, e-governance and online education. According to Bharat Net progress report 2025 around 218,000 Gram Panchayati now extending service and with over 692, 000 kilometers of optical fiber cable which was laid across the country. This infrastructure is extending support for high-speed internet facilities. Digital technology providing sufficient delivery of welfare schemes in rural areas. For instance, Aadhar digital identity system, combination of Benefit Transfer (DBT), creating subsidies and incentives to beneficiaries' bank accounts and achieving target delivery and so on. In the year of 2023-2024, transfers occurred 6.3 lakh crore whereas the transactions reached to the level of 7.16 lakh crore in 2024-2025. Methods: Quantitative approach was used. Data collected through the question ire and analyzed. The total of 100 respondents were selected, spreading over of various villages of Mahbubnagar district of Telangana State. Results: Digital revolution are creating new opportunities for students, farmers and rural entrepreneurs in the rural regions. The continues investment in digital technology is required for strong framework. This transformation is needed not only for livelihood of rural people but also for national development.*

Keywords: Digital Revolution, Digital Technology, Bharat Net, DBT, Fiber Cable, National Development

1. Introduction

In rural India, digital technology rapidly increasing in the forms of inter connectivity and digital infrastructure. India became one of the largest and most dynamic digital ecosystems in the world which is influencing agriculture, education, healthcare, governance and financial inclusion. Today, villages are not isolated, they are entering into digital technology centers of entrepreneurship, innovation and inclusive development. As per recent estimation, India has around 9.58 million active internet users which intern increasing to 1.03 billion by 2026 with the continued rollout of 5G services. This growth is happening due to adoption of digital technology in the rural India. At present rural people around 548 million users are there which comes around 57 percent of total population which is expanding nearly four times faster than urban regions. According to Indian consumers and usage behavior survey 2025, it took samples of 87,000 individuals across 400 towns and 1000 villages survey revealing that there is a significant shift in the usage of laptops and smartphones with internet facilities which is no longer a passive participant but an active person responsible for the country's digital transformation. The central government has taken responsibility of mobile networks. Still now, 4G connectivity reached around 95 percent of the population. This digital India is taking programs

responsibility to build and digitally empower society and a knowledge-based economy.

Bharat Net, backbone of rural digital infrastructure, is connecting around 2.15 lakh Gram Panchayats with high-speed optical fiber networks and enabling access to telemedicine, e-governance and online education. According to Bharat Net progress report 2025 around 218,000 Gram Panchayati now extending service and with over 692, 000 kilometers of optical fiber cable which was laid across the country. This infrastructure is extending support for high-speed internet facilities. Digital technology providing sufficient delivery of welfare schemes in rural areas. For instance, Aadhar digital identity system, combination of Benefit Transfer (DBT), creating subsidies and incentives to beneficiaries' bank accounts and achieving target delivery and so on. The schemes like PM-Kisan covering about 11.65 crore farmers whereas MGNREGA achieved Aadhaar linkage with around 95 percent of beneficiaries connected to bank accounts. Due to this, Aadhar payment bridge system has helped to reduce the fake beneficia's to the extent of 20=30 percent during village level audit survey. In the year of 2023-2024, transfers occurred 6.3 lakh crore whereas the transactions reached to the level of 7.16 lakh crore in 2024-2025. This digital program extending services such as NSAP and chelaships to rural households. In the same way, services extended by JAM trinity-Jan Dhan accounts, Aadhar and

mobile connectivity which are indication for efficient fund transfer and transparent through these platforms. These programs are supervised by Central Plan Scheme Monitoring System. Similarly, Digi locker helps citizens to store and share documents security while UMANG providing a common interface for accessing multiple public services. In addition to this, e-Gram Swaraj helping for transparency and accountability in village administration.

The importance of artificial intelligence is going on increasing and transforming agricultural activities. Today, the farmers monitoring crops, optimum use of resource, predicting pest outbreaks and manage the activities of agriculture more effectively through AI based tools. Similarly, weather patterns, historical data, reducing reliance on chemical pesticides will be known through AI tools. In the same way, efficient use of water, fertilizer and other inputs can be known. This system helps not only reducing of cost of production but also helps for enhancing production. The other platforms such as India AI Mission and Agri stack are helping for agriculture in the rural areas. The India AI Impact Summit 2026 will show the Satellite data and crop intelligence and so on. According to government statistics, AI -enable tools are supporting over 14 crore smallholder farmers by providing real-time advisories and optimizing irrigation and fertilizers use which are *helping to reducing pesticide cost by 15-20 percent*.

2. Revive of Literature

- 1) Dr. Nimesh Kapoor (2026) 'Digital empowerment Bridging the Connectivity Gap' in which he said that due to digital revolution and emerging AI applications, the rural economy reshaped. Moreover, the digital technology helping to bring the gap between rural and urban areas.
- 2) Satish Singh (2026) 'From Connectivity to Security-safeguarding Rural India in the age of Digital Expansion' in which he says that digital transformation is happening in India through the help of internet access and smartphone use in the rural areas.
- 3) U.S. Dhyani (2026) 'Food Safety in the digital India Era-Strengthening governance through Technology' in which he said that digital technology helping monitoring, enhancing inspection and consumer participation in the case food safety situation.
- 4) Dr. Arti & Sayantani De (2025) 'AI- Enabled digital skill for rural India' in which they said that when the communities gain access to skills, they also gain bargaining power, financial stability and the ability to secure their own future.
- 5) Dr. Jagdeep Saxena (2025) 'Conservation agriculture' in which he says that CA help to endure more sustainable and efficient farming practices that help present and future generations.
- 6) Dr. Harinder Raj Goutham (2025) 'Gene editing technology - transforming agriculture' in which he said that digital technology helps farmers with better returns without any further stress on land.
- 7) Prof. S.V. S. Raju & Pankaj Kumar Ojha (2025) 'Agri Startups' in which they said that architect startups are poised to lead the charge, redefining global agriculture.
- 8) Susanne Schwabe and Monika Grabowska (2022) 'Online marketing strategies' in which they revealed that an organization cannot exist without digital marketing which became necessary for every institution.
- 9) Dr. Amit Singh Rathore, Mr. Mohit Pant, and Mr. Chetan Sharma (2021) 'Emerging trends in digital marketing in India' in which they said that use of social media has created new opportunities for digital market to attract the customers.
- 10) Niharika Satinder (2021) 'A study on internet marketing in India - Challenges and opportunity' in which they mentioned that online marketing is the best opportunities rather than traditional method which strengthens the customers to choose the shopping habits for the people to purchase world class products.
- 11) D.K. Gnaneshwar (2019) 'E- Commerce or internet marketing - A Business Review Indian context' in which he mentioned the importance of online marketing which is playing vital role in the 21st centuries which is accessible for large corporations and small companies also.
- 12) Dr. T. V. Venkateswara (2018) 'Scientific Temper' in which he said that a society cannot be built on the foundations of blind beliefs. Public life must be governed by principles derived from rational, ethical and humanistic thought.

3. Research Gap

In India, digital technology was launched in 2015. The period from 2015 to 2024 is taken for study.

Scenario of digital technology in Mahbubnagar: Mahbubnagar District is the largest district of Telangana state in terms of area covered and is also known as Palamuru. Mahbubnagar district headquarters town was named after Mir Mahbub Ali Khan, the Nizam of Hyderabad. It is bounded on the north by Ranga Reddy district of Telangana, on the east by Nagari Kurnool district of Telangana, on the south by Wanaparthy district and Jog Lamba-Gadwal district of Telangana and on the west by Raichur and Gulbarga district.

NIC of Mahbubnagar District centre playing a key role in the implementation of e-office project in all the departments of Mahbubnagar and is active in the promotion of e-Governance. The centre determination and initiatives taken in Mahbubnagar have created a conducive atmosphere for the implementation of several e-Governance projects and paved the way for the district administration to do more in this area by providing accurate, transparent and responsive information services to the district.

Challenges of Digital Revolution: - Even though central and concerned state government are taking steps for expansion and implementation of digital technology, still facing poor network access and different regional languages restrict effective utilization of digital devices. Along with, high cost of digital tools and inadequate infrastructure obstructing expansion of internet facilities to remote areas.

Digital transformation of India has been rapid and path-breaking. India occupied third largest digital economy in the globe. It has made significant strides in empowering

individual users and delivering services to large section of population in urban as well as rural areas. Government's digital India program laid the foundation for building the world's largest digital identity programs which can be seen from the following table.

Table 1: Global Ranking

Country	CHIPS Economy	CHIBE	CHIPS Combined
USA	68.5	61.4	64.5
CHN	62.5	52.0	56.1
IND	35.9	33.6	34.7
SNG	28.5	58.0	41.9
UK	26.4	48.1	36.1
SKO	25.4	53.8	39.6
FRA	24.9	41.1	32.9
GER	24.6	45.7	35.1
JAP	24.4	38.9	31.8
BRA	24.1	402	32.0

Source: ICRIER- Pros us Centre (IPCISE)

From the table-1, it is understood that USA occupied first place CHIPS 68.5, CHIBE 61.4 and CHIPS combined percentage of 64.5. which is followed by China CHIPS economy 62.5, CHIBE 52.0, CHIPS combined 56.1 percentage. India has CHIPS Economy 35.9, CHIBE 33.6, CHIPS combined percentage of 34.7. However, in the case of overall, India occupied eighth position in the global level.

Rural India has vast demographic potential, raising of economic ambition and rapid technological change intersect. Recently, notable changes are occurring in the case of infrastructure and digital connectives. Skill development, access to social security and economic empowerment, still lack behind. The present skill programs are unable to match local needs which are replaced by modern methods in which digital technology one. The Ministry of Skill development and Entrepreneurship has taken steps to create digital hub to connect rural learners. Due to this, AI used to deliver education through the regional languages. The digital technology generating meaningful employment opportunities for different section of people such as manufacturing, services and construction in the rural areas which can be seen in the following table.

Table 2: Employment Growth in key sectors Post skilling (2021-2025)

Category	Employment %
Manufacturing	15
Services	20
constructions	25

Source: Joy, 2025

From the table-2, it is understood that digital technology helps to increase employment opportunities in rural areas. Increasing of 15 percent can be seen in the case of manufacturing while 20 percent in the case of services. In the same way, construction sector providing 25 percent job opportunities.

The professional people who are having AI knowledge are increasing day by day to help the rural people which can be seen from the following table.

Table 3: AI professorial over time (Lakhs)

Years	No of professionals
2023	4,16,000
2024	6,00,000
2025	8,00,000
2026	10,00,000

Source: (Dwivedi et al, 2025)

From the table-3, it is understood that increasing AI professionals who help converting vulnerable rural population into enhancing of livelihood stability and strengthening social security. There were 4,16,000 professionals in 2023 which increased to 8,00,000 in 2025 which may go to the level of 1 million in 2026

The central government has taken a strong policy to prepare rural youth to adopt digital technology for future development. The Ministry of Skill Development and Entrepreneurship (MSDE) has taken different programs for expansion of digital technology in the rural areas which can be in the following table.

Table 4: Government initiatives and Focus areas

Name of the Initiative	Target Beneficiaries (In Lakhs)	Focus Areas
1) PMGDSA	639	Digital literacy
2) Common services centres (CSCs)	530	Digital Services & AI Training
3) AI Pragya (UP)	10	AI & Data Analysis's Training
4) India AI Mission	5.6	AI Skill for CSC workforce.

Source: MSDE,2025

From the table-4, it is understood that target employment 639 lakh was fixed under PMGDISHA for digital literacy while under CSCs, target was allocated to 530 lakhs. However, in the case of AI Pragya (UP), target was given to the extent of 10 lakh whereas 5.6 lakh target was given for Indian AI Mission.

Table 5: ABDM Ecosystems'

1) Central Government & State Government	Policy Makers
2) Program Managers & Regulators	Administrators
3) Associations & Development Parters/ NGOs	Non-Profit Organizations

Source: ADBM, 2025

From the table-5, it is understood that for the growth of ABDM Ecosystem, policy makers of central and concerned state government have to take steps. In the same way, program manager and regulators have to full-fill administration responsibilities. In addition to this, associations and development persons / NGOs have to come forward to extend their cooperation. Beyond this, corporate offices have to come forward to extend their cooperations, then only growth can be seen in ABDM Eco system.

Case Studies:

- 1) ASHA, 22-year-old, belongs to small village in West Bengal. Once she struggled for work in the village. When she joined a government -backed digital skilled program, her life changed. This course helped her to know the basics of artificial intelligence and online business skills.

Now, Asha running online handcraft store which helping a stable income and supporting her family. With the help of digital knowledge, enrolled the health and pension schemes which are helping for better future.

- 2) YAKTEN, a small village, in Sikkim, which has become the country's first village adoption of digital technology. Now, villagers using higher-speed WI-FI facilities. Today, ever home has internet facilities through which learning online education.
- 3) AKODARA, a small village in Gujarat State, became first digital village where 100 percent transactions are happening digitally. In this village, digital payments, audio visual education equipment and CCTVs in schools can be seen.
- 4) HARISAL, a small village in Amravati District of Maharashtra state, became the first smart village where state government and Microsoft company jointly provided internet facilities through White-F technology for village people.
- 5) KARNATAKA government launched e-Shamata app which is helping farmers to send their crops information directly to the retailers, so that they can sell their products at better price.

4. Research Methodology

Mahbubnagar District of Telangana State is taken for case study in which 100 respondents were selected spreading over the district. Out of 100, 35 educators, 35 small traders and 30 farmers were chosen for survey. To collect digital technology awareness among the respondents, three question papers prepared separately for each category. Data collected on the basis of '7' point Likert scale system which can be seen from the following table.

Table 6: Likert Scale System

Response	Points
Strongly disagree	1
Disagree	2
Disagree to some extent	3
Undecided	4
Agree to some extent	5
Agree	6
Strong agree	7

Source: Author technique.

This Likert Scale system is applied to gather digital market awareness from the respondents of educators, small business holders and farmers who are selected from different villages of Mahbubnagar district. The gathered information from respondents is shown from the following table.

Table 7: Growth of Digital Market and Internet Awareness

Category	Response for 100%
1) Educators	99
2) Small traders	88
3) Farmers	75

Source: Survey.

From the table-7, it is understood that out of 100 educated rural people, 99 percent of public know the awareness of digital technology and use of internet sources for different purposes. In the case of small traders, 88 percent using internet sources for enhancing their trade or business.

However, in the case of farmers, 75 percent are using internet source for their mobile phones for getting information regarding of crops disease and selling their products for better prices that are prevailing in different places.

5. Conclusion

After analysis of data, it is found that first hypothesis is not accepted which reveals that digital market and internet facilities are gradually increasing in the rural areas. Similarly, second hypothesis is not accepted which is revealing that central and state governments are taking different steps for increasing digital services through internet facilities. In the same way, third hypothesis is not accepted which is revealing that central and state governments converting traditional or conventional platforms into digital platforms for enhancing the livelihood of rural population.

Internet access expanding from urban areas to remote villages to revolutionizing public services delivery through digital platforms. Due to this, country bridging the gap between urban -rural areas. The digital technology which is contributing to the national income was confined to 11.74 percent in 2022-23 which increased to grow 13.42 percent by 2024-25 through the advancement of cloud computing, digital infrastructure and artificial intelligence.

Digital journey of India for past decade has not only transformed services and governance but also laid the groundwork for strong economic growth. To-day, industries are replacing digital technology in the place of traditional technology, showing how the technology becoming a key driver of progress. Digital technology is expected to occupy one-fifth of national income by 2047. This shows how digital advancements helping for creation of new opportunities, innovations and make India a leader in the global digital market.

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