# Impact of Digital Technology on Strong Economic Growth of India.

**Dr. G. Balarangaiah[1], Sudhakar Reddy[2]**

**[1]Professor, Department of Management Studies, Amity University, Hyderabad, Telangana State, India.**

**[2]Assistant professor, Department of Economics, GDCW (A), Mahbubnagar, Telangana state, India.**

## ABSTRACT

India has made remarkable progress in digital journey over the past decade. Internet connections increased from 25.15 crore in March 2014 to 96.96 crore June 2024, showing growth of 285.53 percent. The improved mobile infrastructure has helped to a massive surge in internet access. Today, 6,15,836 villages have 4G mobile connectivity, out of 6,44,131 villages in the country as on December 2024. A major part of their digital push has been about connect rural India. Bharat Net project, which was established in January 2025, has brought high- speed internet to over 2.18 lakh km of optical fiber cable has been laid under this scheme.

The Unified Payment Interface (UPI) digital transactions across the country. In the month of April 2025, around 1,867.7 crore transactions worth of 24.77 lakh crore were carried out using UPI in just one moth. In the same way, Aadhar- based e-KYC system, helping for simplifying process in both banking and public services. It is helping for verification faster reducing paper work and brought transparency across different sections of the society. The total 141.88 crore Aadhar cards have been issued as on April 2025 which now became a crucial part of India's digital backbone helping people access to easy services. Direct Benefits Transfer (DBT) supported Aadhar authentication, providing subsides and welfare payment to the community. This Aadhar cards helping to remove fake beneficiaries and saved money to the government more than Rs 3.48 lakh crore in between 2015 to 2023. This system helped beneficiary databases. The total of 5.87 crore ineligible rations card holders and 4.23 crore fake LPG connections are cancelled, making the welfare programs more transparent. The digital transformation contributed 11.74 percent to the national income in 2022-23 which projected to grow to 13.42 percent by 2024-25 with the advancements in artificial intelligence, cloud computing and digital infrastructure. By 2030, it is expected that digital technology may share one-fifth of national income and making India a leader in the global digital market.

**Keywords:** UPI, DBI, e-KYC, Cloud Computing, Artificial Intelligence, Digital Information.

Importance: India has made remarkable progress in digital technology which empowered society and contributing to economy. The digital technology became backbone to modern Indian economy. India significantly expanded mobile network and improved internet connectivity in the rural areas. The internet connections were 25 crores in March 2014 which increased to 94.92 crore in August 2024, increasing by 1452 percent. In the same way, 6,15,836 villages have 4G mobile connections in the country out of 6,44,131 villages as on December 2024.

To increase the digital technology, Bharat Net Project which was established in January 2025 has brought high -speed internet services which provided to 2.18 lakh Gram Panchayats and 6.92 lakh km of optical fiber cable has been laid under this scheme. The villages which were lacked basic internet services have digital tools at their doorstep. The digital technology has brought financial services closer to people who are in rural and remote areas.

The Unified Payments Interface (UPI) is an indication for digital transactions across the country. The around 1,867.7 crore transactions worth of Rs 24.77 lakh crore were carried out in April 2025. The UPI system is used by around 460 million individuals and 65 million merchants. As per the ACI World Bank Report 2025, India accounted for 49 percent of global real-time transactions in 2023 which is indication for global leader in digital payment market. Similarly, in the case of Aadhaar based e-KYC system which simplified the process in banking as well as public services. It is meant for verification faster reduced the paper work and brought

transparency across the various sectors of the economy. The total 141.88 crore Adhaar cards were issued throughout the country as on April 2025 which became backbone to the digital technology and providing access easy services to the community. Similarly, in the case of Direct Benefit Transfer (DBT), supported by Aadhaar authentication, providing subsidies and welfare payments to the public. Aadhaar cards are helping for removal of fake beneficiaries and saved money to the government to the extent of 3.48 lakh crore in between 2015 to 2023. The total cumulative amount transferred through the DBT has come to around Rs 44 lakh crore. This system also helped to clear up beneficiary of data basis such as over 5.87 crore ineligible ration card holders are removed and 4.25 crore fake LPG connections have been cancelled, helping welfare programs more targeted and transparent.

The Pradhana Mantri Gramin Digital Akshara Abhiyan (PMGDISHA) which was established by the union government in February 2017, to promote digital literacy and empowering of rural and people digital technology. The target fixed to provide digital literacy for 6 crores of individuals. In addition to this, it is decided to provide network of 5.34 lakh commercial service centers spreading over 2.52 lakh Gram Panchayats. As on March 31,2024, the enrolment came to the extent of 7.35 crore candidates in which 6.39 undergone training which is one of the largest digital literacy initiatives.

The India AI Mission which was established by union government on March 2024 to build a comprehensive and inclusive AI ecosystem which is consisting of pillars such as compute capacity, datasets platform and innovation Centers for which an amount of Rs 10,371.92 crore was sanctioned for over five years. The main purpose of mission is to advance responsible AI innovations, according to national priorities.

The Indian Semiconductor mission is the basis for digital transformation. The local chip manufacturing becomes foundation for a self -reliant, faster and more secure digital market. The central government allocated total outlay of Rs 76,000 crore to build semiconductors and to display manufacturing ecosystem in the country. The main motto of mission is to make value addition in electronic manufacturing, reducing dependence on imports and co-ordinate India's electronic industry with global supply chain. The semiconductor manufacturing projects had been approved with allocation investment of over Rs 1,55 lakh crore. The five semiconductors' units are in the advanced stages of construction. The sixth project is approved on May 14, 2025 which is going to be established near Jawar airport of Utara Pradesh state. The digital technology which was contributed to the extent of 11,.74 percent to nation income in 2022-23 but now it is expected to grow to 13.41 percent by 2024-25 with the advancement of artificial intelligence, digital infrastructure and cloud computing.

# REVIEW OF LITERATURE

1. Balendu Sharma Dadhich (2025) 'The success of digital in rural India' in which he said that digital India has transformed rural India considerable in the form of connectivity in villages, innovation, skill development and educational improvement which are empowering rural people.
2. 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.
3. 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.
4. Dr. Harinder Raj Goutham (2025) 'Gene editing technology - transforming agriculture 'in which he said that the helps digital technology helps farmers with better returns without any further stress on land.
5. Prof. S.V. S . Raju & Pankaj Kumar Ojha (2025) 'Agri Startups' in which they said that architect startups are poised to led the charge, redefining global agriculture.
6. 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.
7. Dr. Amit Sigh 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.

8. 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.

9. D.K. Gnaneshwar (2019) 'E- Commerce or internet marketing - A Business Review Indian contest' in which he mentioned the importance of online marketing which is playing vital role in the 21th centuries. It is accessible for large corporations and small companies also.

10. Vladislav Yurovsky (2018) 'Pro and Cons of internet services' in which he said that some of advantages of elbowing effect, elimination in geographical barriers and target reaching.

Research Gap: In India, digital technology was launched in 2015. The period from 2015 to 2024 is taken in to consideration in which the changes that are taking place in the field of changes in digital technology and internet connections are being studied.

Scenario of Digital Technology in India: - India emerges as the eights position among the G32 for CHIPS combined. The seven countries that United States, Singapore, South Korea, Denmark, United Kingdom and Germany which are enjoying significant of digital technology. The strong intensity can be seen in the case of Singapore, Korea and Denmark. Emerging market can be seen in Brazil, Nigeria and Indonesia. The performance of well in CHIPS can be seen in India.

Impact of Digital Technology: The digital program in India launched in July 2015 which is a flagship program that transforming the into digital empowered society and knowledge economy. India has a massive opportunity to expand further scale of digital economy.

**Objectives of digital technology:**

1. Expanding high-speed internet connectivity across the rural India.
2. Converting government platforms into digital platforms for faster and Transparent process for rural areas.
3. Promoting digital literacy to empowering rural people.
4. Ensuring the easily availability of government information and Services.
5. Hypothesis:
6. High-speed internet connectivity is not happening across the rural Areas.
7. Promoting digital literacy to rural population is not happening.
8. Converting government platforms into digital platforms are not Happening.

Challenges of Digital Revolution: - Even through 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 digital devices. Along with, high cost of digital tools and inadequate infrastructure obstructing expansion of internet felicities 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 | CHIPE | 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, CHIPE 61.4 and CHIPS combined percentage of 64.5. which is followed by China CHIPS economy 62.5, CHIPE 52.0, CHIPS combined 56.1 percentage. India has CHIPS Economy 35.9, CHIPE 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 % |
|---|---|
| 1) Manufacturing | 15 |
| 2) Services | 20 |
| 3) Instruction | 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 can be seen in the case of services. In the same way, construction sector providing 25 percent job opportunities in the rural areas.

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 women 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.

Scenario of digital technology in Telangana State: Telangana state emerging as a global hub in the case of artificial intelligence (AI) and technological innovations. It is groundbreaking in healthcare, education, agriculture, traffic management. The state is empowering of AI to transform its cities and empowering of AI to transform its cities and empowering of its citizens. In addition to this, state creating new benchmarks in the

case of impart governance and sustainable development. One of the most important milestones in AI Journey is the establishment of Google's 4th startup, first of its kind in India, state is focussing on empowering startup such as agriculture, mobility and skill development. Google is helping in the case of entrepreneurship solving the local challenges with global impact.

The state is taking its commitment to AI, a step further with the development of a 250-acre AI city with collaboration global tech leaders such as Microsoft, CDC, Yatta, and WTC. This visionary project underscore Telangana's determination to lead the world in AI innovations. Similarly, in the case of healthcare, state is collaborating with prestigious institutions such as IIT, BITS, NTR, NALSAR and ISB. This initiative will enhance diagnostic accuracy, improve patient outcome and make healthcare more accessible to community. In addition to this, agriculture also, Agriculture Data Exchange (ADEX), platform for AI based applications, enables farmers to access real time data on whether, market price, soil conditions and crop health which helps for boosting productivity. In the same way, regarding mart traffic management with AI. The city became first of its king to roll out an AI -powered Road Management solutions with collaboration Google which is helping to monitor traffic patterns, reducing congestion on the roads and optimizing of signal timings. In the case of education also, Telangana revolutionizing with the help of AI technology. The Viswam Centre, an institution, offer 1 lakh AI internship to college students, supporting with required skill needed to integrate AI educational programs. This initiative helping to nurture a generation of tech-savvy individuals who can drive innovations in the future.

**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 felicities. Today, ever home has internet felicities 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.

Research Methodology: In India, Telangana State is taken for case study in which 100 respondents were selected spreading over three districts i.e Nizamabad, Adilabad and Gadwal 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. As per the survey, data was collected and analysis made on the basis of '7'point Likert scale system which can be seen from the following table.

**Table-5** 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 Telangana state. The gathered information from respondents is shown from the following table.

**Table-6** 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-6, 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 who 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.

## CONCLUSION:

After analysis of data, it is found that first hypothesis is not accepted which reveals that digital market and internet facilitate 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 felicities. 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 2030. 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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