Transforming Rural India Through Digital Inclusion: Challenges and Future prospects

Md. Ashique Husain
Research Scholar,Deptt. of Teacher Training and Non-Formal Education (IASE), Jamia Millia Islamia
Romana Jabeen
Research Scholar, MANUU, College for Teacher Education, Darbhanga
Prof. Md. Faiz Ahmad
Principal, MANUU, Centre for Teacher Education, Darbhanga

ABSTRACT

The digital inclusion refers to access to all the learners equally from different digital technologies that gives the opportunities for Everyone, Everywhere from anywhere to learn at their own pace. The main purpose of the study was to assess the status of digital inclusion and assess the challenges hindering digital inclusion also to assess the awareness among rural learners regarding digital india campaign and BharatNet. Digital inclusion is key to India's development, but rural areas still struggle with limited internet access, digital literacy, and financial barriers. The study used a descriptive survey methodology with a sample of 85 undergraduate and 49 postgraduate students from rural Bihar, selected through purposive sampling. The data was collected through google form and the link was shared through whatsapp and email. The findings of the study showed that while rural areas are aware of the internet's benefits, challenges like poor infrastructure, high costs, and low digital literacy persist. Findings revealed that more internet towers should be established, affordable plans, and digital literacy programs should be run to improve access. The challenges related to hindering digital inclusion like; high cost, lack of skilled workers, and insufficient government support, Gender disparity also limits women's access to technology and affordability remains a key issue., with so many factors. The government initiative Digital India campaign and BharatNet is improving internet speed in rural areas through satellite and fiber technology, but high costs limit usage.

Keywords: Challenges, Digital inclusion, Opportunities, Rural india, Transformation

Received : 21/10/2025 **Acceptance : 20/11/2025**

Introduction:

India is now moving towards a digital revolution and trying their hard for digital inclusion. The Government tried to take too many new initiatives for digital inclusion. Under this, the government's Digital India initiative aims to transform the entire country into a fully digitally empowered society and knowledge economy. A rich variety of educational software will be developed and made available for students and teachers at all levels. All such software will be available in all major Indian languages and will be accessible to a wide range of users including students in remote areas and Divyang students through all these initiatives digital inclusion will be made sure. Teaching-learning e-content will continue to be developed by all States in all regional languages, as well as by the NCERT, CIET, CBSE, NIOS, and other bodies/institutions, and will be uploaded onto the DIKSHA platform this is showing government commitment towards digital inclusion. However, we cannot deny that the urban population has access to digital technology, while the rural areas are still far away from this digital revolution. This situation shows the digital divide and due to this, there is a danger of hampering educational growth and development in India, due to which digital inclusion in rural India becomes important for the progress of the country. A large population of India, which has a rural population, is facing many challenges in digital inclusion, due to which learners are deprived of various opportunities (Patel, 2024). A recent report by the Internet and Mobile Association (IAMAI) found that "the proportion of daily internet users in rural India is slightly higher than in urban India. As of

March 2024, India had 954.40 million internet subscribers, with 398.35 million in rural areas" (IAMAI, 2024). Digital divide is not only a social, Educational issue but also an economic issue. Catering to these issues, a holistic approach is needed, focusing on improving infrastructure, enhancing digital literacy, making technology more affordable, and creating relevant content tailored to rural needs. Bridging the digital divide requires both technological advancements and an understanding of the socio-economic challenges faced by rural populations (Sindakis & Showkash, 2024). Furthermore, Despite government initiatives like Digital India and BharatNet, their impact in rural areas has been inconsistent. The Populations not only have access to digital tools but are also empowered to use them effectively, thereby enhancing their socio-economic conditions. Achieving this goal is crucial to ensuring that the advantages of digital progress are accessible to all, regardless of geography. Achieving this will ensure the equitable distribution of the benefits of digital transformation across the country (NDCP, 2018).

Background and the context of study:

Digital inclusion has become a very important aspect of India's development. While access to technology can enhance and improve the quality of life, the IAMA , March-2024 report indicates that the Internet is being used slightly more in rural areas than in urban areas. However, digital inclusion remains a fundamental challenge due to barriers such as lack of connectivity, digital literacy, financial constraints, and inadequate infrastructure. These factors hinder the ability of rural communities to benefit from digital services, including education, e-commerce, and healthcare. The benefits of online/digital education cannot be leveraged unless the digital divide is eliminated through concerted efforts, such as the Digital India campaign and the availability of affordable computing devices. It is important that the use of technology for online and digital education adequately addresses concerns of equity (NEP-2020, pp-58, para-24.2). The Government of India has launched several initiatives aimed at bridging the digital divide by bringing internet access to rural areas and promoting digital literacy. The aim of this study is to identify the challenges faced in adopting digital technology and assess the possibilities for achieving digital inclusion in the future. By examining the current state of digital inclusion in rural India, this research will provide insights into the barriers faced by these communities, which will inform strategies to increase digital access and facilitate grassroots adoption of digital inclusion. Its findings will contribute to understanding the role of technology in empowering rural populations and promoting sustainable development. Fact that there is a substantial section of the population whose digital access is highly limited (NEP-2020, pp-59).

Review of the related literature:

Across different institutions and regions, students are generally aware of digital inclusion particularly academic purposes. Number of studies have been conducted on the same from diverse populations over a period of time. A systematic review of a few of these studies is made hereinafter:

Sindakis & Showkat (2024) have conducted a study on the title "digital revolution in India bridging the gap in rural technology adaptation". The main purpose of the study was to investigate the factors that influence the adaptation of digital technology in a rural area of India with special reference to digital India program (DIP) by analysing the age distribution, education levels ,technology adaptation rates, rural populations etc. The finding revealed that it emphasizes the need to prioritize mobile technology and improve connectivity in rural areas to ensure wider access to digital platforms. Telecom regulatory authorities of India (TRAI, 2023) has released a consultation paper on the title "Digital inclusion in the era of emerging Technologies". The paper has analysed various gap in digital inclusion such as; the mobile internet uses gap, rural/urban internet penetration, disabilities, gender gaps in internet access etc. that TRAI has also identified various challenges faced by micro small and medium enterprises MSME sector in the country from the adaptation of new and emerging digital economy through new emerging technology solutions .Mishra & Ghumre (2023), has conducted a study titled "Digital inclusion of Rural India". The main purpose of the study was to identify the challenges that rural India is facing whenever they implement digital india. The study has highlighted the challenges that

rural India is facing such as; Poor internet connectivity, financial crisis, Lack of infrastructure, socio-economic constraints, and the lack of awareness should not be neglected Bruntha & Subaithani had undertaken a study on " A conceptual study on how digital inclusion is Reshaping rural India". The main purpose of the study was to investigate the transformative impact of digital inclusive services in rural regions of India and to analyse how technology is changing things and helping to close the gaps.

The findings of the study revealed that digital inclusion initiatives are empowering communities, fostering economic growth, and paving the way for a more equitable future in rural India. Patel (2024) has conducted a study titled "Perspective of Digital Transformation in Rural India". The study had highlighted the challenges being faced by rural india like; limited access to financial services, digital divide furthermore he had mentioned that the lack of digital inclusion in rural india in social and economic challenges. The study also recommended that the government, private sector, and the civil society must collaborate with each other to bridge the digital divide and make rural India more inclusive and accessible. (Shruti & sachin (2021), has conducted a study titled "a survey on rural internet connectivity in india" the aim of this survey was to study rural connectivity use-cases, state of art projects and initiatives, challenges, and technologies to improve digital connectivity in rural parts of India .the findings analyzed strengths and weakness of different technologies that are tasted for rural connectivity. (Prabhu (2024) has carried out a study titled "Digital Transformation in Rural India: Pathways and Challenges" the study was focused on the diverse impact of digital transformation of rural india also highlights key barriers, including limited digital literacy, infrastructural constraints, and affordability issues which impact the successful implementation of digital programs in rural india. This also discusses recommendations of various policies to overcome so many obstacles like role 5G, Artificial intelligence to shape a digital inclusion for rural India by addressing these challenges and digital transformation can play a very crucial role for Self-reliant rural settlements throughout India.

Summary of the review:

The study which has been cited above showed the need to prioritize mobile technology and improve connectivity in rural areas to ensure wider access to digital platforms (Sindakis & Showkat ,2024; Shruti & sachin 2021). Various gaps in digital inclusion such as internet penetration, disabilities, gender gaps in internet access etc (TRAI, 2023). The review highlights difficulties with digitalization with many different reasons like large amounts of capital, unawareness of technology, lack of awareness, literacy and high cost of digital equipment (Mishra & Ghumre, 2023). This review study revealed the gap of digital inclusion initiatives and empowering communities, fostering economic growth, and paving the way for a more equitable future in rural India (Bruntha & Subaithani, 2024). The review focused on challenges being faced by rural India and also recommended collaboration in every sector like government, private and the civil society to bridge the digital divide to make rural India more inclusive and accessible (patel, 2024). This review examines the impact of government initiatives like Digital India and BharatNet in reducing the digital divide in rural India. Despite significant progress, rural broadband coverage remains low at 29.3%, compared to 93% in urban areas (TRAI). A key issue is the lack of awareness, with 70% of institutions unaware of BharatNet. The dimension of the objectives were identified through review and available literature which has been framed under objectives of the study.

Objectives of the study:

1. To Examine the current status of digital inclusion in rural India in terms of-

   I. Assess the penetration II. Internet connectivity III.Mobile networks IV. Digital literacy programme.
2. To Identify the Key Challenges Hindering Digital Inclusion in terms of- I. Infrastructure, II. Affordability, III. Digital literacy,

   IV. Gender disparity
3. To analyze the government Initiatives in rural India in terms of- I. Digital India campaign, II. BharatNet.

Research Methodology:

Research Design: The research was conducted

using the Descriptive survey method and the study adopted a mixed method approach for the purpose.

Population: The population of the study constituted undergraduate and postgraduate students of rural areas of Bihar .

Sample: The Sample of the study constituted the 85 undergraduate and 49 postgraduate students of rural bihar.

Tools of the study: A self-prepared (Mixed questionnaire) tool was used for data collection. In order to examine the Current Status of Digital Inclusion in rural India in terms of-1. Assess the penetration, 2. Internet connectivity, 3. Mobile networks, 4. Digital literacy programs in rural areas. To Identify the Key Challenges Hindering Digital Inclusion in terms of- 1. lack of infrastructure, 2. Affordability, 3. Digital literacy, 4. Gender disparity that limits digital access in rural India. In the same way to analyze the government Initiatives in rural india in terms of 1. Digital India campaign,2. BharatNet. Thus, the questionnaire contains 33 items in all, of which 02 are open ended and 31 are close ended.

Dimension-wise distribution of Types of Items

S.no.	Dimensions	Range	Open-ended	Close- ended	Total no. of Items
Section A. Current Status of Digital Inclusion in Rural India					
1	Assess the penetration	1-4	0	4	4
2	Internet connectivity	5-8	0	4	4
3	Mobile networks	9-11	1	2	3
4	Digital literacy programme	12-14	0	3	3
Total Item in Section A		**14**	**1**	**13**	**14**
Section B. Key Challenges Hindering Digital Inclusion					
1	Infrastructure	15-17	0	3	3
2	Affordability	18-20	0	3	3
3	Digital literacy	21-24	0	4	4
4	Gender disparity	25-27	1	2	3
Total Item in Section B		**13**	**1**	**12**	**13**
Section C. The government Initiatives in rural India					
1	BharatNet	28-30	0	3	3
2	Digital India Campaign	31-33	0	3	3
Total Item in Section C		**6**	**0**	**6**	**6**
Total items in Tool		**33**	**2**	**31**	**33**

Results, Findings and Discussion

The item-wise analysis of responses under each dimension of Current Status of Digital Inclusion in rural India and Key Challenges Hindering Digital Inclusion, government Initiatives in rural india, major recommendations for making rural India more digital inclusive have been presented and discussed in the following sections A, B and C respectively.

Table 1

Demographic information of the respondents

Sl. No	Gender	Number	Percentage
1	Male	85	63.43
2	Female	49	36.57
Total	**100**	**100%**	

Showing gender wise respondents and their percentage

Table-2

Education level of the respondents

Sl.no	Level	Number	Percentage
1	Undergraduate	85	63.43
2	Postgraduate	49	36.57
	Total	**134**	**100%**

Table 2: Showing the level of education among the respondents

Section A: Current Status of Digital Inclusion in Rural India

Objective 1:

To Examine the Current Status of Digital Inclusion in Rural India in terms of-

1. Assess the penetration

2. Internet connectivity
3. Mobile networks
4. Digital literacy programme

Dimension-1: Assess the penetration:

In reply to the items no 1-4, in response to the item no-1 regarding the awareness about internet, 60% among the respondents were fully aware about different ways of using the internet, whereas 40% of the respondents were aware about the different ways of using the internet that shows the popularity and application of internet in rural areas. In reply to item no-2, 100% among the respondents are able to use the internet. In reply to the item no-3 regarding the challenges faced by them while using internet, 26.7% among the respondents responses as inadequate infrastructure, 20% among the respondents responses as lack of awareness about internet, 26.7% among the respondent responses as affordability issue, 20% among the respondents responses as that they are facing poor electric supply and 6.7% among the respondents responses as geographical barriers that means it shows that the population of rural areas are currently facing many challenges. In reply to the item no-4 (multiple options were allowed) regarding advantages of using the internet in rural areas, 43.8% respondents responded that it enhances digital literacy, 18.8% responses as it enhances collaboration, 43.8% responses as it provides access to wider information from anywhere and anytime. 56.3% responded as it improves education through online learning platforms, no doubt the internet is providing support to the learners of rural areas. I also agreed with all the advantages of using the internet presented here.

Dimension 2: Internet connectivity: In reply to the items no 5-8, in response to the item no- 5 regarding the internet connectivity issue, 54.5% among the respondents responses as we are facing internet connectivity issue due to limited cell tower whereas 45.5% of the respondents responses as they are living far away from cell tower that shows the need to install more cell tower in a rural areas. In reply to item no-6 regarding the suggestions to improve internet connection in rural areas, 31.8% among the respondents suggested setting up more internet towers in rural areas while 27.3% of the respondents suggested improving internet connection in remote areas, whereas 22.7 % among the respondents suggested to enhance the speed of internet connection in rural areas. 13.6% of the respondents suggested to offer affordable internet plans for people. 4.5% of the respondents suggested offering free internet access in public areas. In reply to the item no-7 regarding suggestions to ensure everyone has internet access, 47.8% of the respondents have suggested to leverage technologies like satellite, 26.1% of the respondents suggested to establish community-based networks while 14.4% of the respondents suggested that train people to use mobile hotspot & wifi, whereas 8.7% of the respondents suggested to Fixed wireless internet.

Dimension 3: Mobile networks: In reply to items no 9-11, in response to item no- 9 regarding the purpose of cell towers in mobile networks, 91.3% among the respondents responded that helping phones easily connect to the internet and make calls. Whereas 8.7% of the respondents responded that block signals from big cities were the purpose for the same. In reply to item no-10 regarding how a mobile network helps people connect to the internet (multiple answers were allowed) 21.7% of the respondents responded as newer mobile network technologies can provide faster speeds while 34.8% responded as through mobile network wider coverage data in rural areas while 21.7% responded as satellite phones most effective way by mobile network coverage and 30.4% of the responded as affordable and easy to access for rural areas people. In reply to the item no-11(open-ended) regarding the actions that can be taken to improve mobile network protection, the conclusion of the response recorded was to make mobile networks safer in rural areas, Government can fix and upgrade towers, use stronger security for data, and teach people how to protect their phones. Strong passwords/biometric, firewall configuration, Intrusion detection systems, access control may be used. Enable two-factor authentication, Limit app permissions, Be cautious of suspicious links and Use mobile security apps to protect mobile networks.

Dimension 4: Digital literacy programme: In reply to item no 12-14, in response to the item no 12 (Multiple answers were allowed), regarding

the awareness of digital literacy programme, 52% of the respondents were aware about "Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)" whereas 56% of the respondents were about "National Digital Literacy Mission (NDLM)" while only 12% of the respondents were aware about "NIELIT's CCC and BCC Courses(India)" and only 20% of the respondents were about Google Digital Garage that shows the needs to popularize these digital literacy mission government may take action in this regards. In reply to the item no-15, regarding effectiveness of digital literacy mission, 56% responded as literacy programme was helpful for them whereas 28% responded were not able to evaluate the effectiveness of digital literacy mission whereas 16% responded as NO, that means digital literacy programme was not helpful for them. In reply to the item no-17 (Multiple answer were allowed), Why are digital literacy programs essential for them, 36% responded because literacy program provide access to information while 32% of the responded because It improves their livelihoods, whereas 32% responded because it enhancing awareness about digital participation and 20% responded because it bridges the digital divide. It shows the importance of digital literacy programs that need more attention from the government and policy makers.

Section B: Key Challenges hindering digital inclusion

Objective 2: To Identify the Key Challenges Hindering Digital Inclusion in terms of- 1. Infrastructure, 2. Affordability, 3. Digital literacy, 4. Gender disparity

Infrastructure: In reply to item no 15-17, in response to item no 15 regarding familiarization of digital infrastructure 73.3% among the respondents they are very much familiar with digital infrastructure whereas 26.7% respondents somehow familiar with digital infrastructure it means approximately 100% respondents were familiar with digital infrastructure that shows the level of awareness. In reply to the item no 6, regarding the major challenge in developing digital infrastructure in rural areas, 16.7% of the respondents responded as due high costs due to low population density in rural areas while 20% of the respondents responded as lack of reliable energy sources to support digital infrastructure whereas 13.3% of the respondents responded slow regulatory approval and red tape, 20% of the respondents responded as shortage of skilled workers to install and maintain infrastructure and 30% of the respondents responded as insufficient government support and funding for infrastructure projects that shows the need to give attention from government and policy maker. In reply to item no - 7, regarding the steps that can be taken to overcome the challenges of digital infrastructure, 20% of the respondents responded as to make the internet faster in rural areas, while 30% responded as to train people how to use the internet, 13.3% responded as to build more phone towers in rural areas whereas 36.7% responded that government should help with internet services, that shows the step that can be taken into consideration.

Affordability: In reply to item no 18-20. In reply to item no 18 regarding that technology makes the internet digitally affordable, 30% responded it would be Internet access, 13.3% responded Digital services should be readily available, 33.3% responded that low cost data plan should be available, 23.3% of the respondents responded as to make financially accessible for the people`living in rural communities. In reply to the item no-19 regarding the affordability of current data plan, only 22.6% of the respondents responded as "Yes" while 54.8% responded as "NO" and 22.6% of the respondents responded as "can't say" that means approximately 75% respondents said the current data plan is not affordable for them that needs government attention on a particular context. In reply to item no-20, regarding the cost of internet access, 77.4% among the respondents as it is too costly, while only 12.9% responded as No that means it is not costly for them and 12.9% respondents were not able to evaluate the same.

Digital literacy: In reply to the item no 21-24, in response to item no-21, regarding the awareness among learners towards smart uses of internet, only 35.5% learners were aware about the smart uses of internet while 22.6% learner were not aware about the same, whereas 41.9% respondents were not able to evaluate themself whether they are aware about smart uses of internet

or not. It shows the necessity of training for smart uses of the internet among rural learners. In reply to item no 22 regarding attitude towards Online platforms in rural areas whether it enhances educational, economical and personal growth, 48.8% of the respondents strongly agreed with the statement and 12.9% respondents were agreed with the statement while 25.8% respondents were neutral over the statement and only 12.9% respondents were disagreed with the statement. It means definitely online platforms in rural areas enhance educational, economical and personal growth of them. In reply to item no 23 regarding the challenges faced by them while they are trying to use digital tools, 48.4% of the responded said that they have lack of skill to visit different kind of sites and 22.6% respondents responded as they have lack of awareness about different tools, whereas 9.7% responded that they are facing challenges because of lack of resources, while 19.4% respondents said that data expenses and connectivity issue while trying to use different digital tools, it needs attention fix all these issues so that they may able to use different digital tools and enhance there economica, educational and personal growth. In reply to item no 24, regarding the fruitfulness of the "Digital literacy mission", 61.3% respondents agreed with the statement and 16.1% strongly agreed with the statement. That means approximately 74% of respondents agreed with the statements that the digital literacy mission was fruitful for them. 19.4% respondents were neutral over the statement whereas 16.1% respondents strongly disagreed with the statement.

Gender disparity: In reply to item no 25-27, in response to item no 25 (Open-ended) regarding whether digital access in rural areas is affected by gender disparity?

Summarization of responses showed that digital access in rural areas is affected by gender disparity. Women may have less access to technology and the internet due to cultural belief, lack of education, or financial problems. This limits their opportunities for education, social connections and jobs compared to men. Traditional norms in rural areas often limit women's freedom to access technology or prioritize their domestic roles over personal or professional development. Safety concerns are also one of the issues, families may restrict women's online activities due to fears of harassment or exposure to harmful content. In reply to item no 26 (multiple answers were allowed) regarding the challenges women face in accessing online platforms, 22.6% responded as women have not same chance to learn, while 32.3% responded as women feel harder to learn digital skill, 32.3% of the responded that they are less educated and 22.6% responded as gender biases in technology design while 51.6% respondents responded as online safety concern that shows the biggest issue for digital inclusion. In reply to item no 27(multiple answers were allowed) regarding the key challenges faced with gender disparity with digital inclusion, 29% of the respondents that the lack of female role model in STEM fields 41.9% of the respondents responded as fear of online harassment is also a challenges, whereas 64.5% responded as lack of awareness about the importance of digital skill is also one of the challenges and 29% of the respondents responded as lack of digital literacy is also one of the challenges.

Section C. The government Initiatives in rural India

3. To analyze the government Initiatives in rural India in terms of- 1. BharatNet, 2. Digital India campaign.

BharatNet: In reply to item no 28-30 regarding BharatNet, in response to the item no 28 (multiple answers were allowed) regarding how can BharatNet improve internet speed in rural areas, 38.7% of the respondents responded as using satellite technology, while 71% responded as connecting more villages with fiber cables, whereas 16.1% responded as by limiting internet usage and only 3.2% responded as by increasing data prices, through all these strategies BharatNet improve internet speed in rural areas. In reply to the item no 29 (multiple answers were allowed) regarding the key benefits of BharatNet in rural areas, 22.6% of the respondents responded as offering free smartphones, 41.9% of the respondents as delivering cheaper internet plans, whereas 51.6% responded as providing faster and more reliable internet whereas 19.4% responded as reducing phone call charges are the main benefits of BharatNet. In reply to item no 30, regarding the major challenges seen in rural areas while adapting BharatNet, 48.4% of the respondents as Poor

infrastructure, while 16.1 responded as low digital literacy, whereas 54.8% responded as Slow implementation process, whereas 45.2% of the respondents responded as issues with network quality and reliability are the major challenges.

Digital India campaign: In reply to item no 31-33 regarding digital India campaign, in reply to item 31 regarding the role playing digital India campaign in promoting digital inclusion, 61.3% of the respondents agreed with the statement and 19.4% of the respondents were strongly agreed with the statement it means approximately 80% of respondents were positive about the role of digital india campaign that its paying. 12.9% were neutral over the statement while only 3.2% respondents strongly disagreed with the statement and 3.2% disagreed with the statement which is negligible. In response to item no 32 regarding the Digital India Campaign facilitating rural areas to access online government services, 54.8% of the respondents were strongly agreed with the statement and 12.9% were agreed with the statement it means more than 60% were agreed that digital india campaign facilitating rural areas to access online government services, whereas 22.6% were neutral over the statements, whereas 6.5% strongly disagreed with the statement and 3.2 were disagreed with the statement.

Major findings of the study

1. To Examine the Current Status of Digital Inclusion in Rural India in terms of- I. Assess the penetration, II Internet connectivity, III . Mobile networks IV. Digital literacy programme

1.Assess the penetration: Findings of the study showed that rural areas are mostly people who are familiar with the internet and digital tools but facing challenges like; poor infrastructure, low awareness, high costs, and unstable electricity. Despite these obstacles, they see online learning as a great way to enhance education, build digital skills, and promote personal growth.

II. Internet connectivity: Findings of the study that respondents strongly suggested that rural areas struggle with the internet due to few cell towers and distance. They suggest setting up affordable towers and new technology to improve access. training rural communities can help promote digital inclusion and better internet access.

III. Mobile networks: Findings of the study showed that participants' maximum number of rural people mobile phones should help more rural people easily access the internet, with better satellite coverage and faster speeds. They emphasize the need for stronger security, including training the people how to protect their phones with passwords and security apps.

IV. Digital literacy programme: Findings of the study showed that the people know about digital initiatives like PMGDISHA, NDLM, and NIELIT, but they aren't aware of programs like literacy mission or Google Digital Garage. Many of them agreed that digital literacy programs help to improve skills and access information. The government and policymakers need to take steps to ensure everyone in rural areas can participate and explore new initiatives without any barriers.

2. To Identify the Key Challenges Hindering Digital Inclusion in terms of-

1. Infrastructure, 2. Affordability, 3. Digital literacy, 4. Gender disparity

I. Infrastructure: Findings of the study showed that respondents suggested rural people are aware of digital infrastructure but face challenges in rural areas, such as high costs, low population density, lack of energy sources, slow regulatory approval, and insufficient government support. There's also a need to improve internet speed and train people to use it effectively.

II. Affordability: Findings of the study showed that participants recommandent that Rural people believe technology can make the internet more affordable. Some suggested that if data plans are cheaper, they could access digital services. The government needs to focus on improving internet access in rural areas.

III. Digital literacy: Findings of the study showed many rural learners aren't fully aware of how to use the internet effectively, highlighting the need for training in digital literacy. While they have a positive attitude toward online platforms, they face challenges like limited resources and difficulty navigating digital tools. It's crucial to focus on improving digital skills to ensure all learners benefit from online education and growth.

IV. Gender disparity: Findings of the study

showed participants suggest Women face limited access to technology due to factors like lack of education, financial constraints, and safety concerns, with families often restricting their online activities. The absence of female role models in STEM and low digital literacy further hinder their opportunities. Raising awareness about the importance of digital skills is key to overcoming these barriers.

3. To analyze the government Initiatives in rural India in terms of Digital India campaign, Bharat Net.

I. BharatNet: Findings of the study showed respondents suggest BharatNet is improving internet speed with satellite technology and fiber cables in rural areas, but high costs still limit usage. Offering free smartphones and cheaper internet plans could help. Challenges include poor infrastructure, low digital literacy, and slow implementation.

II. Digital India campaign: Findings of the study showed that most people support the Digital India campaign for promoting digital inclusion, especially in rural areas with better access to online government services. However, some feel it needs more implementation to be truly effective. Improvements are still needed for full success.

Conclusion:

Digital inclusion is key to India's development, but rural areas still struggle with limited internet access, digital literacy, and financial barriers. The study used a descriptive survey methodology with a sample of 85 undergraduate and 49 postgraduate students from rural Bihar, selected through purposive sampling. The study looks at the barriers and explores ways to boost digital inclusion in rural India. The purpose of the study was to examine the current status of digital inclusion in rural India. The findings of the study showed that while rural areas are aware of the internet's benefits, challenges like poor infrastructure, high costs, and low digital literacy persist. Findings revealed that more internet towers should be established, affordable plans, and digital literacy programs should be run to improve access. The challenges related to hindering digital inclusion challenges like high cost, lack of skilled workers, and insufficient government support, Gender disparity also limits women's access to technology and affordability remains a key issue., with so many factors.The government initiative Digital India campaign and Bharat Net is improving internet speed in rural areas through satellite and fiber technology, but high costs limit usage. Support for the Digital India campaign is strong, particularly for better access to online government services.

References:

1. Bruntha, P., & Subaithani, S. (2024). A conceptual study on how digital inclusion is reshaping rural India. In "Building a Cognitive EnterpriseThrough AI- Powered transformation: A Digital Paradigm for Societal and Tribunal Success in Rural Areas."
2. Mishra, S., & Ghumre, N. (2023). Digital inclusion of rural india. EPRA International Journal of Multidisciplinary Research (IJMR), 9(12), 337-340.
3. NCERT. (2016). National Educational Policy-2020. National Council of Educational Research and Training, New Delhi. Retrieved January 14, 2025
4. Patel,S.(2024a).Perspective of digital transformation in rural India. International Journal of Science and Research (IJSR), 13(4), 387-390.
5. Patel,S.(2024b).Perspective of digital transformation in rural India. International Journal of Science and Research (IJSR), 13 (4), 387-390.
6. Prabhu, K. (2024). Digital Transformation in Rural India: Pathways and Challenges. International Journal of Research Publication and Reviews, 5(11), 7186-7189.
7. Shruthi, K. A., & Chaudhari, S. (in press). A survey on rural internet connectivity in India. Signal Processing and Communication Research Centre (SPCRC), International Institute of Information Technology, Hyderabad. A_Survey_on_ Rural_ Internet_ Connectivity_ in_India
8. Sindakis, S., & Showkat, G. (2024). The digital revolution in India: bridging the gap in rural technology adoption. Journal of Innovation and Entrepreneurship, 13(1).
9. TRAI. (2023, September 14). Digital Inclusion in the Era of Emerging Technologies". Retrieved January 28, 2025,