



RESEARCH ARTICLE

LEVERAGING MOBILE TECHNOLOGY AND DIGITAL PLATFORMS FOR THE ECONOMIC EMPOWERMENT OF RURAL WOMEN IN GUJARAT: OPPORTUNITIES, CHALLENGES, AND BEST PRACTICES

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ARTICLE INFO

Article History:

Received 27th March, 2026

Received in revised form

24th April, 2026

Accepted 25th May, 2026

Published online 30th June, 2026

Keywords:

Mobile Technology, Digital Platforms, Economic Empowerment, Rural Women, Gujarat, Digital Literacy, Gender Equality.

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ABSTRACT

This research paper examines the role of mobile technology and digital platforms in promoting economic empowerment among rural women in Gujarat, India. Although digital inclusion has improved in recent years, significant disparities persist in terms of gender and region. It explores how mobile technology enhances access to financial services, market information, skill development, and entrepreneurship, enabling rural women to improve their economic circumstances. Simultaneously, it highlights vital obstacles to women's access to and effective use of technology, including insufficient digital literacy, affordability concerns, inadequate infrastructure, and cultural norms that hinder their use. Through a comprehensive review of literature, government programs/policies, and successful case studies from Gujarat and other regions, the paper presents best practices adopted by governmental agencies, non-governmental organizations, and social enterprises. The paper offers valuable insights into achieving gender equality and fostering sustainable rural development through the meaningful participation of women in the digital economy.

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Citation: Nitish Kumar, Ashok Kumar Singh, Mandhata Singh and Naveen Kumar Shukla. 2026. "Leveraging Mobile Technology and Digital Platforms for the Economic Empowerment of Rural Women in Gujarat: Opportunities, Challenges, and Best Practices". *International Journal of Current Research*, 18, (06), 37614-37622.

INTRODUCTION

"You can tell the condition of a nation by looking at the status of its women."

Jawaharlal Nehru

The empowerment of women is an important topic, not only in India but worldwide. According to the United Nations, "It is the process of enabling women to take control of their lives, assert their rights, and reach their full potential as equal members of society." In India, this issue is especially relevant due to the deep-rooted history of patriarchy and gender discrimination. Although our Constitution grants equal rights to both men and women, traditional beliefs and cultural practices often hinder the full realisation of these rights. Empowering women is crucial for the development of any nation. Historically, Indian women had limited rights and opportunities due to rigid social norms and customs. Over the years, the Indian government has introduced various laws and policies aimed at reducing gender inequality and promoting women's empowerment. The status of women has also improved significantly with higher literacy rates, increased involvement of women in the workforce, and a rise in the number of women participating in politics and leadership roles after numerous initiatives aimed at uplifting

women. Various government programs such as Beti Bachao Beti Padhao (Save the Girl Child, Educate the Girl Child), Mahila E-Haat (an Online platform for women entrepreneurs), and Pradhan Mantri Matru Vandana Yojana (Financial support for pregnant and lactating mothers) reflect these efforts. Despite these positive developments, many challenges remain to be addressed, like gender-based violence, limited access to education and healthcare, and social attitudes that reinforce male dominance. Furthermore, the implementation and monitoring of several programs and policies are often weak, which hinders the effectiveness of these programs. India must prioritize education, skill development, economic opportunities such as microfinance and entrepreneurship, and measures to raise awareness and challenge entrenched beliefs to empower women genuinely. Ultimately, Empowerment means enabling women to make informed decisions and take charge of their own lives.

Conceptual Framework: There are various definitions of empowerment, but when discussing it specifically about women, it means involving them in the decision-making process from which they have often been excluded. According to the World Bank, "Empowerment is the process of increasing the capacity of individuals or groups to make choices and to

transform those choices into desired actions and outcomes.” (World Bank, 2002)

Fatemi Iman et al. (2011) proposed five key criteria for evaluating **women’s Empowerment**:

- **Welfare Criteria:** Men and women, as human resources for development, should enjoy desirable welfare conditions and equality.
- **Access Criteria:** Men and women would have equal access to sources and facilities. The Concept of enabling at this stage is that women have equal rights to access resources within the family and in society.
- **Concretisation Criteria:** Women should know that their problems are not due to their inefficiency and shortage, but rather have emerged from a social system in which discrimination has become a formal and accepted issue.
- **Participation Criteria:** The equal engagement of men and women in family and societal decision-making is one of the most significant factors considered by this criterion.
- **Control Criteria:** This criterion emphasizes that both men and women, when accessing development sources, must have adequate control over these sources, ensuring a balanced distribution between men and women so that neither exceeds the other.

All the above criteria provide a comprehensive framework for understanding and measuring empowerment through structural equity and gender justice.

According to Kabeer (1999), Empowerment is "the processes by which those who have been denied the ability to make choices acquire such an ability." (Kabeer, 1999, p. 436). According to Kabeer (1999, p. 441), the ability to exercise choice incorporates three interconnected dimensions: resources (preconditions), agency (process), and achievements (outcomes). **Resources** encompass not only material resources (such as income, land, and assets) but also human (e.g., education, skills) and social resources (e.g., networks, relationships). **Agency** refers to the capacity to define one's own goals and act upon them, encompassing decision-making processes and less measurable manifestations, such as "the power within." **Achievements:** These are the outcomes, or the "being and doing," that people can achieve because of their expanded resources and agency. Thus, economic empowerment involves accomplishments, autonomy, and access to resources. Through promoting social connectivity, financial inclusion, and entrepreneurial activity, mobile phones serve as agents of agency in the digital age. For India to achieve inclusive growth and sustainable development, the economic empowerment of rural women is essential. Women now have access to education, financial services, markets, and business opportunities like never before, thanks to the advancement of mobile technology and digital platforms. The Organization for Economic Co-operation and Development (OECD) defines economic Empowerment as "the capacity of women to participate in, contribute to, and benefit from growth processes in a way that recognizes the value of their contributions, respects their dignity, and makes it possible to negotiate a fairer distribution of the benefits of growth". It also elaborates on the positive impact that economic empowerment has on the opportunities and economic resources easily accessible to women, such as employment opportunities, financial services, skill enhancement, market information, and other productive assets

(OECD, 2015). While income and asset accumulation are often used to quantify economic empowerment, a more comprehensive understanding is necessitated through engagement with Amartya Sen's (1999) concept of "Development as Freedom." According to Sen (1999, p. 85), "freedom is both the primary end and the principal means of development." This perspective emphasizes that access to technology should be viewed not only as a tool but also as a fundamental right that enhances agency and opportunity. Sen fundamentally redefines development not merely as an increase in Gross National Product or industrialization, but as a "process of expanding the real freedom that people enjoy" (Sen, 1999, p. 3). This perspective is crucial for this study as it frames economic empowerment as a holistic process that enhances individuals' capabilities—their actual abilities to achieve valuable "functioning" or "beings and doings" they have reason to value, such as being well-nourished, educated, or participating in community life. Sen justifies that development necessitates the removal of "unfreedoms" – deprivations that limit individuals' choices and opportunities. In the context of women in rural Gujarat, these unfreedoms are obvious as limited access to markets, information, financial services, education, and social networks, all of which hinder their economic agency (a person's ability to act independently in the economic domain).

Mobile technology and digital platforms are powerful tools to address these unfreedoms by enhancing instrumental freedoms.

Sen identifies five interconnected instrumental freedoms that are crucial for overall human development and liberty:

1. Political Liberties: Although seemingly indirect, access to mobile phones can foster political liberties by providing avenues for information dissemination, collective action, and expression, enabling rural women to become more informed citizens and potentially participate in local governance or advocacy

Economic Facilities: This is the most direct link. Mobile technology provides rural women with unprecedented economic opportunities by offering access to market information (e.g., crop prices, demand), digital payment systems (for sales and remittances), and e-commerce platforms, thereby expanding their prospects for production, consumption, and exchange. Digital technology directly addresses barriers such as geographical isolation and limited market access.

Social Opportunities: Digital platforms play a significant role in enhancing social opportunities by facilitating access to online education, health information, and skill development programs tailored for agricultural or entrepreneurial activities. These digital avenues build human capital, enabling women to convert economic resources into better lives for themselves and their families.

Guarantees of Transparency: Mobile platforms can enhance transparency in economic transactions and value chains by reducing exploitation by intermediaries and ensuring fairer prices and secure transactions for rural women involved in agriculture or small businesses, thereby fostering trust and reducing the likelihood of corruption.

Protective Security: During times of economic hardship or unforeseen crises (e.g., crop failure, health emergencies), digital platforms can facilitate access to financial safety nets, emergency information, or even early warning systems related

to weather or market shifts. Timely SMS payments, facilitated by digital platforms, contribute to this protective security by ensuring a predictable income flow and reducing financial precarity. Through Sen's lens, economic empowerment moves beyond simply measuring an increase in income. Instead, it seeks to examine how mobile technology and digital platforms foster the actual capability of rural women to make choices, exercise control over their economic decisions, and ultimately lead lives they have reason to value, thereby contributing to a broader and more substantive form of development.

Research Questions

This study aims to investigate the role of mobile technology and digital platforms in enhancing the economic empowerment of rural women in Gujarat. The following key questions guide the research:

- How are mobile technologies enhancing rural women's access to economic opportunities?
- What challenges do rural women face in accessing and using digital platforms?
- What best practices and models can be adapted in Gujarat to promote digital empowerment?

RESEARCH METHODOLOGY

This study is qualitative and exploratory, drawing on secondary data collected through a review of existing literature, policy reports, and documented case studies. Data sources include government programs, international organizations, research journals, and reports from NGOs working in Gujarat and other Indian states.

REVIEW OF LITERATURE

In 2018, NITI Aayog launched "The Strategy for New India @75," which highlighted the critical role of financial inclusion and digital connectivity in achieving inclusive economic growth, significantly for women residing in rural areas. The report highlighted the BharatNet initiative, which aims to digitally connect all 2.5 lakh gram panchayats and provide last-mile connectivity to individual villages, thereby laying the foundation for universal digital access (NITI Aayog, 2018). This fundamental infrastructure is essential for enabling rural women in Gujarat to access digital banking services, online marketplaces such as Meesho and Amazon Saheli, and engage in micro-enterprises using platforms like WhatsApp Business. The strategy also promoted financial empowerment through the adoption of mobile-based financial tools such as the Unified Payments Interface (UPI), Direct Benefit Transfers (DBTs), and digital savings platforms, which enhance women's financial autonomy and reduce reliance on intermediaries. According to the 2011-12 data, with a reported female labour force participation rate of only 23.7%, the strategy aimed to increase this figure to at least 30% by 2022-23 through targeted interventions, including skill development, digital literacy, and comprehensive gender policies. Mobile technology and digital tools give a revolutionary opportunity to eliminate gender disparities, encourage self-employment, and support sustainable economic engagement in rural Gujarat, where patriarchal traditions frequently limit mobility and

economic options. These programs demonstrate how mobile and digital platforms can be effective facilitators of women's economic empowerment at the local level, aligning with India's broader development strategy (NITI Aayog, 2018). A qualitative study by Malanga and Banda (2021) in Malawi reveals that, although women micro-entrepreneurs gained better access to marketing channels, improved communication with customers, and obtained business information through mobile phones, they still faced significant challenges, including poor ICT infrastructure, high data costs, and limited digital literacy. These obstacles closely mirror those encountered by rural women in Gujarat, underscoring that sustainable digital inclusion cannot rely on mobile devices for access. Instead, complementary government initiatives—such as expanding rural connectivity, subsidizing data plans, and offering digital literacy programs—are essential to unlock the full benefits of mobile technology for women's economic empowerment.

It is now widely acknowledged that mobile technology plays an important role in enhancing the economic well-being of rural women in India. With the increase in affordable smartphones and data plans—mainly due to companies like Reliance Jio—women with low literacy levels have also begun to access the digital world. Many of them use voice-based apps and image-driven interfaces that help them overcome reading and writing barriers (Wired, 2021; Garg, 2021). In states like Kerala, mobile apps have enabled women farmers to access market prices, agricultural advice, and cooperative services, resulting in noticeable increases in their income and productivity (Gupta & Agrawal, 2024). According to a national survey, approximately 80% of rural women entrepreneurs, even those with limited digital literacy, are already utilizing mobile-based social commerce platforms to expand their customer base and achieve financial independence (Times of India Tech Desk, 2024). In Bangladesh, a study found that when women farmers started using mobile phones for financial transactions, their sense of economic empowerment increased from 37.5% to 61.9% (Rahman & Islam, 2023). In India, women supported by SEWA Bharat reported that smartphones helped them manage their small businesses more effectively and gave them a stronger voice in their communities (SEWA Bharat, 2023). Together, these examples demonstrate that mobile technology—when made accessible and user-friendly—can help rural women overcome barriers such as low literacy and limited infrastructure, while opening new opportunities for entrepreneurship, financial inclusion, and self-reliance.

In the Research Handbook on the Sociology of Gender, Aarushi Bhandari (2024) examines how women in the Global South, including those in India, interact with digital technology. She points out that while mobile phones and digital platforms offer great potential—helping women stay connected, access information, and become more financially independent—there are also important challenges to consider. Bhandari warns that much of this technology is shaped by large Western tech companies and is operated within what she describes as an "attention economy," where platforms compete for user engagement, which can sometimes reinforce existing gender inequalities rather than addressing them. She emphasizes that for technology to empower women, especially in rural areas, it must support their agency and autonomy—for example, by ensuring privacy, user control, and culturally relevant content in local languages especially in places like rural Gujarat, where digital tools can indeed support entrepreneurship, education, and access to services, but only if they are thoughtfully

designed and ethically implemented. Bhandari advocates for a rights-based approach, better digital literacy, and the use of ethical design principles that prioritize women's needs and safety online (Bhandari, 2024, pp. 449–462). Global trends in digital development offer valuable lessons for enhancing digital access in rural areas. According to the International Telecommunication Union (ITU, 2022), while 66% of people worldwide are online, rural internet usage remains significantly behind, with only 46% of rural users having internet access, compared to 82% in urban areas. Notably, women are still 6% less likely to use the internet and 12% less likely to own a mobile phone than men globally, which shows gender inequality in digital access as a serious problem. The ITU emphasizes that digital connectivity must be more than nominal; it must be "meaningful," offering experiences that are secure, productive, and enriching. Although numerous challenges persist, particularly in low- and middle-income regions of India, including low literacy rates, a lack of digital skills, and high service costs. These worldwide trends underscore the need for inclusive, region-specific approaches that prioritize mobile-first infrastructure, gender-sensitive digital training, and content in local languages. Gujarat, as a progressive state, can coordinate local policies with global standards, such as the Broadband Commission's goal of 2% income affordability for broadband access, to boost digital inclusion and economic Empowerment of rural women. This approach guarantees that the solutions are not only effective locally but also reflect global best practices.

As of December 2024, India had a total of 1.18 billion telecom users, of which 527.2 million resided in rural areas, according to the Telecom Regulatory Authority of India. Out of those, only 407 million rural users accessed the internet, indicating that around 120 million rural users still had no internet access—they primarily used phones for calling or basic services. There were 929 million mobile internet users nationwide, indicating widespread access; however, a gap remains in regular, meaningful usage, particularly in rural areas due to socioeconomic and infrastructure challenges. Enhancing rural areas' access to mobile devices and the internet is not only a question of infrastructure; it also catalyzes women's engagement in online learning, financial services, and digital entrepreneurship—all essential elements of economic empowerment in the digital age (TRAI, 2025).

Rural women's access to mobile-based services remains limited due to the significant digital divide in India, as evidenced by the fact that rural tele-density (the number of telephone connections per 100 people) stood at only 58.29%. In contrast, in urban areas, it was significantly higher at 131.37%. Even while Gujarat's rural tele-density (67.14%) was marginally higher than the national average, it still shows a disparity in equal access to digital technology, particularly for women and other disadvantaged groups (TRAI, 2025). Compared to many other Indian states, Gujarat still has a noticeable gender gap in digital access in rural areas. According to data from NFHS-5, only 30.8% of rural women in Gujarat have ever used the internet. In comparison, the numbers are significantly higher in states such as Maharashtra (42.6%), Tamil Nadu (38.6%), and Kerala (61.8%), which are known for better gender policies and stronger digital literacy (MoHFW, 2021). In contrast, Gujarat's numbers are closer to those of states like Rajasthan (24.5%) and Uttar Pradesh (27.8%), where traditional gender norms and low education levels also impact women's access. The gap is also evident when it comes to owning a mobile phone. Only 48.4% of rural women in Gujarat have a personal mobile phone, while more than 70% of rural

women in states like Tamil Nadu and Himachal Pradesh do, highlighting significant regional disparities in digital access and Empowerment (National Statistical Office [NSO], 2025). These differences are not just about technology—they reflect deep-rooted social and economic challenges. Barriers like caste, education, household income, and patriarchal control over women's access to technology all play a role. Due to this divide, many rural women in Gujarat are still excluded from important digital tools, such as e-governance services, digital payments, online learning, and business platforms, which are helping men and women in other states advance. This inequality continues to limit women's economic opportunities and overall Empowerment. Although mobile technology is growing rapidly in many low- and middle-income countries (LMICs), rural women continue to be left behind in terms of mobile phone ownership and internet access. According to The Mobile Gender Gap Report 2023, women in LMICs are 19% less likely than men to use mobile internet, which means around 310 million fewer women are online compared to men. The report also shows that women are 7% less likely to own any mobile phone and 17% less likely to own a smartphone. The problem is particularly pronounced in South Asia, where men are significantly more likely to use mobile internet, 41% more often than women. In India, Women are notably more reliant on borrowed or shared devices, with 19% of female mobile internet users not owning a phone and instead using someone else's device to access the internet (GSMA, 2023). The reasons behind this gap include traditional gender roles, low literacy and digital skills, concerns about safety, and the high cost of smartphones. However, data indicate that after women use mobile internet, their usage habits and perceived advantages in life are similar to those of males. The bottom line is that to truly tap into the game-changing potential of mobile phones for women's economic involvement, independence, and Empowerment, particularly in rural areas like Gujarat, we need to confront those deep-seated structural and cultural challenges head-on.

India has made noteworthy progress in financial inclusion. Back in 2014, only about 53% of people had bank accounts; however, due to key Government efforts, such as the PM Jan Dhan Yojana (PMJDY), Aadhaar, and UPI, that number has increased to almost 80% by March 2024. However, a recent study by EY India and CII (2025) highlights that access alone does not guarantee usage, especially for women residing in rural areas. According to the report, despite 69% of women having access to digital banking, only 44% of them regularly use it for digital transactions. Surprisingly, 18% still do not know about key financial programs, such as PMJDY and Atal Pension Yojana (APY), which highlights a significant need to improve financial literacy and build confidence in using digital tools.

The study suggests things one step at a time, with a tiered approach.

- In the short term, efforts should focus on individuals who are excluded from or underutilize the banking system, and provide basic training on how to use digital tools. It is also crucial to promote platforms that are simple, easy to use, and do not require a super-fast internet connection, such as UPI apps that work even on basic phones.
- In the long term, building a tech-driven financial world that integrates AI, automation, and data analytics can

personalize financial services and introduce gamified learning, effectively engaging people.

The report highlights a critical need for financial education, particularly for women in rural areas. They still face hurdles in understanding and trusting digital financial systems. These findings are highly relevant for Gujarat, where a combination of targeted training programs and enhanced digital infrastructure could rapidly increase rural women's economic participation and financial independence. In addition to access, innovative, locally based strategies that address social, technological, and financial barriers are necessary for empowering rural women to utilize mobile technology and digital platforms.

Successful Initiatives & Best Practices

Several innovative initiatives across India, particularly in Gujarat, offer replicable models for leveraging mobile technology to empower rural women economically.

The Gujarat-based *Self-Employed Women's Association (SEWA)* is one of the most significant grassroots models. To improve women workers' access to marketplaces, financial services, and health insurance, SEWA has included mobile solutions. Their "*Manager Ni School*" program provides instruction in digital communication, pricing, and mobile-based bookkeeping. As a result, rural women now have more financial freedom and decision-making authority in addition to higher incomes (SEWA, n.d.).

Udyogini, an NGO operating in Gujarat and other regions of India, trains rural and tribal women in entrepreneurship through mobile-based learning modules, many of which are audio-based. Udyogini effectively links women to value chains in crafts, tailoring, and agriculture by reducing the literacy barrier and utilizing WhatsApp for engagement, which allows for the creation of revenue through mobile-supported microenterprises (Udyogini, n.d.).

In Gujarat, the NGO ANANDI (Area Networking and Development Initiatives) is doing impactful work. It has been actively supporting and mentoring women who have been elected to local government roles, helping them grow in confidence and lead more effectively in their communities. A case study from Abhlod village illustrates how ANANDI's training in Panchayati Raj rules, social justice, scheme entitlements, and the use of mobile apps for service delivery enabled Gitaben, a Dalit woman with a class 9 education, to develop her confidence and leadership skills. Following training, Gitaben and colleagues helped approximately 3,000 women create NREGA work cards and fixed problems with pension access and sanitation in their villages (Raghuram, 2022), and thus demonstrate how mobile literacy is an essential empowering tool that empowers women to use digital platforms and navigate schemes successfully.

On the policy side, the *Mahila e-Haat program*, initiated by the Ministry of Women and Child Development, is another significant model. It is an online marketplace that is mobile-friendly, allowing women-led businesses to market and sell their goods directly to consumers.

Additionally, it provides a government-backed structure for visibility and quality assurance, which is especially helpful for SHGs and rural artisans (MWCD, n.d.).

The Pradhan Mantri Gramin Digital Saksharta Abhiyaan (PMGDISHA) is one of the key government-led initiatives in rural India for digital empowerment, aiming to provide basic digital literacy to one member of every rural household, with a strong focus on women and marginalized communities. This program helps rural women enter the digital world. Through this program, women learn vital skills, including using smartphones, navigating the internet, and utilizing various apps and websites. It is about providing them with the tools to use mobile technology and digital platforms to enhance their earnings and achieve economic growth. Such programs lay a crucial foundation for leveraging mobile technology and digital tools to improve women's economic participation. Digital literacy equips rural women to access government schemes, e-commerce platforms, mobile banking services, and self-employment opportunities, thereby directly supporting the goal of empowering women through digital inclusion. (Ministry of Electronics and Information Technology [MeitY], n.d.)

NABARD's eShakti project, which digitizes SHG data throughout India, including Gujarat, is a more systematic intervention. Rural women can easily manage their financial records, track their savings, and receive SMS warnings about loans with the eShakti smartphone app. Women now have greater influence over their financial resources due to increased openness, financial credibility, and the availability of microcredit (NABARD, n.d.). One example of how digital governance may directly benefit rural women is the recent national recognition of Gujarat's Palsana Gram Panchayat at the 28th National Conference on eGovernment. Palsana won a jury award to enhance the delivery of public services through creative use of technology, along with Suakati in Odisha and Lalitpur in Uttar Pradesh (Press Trust of India, 2025). These digital government platforms are a game-changer for women. It makes it easier for women to access welfare benefits, government programs, or resolve issues directly without needing an intermediary. They can now apply online for benefits such as health subsidies, employment programs, widow benefits, and vocational training. It boosts their independence and lowers bureaucratic hurdles. Gram panchayats like Palsana are exemplifying how localized e-governance can be a driving force behind the social and economic Empowerment of women in Gujarat by establishing inclusive, transparent, and technologically advanced administrative systems.

The book, "*Bridging the Digital Divide: Empowering Women in Rural India through Emerging Technology*," provides real-world examples. It demonstrates how mobile technology is making a difference in the lives of rural Indian women, both economically and socially. One of the chapters compiles a range of case studies from across India, illustrating how mobile platforms are helping women overcome traditional barriers to financial inclusion, entrepreneurship, education, and digital services. (Rajput et al. 2025)

Google & Tata Trusts – Internet Saathi: The Internet Saathi program, initiated by Google and Tata Trusts, trained rural women as "Saathis" to teach digital literacy in their communities. By 2020, the initiative had touched the lives of 30 million women across India. In Rajasthan alone, a Saathi named Parvati trained over 1,100 women to utilize tools such as Google Search, Maps, and WhatsApp for accessing employment opportunities and government schemes (Google India, 2020; India Express, 2016)

Digital Sakhi – L&T Financial Services: The Digital Sakhi program, launched in Madhya Pradesh by L&T Financial Services in collaboration with SEWA and other NGOs, has trained over 1,000 women by providing digital financial services in their communities. These women then became local facilitators, helping people use e-payment systems, open bank accounts, and link Aadhaar cards. The program improved both financial literacy and social recognition of the participants (L&T Financial Services, 2021).

Accion & Microfinance Institutions – E-Finance on Mobile: In collaboration with microfinance institutions, Accion has made a significant difference for over 450,000 rural women, enabling them to repay their loans using their mobile phones. After getting some practical digital training, 58% of participants reported being able to conduct transactions independently, thereby increasing both convenience and confidence in managing digital payments (Accion, 2020).

Digital Green – Community Learning through Videos: Digital Green used community-based videos to deliver training on farming, health, and sanitation, reaching a large female audience (approximately 70% women). Its mobile platform Loop allowed women farmers to track sales and receive prompt SMS payments, improving both knowledge and financial outcomes (Digital Green, 2021).

ITC e-Choupal – Rural Market Linkages: The e-Choupal initiative was launched by ITC Limited, with internet kiosks established in rural areas, many of which were operated by trained women entrepreneurs. These kiosks provided information on market prices, weather forecasts, and even direct connections to buyers, which greatly helped women become more involved in agriculture and decision-making (ITC, 2020).

BC Sakhi App – Financial Inclusion in Uttar Pradesh: The Banking Correspondent (BC) Sakhi scheme in Uttar Pradesh is providing rural women with the tools and training to act as digital banking agents, utilizing smartphones and financial apps. These women earned a monthly honorarium and commissions, making this a sustainable income source while advancing financial inclusion in underserved communities (Government of Uttar Pradesh, 2021).

A 2022 study by Digital Green in Andhra Pradesh demonstrated how mobile technology can effectively deliver Extension and Advisory Services (EAS) to women's Self-Help Groups (SHGs) engaged in livestock-based livelihoods. It is impressive how women primarily used voice and text messages to get crucial information about farming and animal health, even with basic mobile phones. Despite challenges with infrastructure, most found these affordable mobile advisories helpful in making smarter choices and becoming more productive with their livestock. (Digital Green, 2022). This model holds strong relevance for rural women in Gujarat, particularly those engaged in dairy farming, horticulture, or small-scale agriculture. With proper localization—such as content in Gujarati, mobile-compatible formats, and SHG integration—mobile-based EAS

platforms can significantly enhance women's access to timely information and improve their agro-based livelihoods.

The Study *"Use of Mobile Phone by Rural Women in Their Daily Activities: A Systematic Review"* highlights how even basic mobile access can bring about transformative change in the lives of rural women, especially those who are entrepreneurs. The review found that using a mobile phone makes a huge difference for women's Empowerment in five key areas: economic, social, technological, psychological, and political (Rahman & Islam, 2023). In Bangladesh, the women's overall empowerment index increased from 37.5% to 61.9% following mobile adoption, with the most notable improvements observed in economic autonomy and social participation (61.92%). Phones began to be used by women to manage customer relations, negotiate prices, and conduct mobile transactions—tasks that had previously been hindered by gender norms limiting mobility and market access (Rahman & Islam, 2023). The study also reported an increase in social engagement as rural women became more involved in community groups, vaccination drives, and sanitation awareness campaigns, leading to a significant jump in their "Social Participation Index" from 39.7% to 66.0%. It demonstrates that mobile connectivity not only boosts earnings and decision-making but also helps women find their voice in the community and collaborate more effectively.

These findings are highly relevant for rural Gujarat, as mobile technology can empower women to actively participate in both economic and community development by providing support through content in regional languages, digital training led by peers, and user-friendly platforms. A 2024 study by Srishti Aryan, *"Impact of Digital Technologies on Women's Economic Empowerment: Insights from SHGs in Bihar,"* examines how mobile tools and online selling platforms are transforming the economic circumstances of rural women participating in Self-Help Groups (SHGs) in Bihar. Based on fieldwork and interviews, the research found that access to digital payment apps, mobile wallets, and online marketplaces helped women improve their income, manage group savings transparently, and make more informed business decisions. (Aryan, 2024). Many women who previously relied solely on cash have begun using mobile banking apps to track their accounts, receive direct benefit transfers, and apply for loans online. Some women expanded their market reach by selling products such as pickles, handicrafts, and tailored items online, using platforms like WhatsApp and Facebook. As women grew more confident in managing their own money and interacting with customers, they also reported feeling more independent, having greater self-assurance, and becoming better at negotiating. (Aryan, 2024)

However, challenges remained. Many SHG members still shared phones with male relatives, faced patchy internet access, or lacked digital skills, especially older women and those from marginalized castes. The study calls for long-term, inclusive training programs, peer mentoring, and infrastructure support to make digital Empowerment sustainable. These findings hold valuable lessons for Gujarat, especially as the Gujarat State Rural Livelihood Mission (GSRLM) continues to promote SHGs. By adapting Bihar's successful strategies—such as SHG-led digital hubs, local-language apps, and NGO partnerships—Gujarat can further support women's economic Empowerment, especially in rural communities where they still lack digital access.

A study by Meenu, Dua, and Yadav (2025), *"Digital Literacy for Rural Women: Pathways to Empowerment and Socioeconomic Inclusion,"* has offered some interesting findings. It demonstrates the significant impact of digital training that is explicitly designed for a region and its community, enabling women to gain power and become socially and economically empowered. Conducted across community centres in Hisar and nearby districts in Haryana, the study found that using regional dialects, voice-led instruction, and visual aids helped overcome literacy barriers faced by many participants. Women gained confidence in using mobile apps to stay connected with family, access government welfare schemes, and start small businesses. For example, one woman began selling handmade supari (betel nut) via WhatsApp and saw her monthly income increase by 30% (Meenu et al., 2025, pp. 40–42).

The model was further strengthened by incorporating digital literacy sessions into the regular meetings of SHGs (Self-Help Groups) in places such as Udaipur. Peer trainers—local women who had completed previous sessions—supported others in learning how to download welfare scheme applications, open digital savings accounts, and link bank accounts to mobile phones. According to the evaluation, 80% of these women were still actively using mobile financial tools six months later (Meenu et al., 2025, pp. 43–44). In more remote areas of Madhya Pradesh and Rajasthan, mobile digital units—solar-powered vans equipped with tablets—visited isolated villages every week. These units offered hands-on training in using online marketplaces, e-governance portals, and video calls. A notable success story involved a group of tribal women artists who learned new skills and successfully marketed their embroidery digitally. They collectively earned ₹12,000 in just two months, which significantly boosts their household incomes. (Meenu et al., 2025, p. 45).

These real-life examples demonstrate that when digital training truly aligns with local ways of speaking and learning, it not only improves digital skills but also boosts people's economic confidence, encourages greater community involvement, and leads to genuine, long-term empowerment. These successful models are highly relevant to implement in Gujarat's rural development programs and SHG frameworks. One of the reports, *"Click. Learn. Earn."* by Trickle Up (2025), shows how digital tools can transform the lives of ultra-poor women in rural India, especially when combined with mentorship and locally relevant training. Trickle Up launched the "MPowered" initiative in Odisha, Jharkhand, Chhattisgarh, and West Bengal, provided mobile phones, digital coaching, and livelihood support to women from highly disadvantaged backgrounds (Trickle Up, 2025). Success stories of Namita from Odisha, who used mobile apps to improve her farming and establish a shop, and Sastri from Raipur, who now leads a women's federation and operates multiple businesses, are evidence of how access to basic digital tools and support systems can lead to increased income, leadership, and self-reliance. Both women also helped others start microenterprises, becoming change agents in their communities (Trickle Up, 2025). The study demonstrates that mobile technology not only enhances women's livelihoods but also transforms social norms. Many women reported having more influence in household decisions and greater freedom of movement due to remote access to training, markets, and government services. Over 65% of participants actively used digital livelihood apps within just three months, and those with higher usage experienced

increased confidence and income growth. Even women with basic feature phones accessed services through USSD and IVR, ensuring inclusivity across various levels of digital literacy (Trickle Up, 2025). Overall, these best practices clearly show that genuine digital and mobile empowerment must be multi-dimensional. It requires not only access to mobile phones but also training, content in local languages, robust infrastructure, market linkages, and culturally sensitive support. When these elements come together, they enable rural women to go beyond simply using phones for calling and instead use them as powerful tools for learning, earning, and growth.

Challenges

Even after good progress in expanding mobile networks and digital platforms across India, women residing in rural areas still face multiple challenges when it comes to using mobile phones for economic empowerment:

- **Affordability** remains a significant barrier. Many rural women are unable to afford one due to their limited monthly income.
- **Digital literacy** levels are low. Specifically, older women or women from marginalized communities who struggle to read, write, or understand how to use digital apps. Some are not even aware of mobile internet or its benefits.
- **Social norms and safety concerns** often restrict women's use of mobile phones. In some communities, women need permission from male family members to own or use a phone.
- **Limited access to infrastructure**, such as poor internet connectivity or a lack of electricity in remote villages, makes it hard to stay digitally connected.
- **Language and content** are also significant obstacles. Many digital tools are not available in the local language or do not account for local context and learning needs.

It is made clear by these challenges that access alone is not enough. Without the necessary support in the digital world, many rural women continue to be left behind.

RECOMMENDATIONS

- **Subsidize smartphones** or offer easy credit options to enable more women to afford personal mobile devices.
- **Develop digital training programs in the local language**, utilizing audio-visual aids and peer-to-peer learning models through Self-Help Groups (SHGs) or with the assistance of Saathis (friends/companions).
- **Ensure women-friendly digital platforms** that prioritize privacy and safety are easy to use and, importantly, work well on basic feature phones.
- **Expand rural internet infrastructure**, especially in remote areas, through public-private partnerships.
- **Encourage partnerships** among NGOs, tech companies, government departments, and SHGs to scale up successful models such as Digital Sakhi, Udyogini, and ANANDI.
- **Integrate mobile-based financial training and monitoring tools** into existing SHG frameworks to enhance creditworthiness and financial planning.

- **Promote awareness** of schemes like PMJDY, UPI, and e-Governance platforms using community radio or mobile voice messages.

Limitations

- This study entirely depends on secondary data sources.
- No fieldwork has been carried out as part of this research.
- As the study is on secondary data, there is a significant need for future longitudinal and comparative studies to build upon the findings and provide deeper insights.

CONCLUSION

As we know, Mobile phones and digital platforms offer an excellent opportunity to transform the economic lives of rural women in Gujarat. When combined with training, localized content, strong infrastructure, and gender-sensitive policies, these tools go far beyond just communication—they become means for earning, learning, and leading. This paper highlights that with proper support, rural women utilize their mobile phones to start businesses, access banking services, and connect more within their communities. However, to make this transformation widespread and sustainable, there is a need to embrace inclusive strategies rooted in local culture and powered by technology. By learning from successful models in India and aligning them with Gujarat's local needs, the state can become a national leader in rural digital empowerment, ensuring that every woman has the tools, skills, and confidence to grow in the digital age.

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