

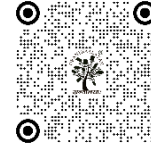
Original Article

DIGITAL TECHNOLOGY FUELING DREAMS OF RURAL DIGITAL IMMIGRANTS - A CASE STUDY OF WOMEN FROM FARMER PRODUCING ORGANIZATIONS IN WESTERN MAHARASHTRA

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ABSTRACT

Digital immigrants as defined by Mark Prensky [Prensky \(2001\)](#) are the individuals who were born before 1980, in an era before technology became omnipresent. These individuals may differ in their comfort levels to use and adapt to technology, and are categorised on the basis of their ability to handle digital tools. This generation grew up in an era before computers, internet or smartphone and related applications. In contrast to the digital natives who were born in the digital era, the digital immigrants learnt about usage of digital tools later in their lives. The wonders and possibilities of fulfilling dreams through a digitally immersed world are ceaseless. This research paper presents the partial findings of a case study which attempts to investigate the usage of digital tools by rural women, hence, the rural digital immigrants who were mostly posed with challenges of gender divide, access, patriarchal norms, and geographical barriers. It explores how the members of Farmer Producing Organizations have become adept users of the digital tools and overcome several barriers and succeeded in their lives. The study adopted qualitative approach and a case study method. This study presents findings from in-depth interviews and focus group discussions of the members of farmer producing organizations. Digital tools have played a crucial role in uplifting them and giving them dreams and the means to fulfil those dreams.

Keywords: Digital Immigrants, Case Study, Qualitative Research, Digital Tools, Farmer Producing Organization

INTRODUCTION

The expanse of digital technology has not left any arena untouched. Over the last few years, it has entered rural spaces and touched lives of a population that was geographically segregated and away from mainstream activities. According to a news article in rural voices [Voices \(2023\)](#), it has rewritten narratives and success stories of resilient rural women who otherwise had a very limited exposure to technology. Digital technology has reshaped daily lives of women in indirect yet significant ways. It opened avenues for them giving them access and exposure not just to technology but to a world of new possibilities. Their mutual exchange of information and learning about the digital tools enabled them to learn, access and use a variety of digital tools for day-to-day communication and business. [Hattiangadi and Jadhav \(2026\)](#). Limited exposure to technology, yet a window to new opportunities, the shift to digital tools is a game changer for rural women. In the context of this research paper, the respondents were women in the age group of forty and above, hence described as rural digital immigrants. A reflection of the diffusion of innovations theory [Rogers \(1962\)](#) is also seen here as, these participants who are termed as “digital immigrants,” engage with technology as an

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innovation and their adoption of that technology in the phases from innovators to laggards. They not only used the technology for their ease of living but also negotiated its meaning and use in their subsisting realities.

Farmer producing organizations (FPOs) have developed as vital collective platforms that support rural women's participation in economic and social activities. In the pursuit of using these digital spaces, and engaging with smartphones, mobile applications, and other online communication platforms, they did not solely remain as technological devices but became means of connecting people, creating opportunities for learning, and magnifying scope for transforming lives.

The role of digital technology in this case, went beyond just networking, it went deeper, to fuel the dreams and aspirations of rural women and help them navigate their lives through patriarchal system, giving them a foothold over their own lives. While FPOs provided these women a platform to sell the farm produce under one roof, digital tools became a means to gain access to markets beyond geographical limitations. This study explores how digital technology drives ambitions, restores self-assurance, and advocates action among these women associated with FPOs. It emphasises on how these women gradually accept digital practices, overcome structural and individual challenges and limitations, and redefine their roles within their families, communities and societies at large. This paper looks at technology and digital engagement by women, not as a remote skill, but as part of an empowerment journey shaped by mutual support, guidance from experts and the institutions, along with their constructive everyday struggles.

LITERATURE REVIEW

In context to this study [Malhotra and Sharma \(2017\)](#), the Digital India program played a vital role in accomplishing dreams and aspirations of women by providing them access to initiatives like Digital Locker, National Scholarship Portal, and eKranti thus minimizing hindrances for women by making education, healthcare, and financial services accessible online. This context is relevant for rural women who largely faced challenges to move around due to the burden of chore and familial responsibilities. They also faced societal ceilings to go out of the house and seek jobs. e-Learning platforms and digital classrooms have the potential to impart women with adaptable options to seek higher education or vocational training alongside balancing family and farming tasks and responsibilities. The Digital India initiative also included women in financial undertakings. By making use of mobile banking and digital payment systems, women benefited by seeking control over their finances. This enabled them to be self-reliant and take their own decisions about their expenditures. This initiative supported social empowerment of women by providing connectivity through smartphones and social media, helping them build and grow their networks while sharing knowledge and amplifying their voices. Across rural areas, campaigns like Swachh Bharat Mission and MyGov encouraged women to be a part of the village governance and get involved in matters of civic life.

This article (Unknown, 2023) stresses on how women who have access to unified payment interface applications, mobile banking, social media, and online interactions can grow their businesses, connect with new digital markets and thus become digitally empowered. With the help of these tools, these women can realize their dreams of seeking education, becoming a business-woman, or exploring new information about modern farming techniques.

A report on An Exploratory Study of Adoption and Usage of Technology by Rural Women for Entrepreneurship and Empowerment by Digital Empowerment Foundation [Banerjee Belur et al. \(2024\)](#) highlights the benefits of digital technology as providing access and connectivity, enabling entrepreneurship and economic empowerment, and bringing about social change. But interestingly, this report also highlights the challenges faced by women in this journey. Language can be a barrier as most online content is in English, digital illiteracy, financial dependency, and social restrictions continue to limit full empowerment. Secondly, the aspect of intersectionality, how access is not shaped by gender alone but also by caste, class, and community norms, showing that empowerment is uneven across groups.

According to a report on women's collectives and usage of digital media by BBC Media Action [Tyers et al. \(2021\)](#) ownership and access issues among mobile users is gender-based. Mobile ownership in India is gender-based and estimated to range between 20% to 46%. It was known that 37% of men owned smartphones compared to only 14% of women in 2019. But the gap in ownership of basic phones was more balanced with 31% of women owning the basic handset versus 29% of men vs. 31% of women. This scenario changed in 2020, when the study revealed that while 42% of adult men utilized the internet via mobile phones, only 21% of adult women did. Considering correlation between factors like usage and literacy, there was a marked difference in the usage as women were using fewer applications and less frequently than their male counterparts and likely to borrow mobile devices for basic calling or communication rather than own them. More women than men faced technical hitches in using digital technology, difficulty reading content, and requiring help with complex features.

The Sanchaar Kranti Yojana (SKY) program in Chhattisgarh distributed over 2 million free smartphones to female heads of rural households. As a result, women reported that the smartphone ownership rose by 56% among the women which is a huge gap to address while the actual usage increased only modestly: basic phone use +3%, advanced phone use +4%. This led the researchers of this study to state that simply providing devices doesn't automatically translate into meaningful digital adoption. Usage of mobiles was not just limited to the technical aspects but extended to regional and social disparities, with factors like education, socio-economic factors, societal norms playing a critical role.

Digital technology has played a vital role in the journey of empowerment and has been a prevalent area of study among researchers in the field of development and communication. Participation in digital activities is a path to better connectivity, gaining access to information, and handling one's own finances. [Hattiangadi and Jadhav \(2026\)](#) and Researchers have also studied that mere access is an incomplete parameter to fulfil the criteria of empowerment considering the complexities of the social system, the deep-rooted patriarchy, literacy levels of the users, support of family, workplaces as institutions. Cooperation and encouragement is needed from the family members, and societal systems to the women to benefit most. According to a research paper on Digital technologies and women's empowerment – casting the bridges [Lechman and Paradowski \(2021\)](#), digital technologies can be powerful tools for women's empowerment, only if structural barriers like affordability, education, cultural norms, and policy gaps are addressed. Without gender-sensitive strategies, digital inclusion risks reinforcing existing inequalities rather than dismantling them. Women, especially in developing countries, face barriers to ICT access due to affordability, cultural norms, and lack of targeted policies. This paper puts forth this crucial point of the flip side of development despite the presence of technology.

While the adoption and acceptance of digital technology in the context of rural women is influenced by several obstacles as mentioned above, collective edifices such as self-help groups and farmer producing organizations have played a crucial role in facilitating women's engagement in the digital ecosystems. These collectives create safe learning spaces, promoting growth, entrepreneurial mindset, and self-reliance among women who are willing to explore, experiment and innovate.

Another research paper defines empowerment as a multidimensional construct composed of SHG participation, digital inclusion, social empowerment, and economic participation [Dr. Manikandan, and Julie \(2025\)](#) It is relevant to this study as it highlights the active participation of Self-Help Group members through fulfilling attendance, managing their savings and fulfilling their roles and responsibilities as group members using digital tools effectively- smartphones, unified payment interface applications.

Quantitative in nature, this study adopted statistical applications which led the researchers to conclude that SHG membership when combined with digital literacy and social capital building significantly steers women's economic participation. Thus, the concept of empowerment does not just limit to economic indicators but goes beyond to incorporate the affective domain of psychosocial attributes, like action, self-confidence, ability to take decisions, and dignity of self.

Since the research foundation was based on the Constructive paradigm, the researcher considered the constructivist perspective here. It can be stated that digital spaces are not merely nonaligned platforms but socially constructed environments for its users to actively decode, decipher and assign meaning to technology based on their understanding. One can say that the constructivist viewpoint is relevant in this scenario for rural digital immigrants whose usage is mostly gradual, totally rooted in their social experiences and most often negotiated.

Even though there is a significant amount of research happening in this area, there remains a gap in comprehending how rural women experience digital transformation and its relevance in their daily lives. This research paper addresses that gap by focusing on lived experiences within FPOs.

METHODOLOGY

This research paper is a part of a larger study and has adopted a qualitative case study approach to map the experiences of women associated with a development initiative. For this particular research paper, only a part of the study population is considered with special focus on in-depth interviews of 15 participants from Farmer Producing Organizations in Western Maharashtra. The researcher interviewed women who were a part of different FPOs to understand their usage of digital means and how it is enabling their journey towards empowerment. Strongly embedded in the constructivist paradigm framework, it guided the research, focusing on the real-life experiences of the participants, how they interpret usage of digital tools, make meaning of their lives, evolve through constructive struggles and create sustainable livelihoods for themselves and their families.

The researcher gathered data through in-depth interviews, focus group discussions, informal conversations, and observations of women who were actively engaged in FPO activities and used digital means for communication more than before. The participants were women from diverse socio-economic backgrounds, with limited prior exposure to digital technology.

Thematic analysis was conducted after meticulously transcribing and coding the data. Narratives were thoroughly studied and coded into key dimensions such as empowerment process, constructive struggles, self-assertion, control over resources, sustainable development, and meaning-making, based on the definition of empowerment by Prof Radheshyam Jadhav (Jadhav, 2023). The researcher also took help of the MAX QDA software to understand data and get a deeper insight into coding it. As the definition was used as a basis for the analysis, these themes were developed from it and the data was coded. The researcher ensured that participants' identities were kept confidential, their consent was sought, and their narratives were approached with respect and dignity.

ANALYSIS

The researcher's quest to seek answers to the problem statement led her to understanding the participants' journey of empowerment through digital means. Empowerment is not a destination but an ongoing journey which unfolds gradually as a

layered process. The analysis is in alignment with the definition which is as follows, "Empowerment is a process of constructive struggle by self-assertive people against oppression to gain the power to control their lives, and resources and attain sustainable development while giving meaning to their lives." Jadhav (2023) The six aspects of the definition were studied in-depth, the findings of which are presented below.

For these participants, community-based initiatives played a crucial role in enabling them to engage with digital tools. It was learnt that women needed hands-on experience to get used to the applications. There was initial hesitation due to literacy barriers but with the help of collective support from family and peers they overcame that. Regular involvement and active participation in the learning process through online meetings, using digital transactions, unified payment interface applications, and various features of the messaging applications. It is learnt that empowerment is a gradual process, rather than a sudden transformation with their involvement in Farmer Producing Organizations. Association with digital platforms started small and later expanded, creating opportunities for networking and collaboration, decision-making, thus helping them move to active social participation and economic involvement.

Exposure to digital tools like WhatsApp voice notes, Zoom meetings, online learning sessions helped the participants in staying engaged and keep learning despite challenges like physical distance. One participant, during the interview, acknowledged that she had a strong academic inclination during her college days and wanted to study further and that she could converse in English. Due to her family circumstances, she could not study. Now, digital means have opened avenues for her to learn and she keeps looking for online opportunities to enhance her learning. Also, a very crucial learning that came across was that she perceived digital means as a path to independence. She mentioned that FPOs have a lot of work and responsibilities and one gets overburdened. But using digital tools she is now trying to pay attention to her own farm and becoming self-reliant. Digital tools are providing her means to earn her own livelihood and gradually become an entrepreneur. Another respondent said she learnt a lot of things about how to speak, how to present oneself by observing the experts who were conducting sessions. She, being a resident of the rural area, would not have gone to attend sessions in-person. But digital tools and online meeting platforms gave her that opportunity to listen to so many experts, observe how they talk and present facts. This improved her own communication skills drastically and she gained the confidence to talk and present herself in a professional way. This is a life changing experience for her which would not be possible without digital tools. The participants experienced growth, learning through interaction with the digital tools, thus enabling their journey towards being stronger and resilient entities. Having developed their own identities through digital means has reduced their dependency on their male counterparts or male family members who would be running bank errands for them as per their own convenience, to cite an example from the interviews.

Being financially stronger than before, their voices began to be heard and acknowledged in their homes and farming communities, they were able to be a part of decision-making.

Several participants shared their experiences of demonstrating empowerment through pursuing incomplete education through digital means, to start earning income after having received training in skill development, leading to economic empowerment. They got involved in income-generation activities and had more monetary resources at hand to spend for their children's education, renovation of their homes etc which mattered a lot to them. But again, the researcher would emphasize the fact that soft skills like confidence building, restoration of self-worth, the courage to speak before others and being able to participate in socio-economic activities was more important to them rather than merely financial growth.

The journey towards empowerment is constructive according to the definition of Prof Jadhav. It means that the women will not stop at obstacles but turn the obstacles and hurdles into opportunities. This is reflected in the findings of this study. Rather than considering struggle as a setback, the researcher found that they unlock new possibilities and potential among the participants. Sometimes geographically isolated, women also faced social, technological, cultural and literacy challenges. Their interviews revealed that they had found creative ways to overcome these challenges. A participant who was very reluctant to join the FPO was encouraged by her friend who also helped her to join the WhatsApp groups and taught her to use it. A constant theme that is observed across the study is collective efforts of the participants to mobilize each other. Despite lack of digital connectivity, access to smartphones, and no money to recharge, they turned these struggles into spaces for learning and growing. They resorted to sharing devices, sought help from family and peers to learn. One participant shared her excitement about being able to join the Jagriti Digital Yatra within the deadline of Google form submission after getting nominated by the sponsoring agency. When she had no idea about Google forms and their submission, she sought help from her son and he registered close to 50 women successfully within the given deadline. This was successful and they could gain a lot of experience from the Jagriti Digital Yatra. She mentioned that it completely changed her world view and made her realize how vast the world is.

Another parameter of the findings focused on how the participants were swift in adapting to digital means and tools. Almost all the participants struggled initially but were very fast learners and began to understand the working of the digital tools, just enough for their survival. Most of the participants learnt the interface of online meeting platforms. They learnt how to turn audio on or off, how to join the meetings, when to mute or unmute and speak in turns.

The researcher also learnt that the COVID-19 was a crucial period which intensified the digital engagement of the participants and reduced loneliness. They could be connected with each other despite the uncertainty and insecurity caused by the lockdown.

The next aspect of the definition was self-assertion and how the participants used the digital tools to participate in these platforms that gradually enabled women to develop confidence, voice, agency, and an independent sense of identity. It was learnt the participants were creative to adjust and redesign their lives under constraints like literacy barriers, poverty, social pressure, technological barriers and find ways through these struggles. The researcher observed that empowerment is developed through determination and endurance while gradually building resilience, autonomy, and participation in social and economic life. Their involvement in the FPOs also gave them access to various training programs which were immense learning opportunities for these women. Some of them were encouraged to learn to drive a tractor which gave them a renewed sense of belief in oneself. This boosted their confidence and changed their perspective towards life. Their mentors too played a crucial role in organizing these trainings and providing them with access to such life changing experiences. Thus, one can observe the theme of collective empowerment here. One cannot dismiss the fact that collective engagement is vital for the development of rural communities, especially women and it boosts learning and confidence-building. The learners and mentors were empathetic towards each other and could relate to the struggles of the learner community. The participants were hesitant to do something alien like using technology but gradually became confident users of the digital tools and extended help to others who were learning. This led the researcher to the find that digital tools usage was not limited to mere digital engagement. It helped them create their own identities and give wings to their dreams and aspirations.

When the situation demanded, the participants displayed self-assertion, not through confrontation or vocalizing but through engaging in digital tools for growth, learning from the success stories of the women in online training programs. They began to believe in themselves. One participant shared in her interview that these women have a lot of fire in them but did not know how to channelize it, but participation in training programs through the FPOs breathed new life in them and showed them that they can be independent. This, and other similar responses demonstrates that these participants' usage of digital tools has been for more than just financial empowerment. They leveraged the power of these tools to transition from the roles of traditional homemakers to entrepreneurs, leaders, and gained social recognition. Though challenging, they were willing to participate in various business ventures, training programs, and sometimes even travel to unknown places for the sake of work, something they had never done before. The participants developed a voice and identity of their own through being a part of the FPOs, seeking mentorship and learning about the digital tools and leveraging them for their development.

Digital tools also gave the participants of this study control in their hands to access knowledge, gain information about government schemes and they also mentioned in the interviews that they could spend their money for their children's education which meant a lot to them. One participant mentioned that she always had to borrow her husband's phone for her bakery business, which was growing with the help of WhatsApp statuses kept by her, her clients, and his own work would suffer. She proudly stated that she bought her husband a new device and kept the older one for herself, which reflected her autonomy and financial independence. Many participants had such inspiring incidents to share about how they used digital tools to gain control over resources. One important finding that emerged was about how they acquired control over their livelihoods and learned new skills that they monetized and turned into business opportunities. The training included livestock management, branding and packaging of their products to enhance marketability, training to ride a tractor, which gave them immense independence.

SUSTAINABLE LIVELIHOODS AND GROWTH

Digital tools contribute to livelihood diversification and sustainability. Women use technology to improve agricultural practices, market products, and access training. These activities enhance income stability and create opportunities for long-term growth.

Finally, the definition stresses on the concept of sustainable development and meaning making of their own lives by the participants in the journey of empowerment and in this case, with the use of digital technologies. Even during the crises of the pandemic, the participants could maintain stability of income, strived but ensured education for their children. This situation reflects that she is nurturing the next generation to ensure generational stability and family wellbeing. With her efforts, she sustained empowerment through collective participation in the FPO activities along with her peers and mentors. By using the digital tools, she became a global netizen and thus, digital inclusion. Skill development helped her to diversify and expand livelihood opportunities and ensure long-term wellbeing of her family.

INTERPRETATION

This paper submits the findings that digital tools are playing the role of a catalyst to support empowerment. It is not technology alone, but a complex intertwining of the individual's agency, its interplay with the social system along with team work and peer support. Appropriately, the Constructivist paradigm was adopted for the larger case study and its reflections were evident in the responses of the participants. The participants did not just make use of the digital tools but constructed meaningful existence with its use. This process of meaning-making was shaped by daily struggles, communication exchange, and interactions within the FPO ecosystem. With the involvement of the group and collective enterprise, empowerment is not an individual achievement but a shared journey. Guidance and support provided by the FPO, mentoring from the experts and support from peers played a crucial role in

sustaining digital engagement. One can observe that empowerment is beyond the measure of the money and it acknowledges internal changes like confidence, aspirations and recognition.

CONCLUSION

This study reveals that digital technology is a vital contributor to empowerment of rural women when combined with the support of organizations like FPOs. It is a gradual process and a long-term one is not immediate or uniform. It emerges through gradual learning, continuous effort, and the ability to navigate challenges. Empowerment begins as an internal process, guided by the individual's strong urge to change and make a difference, and later, external factors matter and together they shape the participant's concept of identity, aspirations and opportunities.

This study brings in firsthand experiences of twenty rural women who are members of Farmer Producing Organizations in rural areas of Western Maharashtra. They have experienced life transformation through use of digital means and one can conclude that they are not mere receivers of technology but dynamic users who shape and redefine roles for women.

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