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ASPIRATIONS, ACCESS & AGENCY

Women transforming lives with technology

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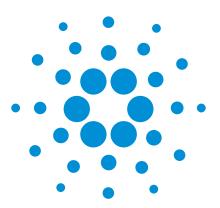
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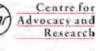
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ASPIRATIONS, ACCESS & AGENCY

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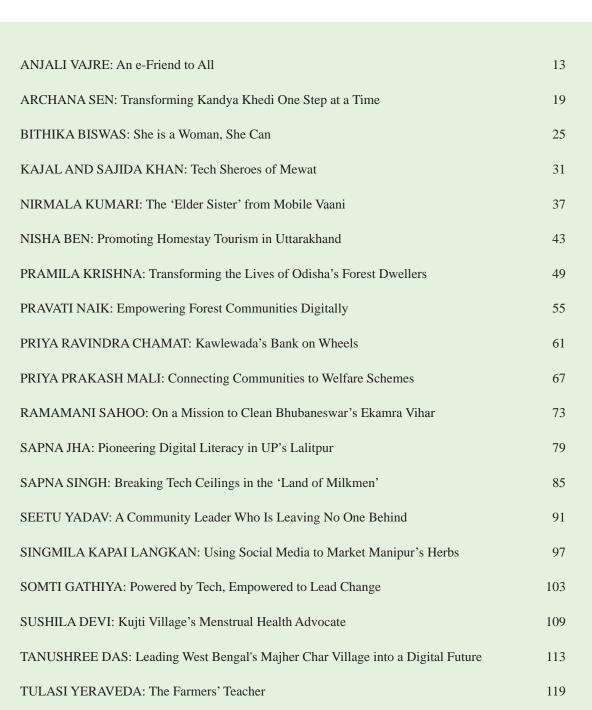Anirban Sarma
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EDITORS' NOTE

As the COVID-19 crisis wanes, India and Indians are embracing the slivers of normalcy with vigour and enthusiasm. The new normal of living with the virus and working through its waves and surges has become a way of life. Green shoots of post-pandemic recovery, growth, and optimism have begun to take root. Alongside, a silent revolution is underway as well, marked by several dots that are not readily connected—a digital India has emerged even as we battled the global affliction.

By 2026, India will have 1 billion smartphone users, with a major push in demand originating from rural areas. The nation's strides towards fiberising its villages are providing a massive boost to Internet use, and helping mainstream new skills and opportunities involving Internet-enabled devices and platforms.

Women are at the heart of this upsurge in the demand for information and communication technologies (ICTs). The percentage of women in India who have a mobile phone that they use themselves, unsupervised by family, has increased from 45.9 percent to 54 percent over the past four years, with a clear correlation emerging between women's adoption of ICTs and their access to better education and livelihood opportunities, and health and financial services. Two policy targets could advance these positive trends: mobile ownership and access must reach the yet uncovered universe of 46 percent of Indian women; and women's independent use of family-owned ICTs must be increased and normalised through community-focused interventions.

The same four-year period has also seen extraordinary growth—from 53 percent to nearly 80 percent—in bank accounts held and operated independently by women. Indeed, the link between women's mobile ownership and financial inclusion is robust, with over 22.5 percent of women in India using their mobile phones for financial transactions. Crucially, women's self-empowerment through technology, and the demand for digital devices, services, and infrastructure are forming a virtuous cycle. India could, therefore, set itself the bold goal of achieving at least 50 percent mobile use for financial transactions among women by 2030. This would catalyse women's access to banking and financial inclusion. It would also accelerate India's progress towards Target 5.b of the Sustainable Development Goals (SDGs)—enhancing ICT use to promote women's empowerment—an area where India currently sees itself as an 'aspirant'.

The stories behind the data tend to remain underexplored and obscure. Little is known of the women across vast swathes of rural and peri-urban India who have made it their mission to lead their communities into a new digital future. Virtually nothing is known of the odds they have overcome to defy tradition, acquire digital literacy and competencies, build their communities' trust, and then transform lives with technology.

Aspirations, Access & Agency tells the stories of women leaders who have emerged as agents of technological change and socioeconomic inclusion and are using ICTs to help their communities build pathways to better futures. Each story narrates a woman's leadership journey and explores how she evolved as a digital enabler—banking the unbanked, connecting people to essential e-services, facilitating access to welfare schemes and benefits at the last mile, promoting entrepreneurship by helping build digital marketplaces, using tech to strengthen livelihoods, advocating for e-health, and much more. This compendium aims to raise awareness about these women's exemplary work. It also seeks to demonstrate the transformational impact ICTs could have on communities and governance.

Well-crafted policies allow personal aspirations to bloom. The lived experiences of these women show the importance of policy initiatives that support digital literacy and skilling, such as the National Digital Literacy Mission, the National Skill Development Mission, and the recently launched Digital Ecosystem for Skilling and Livelihood. Equally, communities must be sensitised about welfare schemes that could change lives and how digital tools can be used to access benefits. The women's stories included here demonstrate how successful policy implementation and access to technology can drive change.

The evolution of mobile phones has shaped women's trajectories of empowerment. Most of the women profiled here first used rudimentary keypad phones owned by their families, which permitted calls and messages only. Many families then graduated to feature phones, which included a simple graphic interface, basic bandwidth for Internet services, and limited applications and multimedia capabilities. These devices nonetheless expanded the women's understanding of the possibilities afforded by ICTs. But it is the smartphone—advanced mobile phones akin to microcomputers—that has truly liberated them and helped them become the change agents they are today.

AS THE STORIES IN THIS VOLUME TRAVERSE THE LENGTH AND BREADTH OF INDIA, SEVEN LESSONS EMERGE.

1. Promote digital financial literacy and the use of ICTs to access banking and financial services

Across geographies, communities have repeatedly expressed their desire to avail of online banking and financial e-services. Using smartphones to access funds, conduct instant transactions, and ultimately benefit from financial inclusion is arguably the area in which people's interest is most widespread. Imparting digital financial literacy, training communities to operate bank accounts online, and promoting the use of digital payment systems are thus matters of priority. The efforts of women like Tanushree Das from West Bengal who is popularising e-banking in her district, and Anjali Vajre and Priya Ravindra Chamat from Maharashtra who are bringing banking knowledge, products, and services to their communities must be vigorously supported and replicated.

2. Leverage self-help groups to advocate for ICT use

Self-help groups (SHGs) are particularly well placed to sensitise communities about ICT-enabled self-empowerment. As several stories show, when SHG members purchase smartphones themselves, there is an almost immediate impact on a group's productivity, capacity to offer microcredit, and ability to contribute more effectively to community development activities. These experiences and the pre-existing social capital of SHGs make them effective advocates for ICT use. Nirmala, an SHG member from Bihar, uses an Interactive Voice Response System (IVRS) to receive essential development information that supports her work, which – at her insistence – most people in her community have now routinely begun to use. And in Uttar Pradesh, Sapna, also with an SHG, has convinced her community to use a mobile app to pay their electric bills, as she goes from house to house on behalf of the state electric corporation.

3. Upscale initiatives to connect communities with welfare schemes, benefits, and public services

Connecting citizens to a wide range of digital public services, and the direct online transfer of benefits, have been among the most far-reaching consequences of India's ICT revolution. This is also a thematic strand that runs prominently through the compendium. As part of the Haqdarshak service in Maharashtra, for instance, Priya Prakash Mali is using a mobile app to match citizens with an array of government benefits they are eligible for and then helping them receive those entitlements digitally. Thanks to her, a large section of her community has now been issued e-Shram cards, which bring informal workers within the ambit of social protection, and are connected to the Aayushman Bharat scheme that entitles them to health coverage, timely treatment, and online access to their health records. In Odisha, on the other hand, Ramamani Sahoo has evolved a novel community-based monitoring system to ensure the smooth delivery of public services. With her smartphone and a system of QR codes, she is registering citizens' requests to the municipality to have their septic tanks cleaned, thus increasing community ownership around issues of water, sanitation and hygiene. More tech-based initiatives that establish a last-mile link between welfare actions and their intended beneficiaries must be set up, and existing programmes enhanced.

4. Use technology to spur entrepreneurship and generate livelihoods

Around India, ICTs are impacting entrepreneurship and livelihoods in unprecedented ways. The one-to-one correspondence between mobile ownership and economic empowerment can often be striking. In Manipur, Singmila Kapai Langkan has created a flourishing virtual marketplace for the handcrafted organic soaps she makes from rare local herbs. Her use of social media for marketing and distribution is inspiring a new generation of tech-savvy, aspiring young women entrepreneurs. And far north, in picturesque Uttarakhand, Nisha Ben has built a career in tourism using ICTs to run local homestays and is now helping other women like herself enter the sector.

5. Integrate technology use into public healthcare systems

Several women profiled here have used tech to strengthen healthcare systems. At the height of the pandemic, they supported vaccination drives by registering their communities for COVID-19 inoculations on the CoWin digital platform. Some went further. Archana Sen, an ASHA worker in Madhya Pradesh has conducted mobile campaigns on COVID-19-appropriate behaviour; and Kajal and Sajida Khan, two young women from Haryana, are using an integrated mobile service for pregnant women to access healthcare services in low-resource settings. Across the country, the use of health-based apps and platforms has gained momentum during the pandemic. This momentum must be preserved, best practices like the ones showcased must reach a broader population set, and every effort should be made to integrate technology with healthcare systems.

6. Create cadres of community-based technology evangelists and 'sororities of skilling'

The impact of women's tech-based interventions demonstrates conclusively that cadres of grassroots technology evangelists must be built to promote ICTs and offer communities the training they need. This will require capacity-building on a national scale. Mechanisms evolved by leaders like Sapna, such as collectives created specifically to impart digital skills and insights, ought to be emulated. These 'sororities of skilling' could prove invaluable for expanding ICT use at the community level.
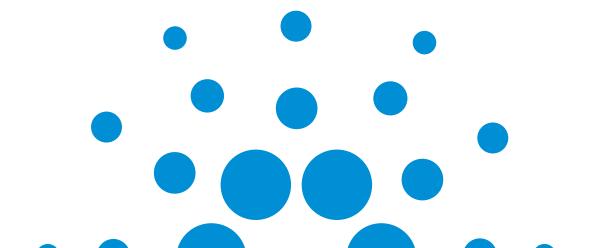
7. Change mindsets and counter stigmas around women's use of ICTs

As several women interviewed for this volume have observed, their use of mobile phones has often caused familial discord and dilemmas. Bithika Biswas, an SHG worker from West Bengal, points out that her own family asked her repeatedly why her phone had men's contact numbers stored on it. Deep-rooted stigmas continue to impede women's use of technology. It is only through wide-ranging efforts to educate communities about the impact of women leaders and the benefits of technology, that these retrograde attitudes will be altered. If a progressive, inclusive society is to be built, women must lead and shape the new moment.

The interventions that this series describes are replicable in other contexts. The methods used by a particular leader, and the lessons learned from her work, could easily be applied elsewhere. The book could, therefore, act as a manual for development practitioners and policymakers alike. It also launches an effort to systematically catalogue creative tech interventions that address communities in developing and emerging nations. Target 9.c of the SDGs urges the global community to "increase access to information and communications technology, and strive to provide universal and affordable access to the Internet". *Aspirations, Access & Agency* demonstrates the positive effects of doing so.

For Reliance Foundation and Observer Research Foundation, this book is the second in a series on women leaders who are transforming their milieu. The publishers will continue to invite narratives about women-led change from partners around the world, promote research into women's empowerment, and lean in to build platforms that celebrate women's leadership. These stories of grit and success must be brought to the widest possible audience, and the publishers remain committed to doing so.

Jayashree B, Anirban Sarma, Vanita Sharma, and Shoba Suri

STORIES

ANJALI VAJRE
An e-Friend to All

As dawn breaks with ebullient rooster calls, one can see the most picturesque ranges of the Western Ghats from every hamlet of Pathardi, a quaint village located in the Jawhar block in Maharashtra's Palghar district. While the ranges make the district a popular tourist attraction, life in Pathardi seems far removed from this reality of abundance. In fact, it is these mountain ranges that make it difficult for Pathardi to receive any kind of digital connectivity.

Anjali Vajre, 29, an *e-Dost* (digital friend),[a] spends each day trying to gradually mitigate this challenge, which has prevented progress in her village. Lugging her pink backpack filled with numerous documents and her biometric device, she rides through the bumpy, narrow lanes of her village on a 'scooty' (as motor scooters are often called in India), dodging the roosters, their chicks, and unsupervised livestock. A few months ago, she would walk the two kilometres between her house and the community support centre. At the centre, scores of villagers wait for Anjali *tai* (elder sister in Marathi), as she is fondly called, to help with

their banking and utility services needs, one digitalsolution at a time. She is indeed the *dost* (friend) that villagers have come to trust to address their financial woes.

The internet connectivity issue is unique to this region of Maharashtra as the hills make it difficult for telecom operators to mount a tower. The nearest mobile tower is 12 kilometres from Pathardi in Jawhar town, and there are only a few spots in Pathardi where the villagers get some network to make phone calls.

There is limited digital literacy within the community, but this is also because it seemed irrelevant in the absence of regular internet facilities. To perform basic financial transactions and pay utility bills, villagers had to travel to Jawhar in a jeep filled beyond capacity. This journey would take an entire day, and they would have to spend at least INR 50 while also missing their work and losing wages for that day. The primary means of livelihood in the village is agriculture and most work on someone else's land as daily labourers.

Technological empowerment of women (aged 15-49 years) in Maharashtra	
Women who have a mobile phone that they themselves use	54.8%
Among women who have a mobile phone, those who can read SMS messages	82.9%
Women who use a mobile phone for financial transactions	29.8%
Women who have ever used the Internet	38.0%

Source: National Family Health Survey (NFHS-5), 2019–21[1]

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[a] E-Dosts are typically women of the village who provide various digital services as per the community's needs. The term was jointly coined by IIT-Bombay and BAIF Development Research Foundation.

Anjali's aspiration to help her community, especially other women, stems from her childhood experiences. She studied at the local zila *parishad*[b] school until Class 7 and then a girl's *ashramshala*[c] to complete Class 10. But as an extremely curious and observant child, Anjali noticed that women would not participate in the village affairs and had no way of expressing themselves in times of need. At 18, she got married and moved to Aina village (7 kms from Pathardi) with her husband. However, five years later, in 2017, her husband suddenly fell ill and passed away within three days of being hospitalised. Anjali was now solely responsible for raising her toddler, Harish, without any means of livelihood. Although her husband's family asked her to stay with them, Anjali and her son soon returned to her parents' house in Pathardi.

This was a big societal and economic shock to her parents, who were struggling to sustain themselves. To help, Anjali decided to attend a community meeting by BAIF Development Research Foundation (BAIF) and become a community resource person (CRP)[d] for the organisation. It was after this that she bought her first smartphone. As a CRP, Anjali would often convene meetings on community-building and strengthening self-help groups (SHGs)[e] where she would request women to join, but did not have much success. "It seemed like they never had the time to attend meetings. The men would also hesitate and would not want the woman of the house to participate in such

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[b] Zilla parishad is the district-level governance system in India and oversees administration of the district's rural areas.

[c] Ashramshalas are residential schools for scheduled caste and scheduled tribe communities in India.

[d] Community resource persons are members of the community who are employed by developmental organisations to disseminate information and teach people of a community particular activities.

[e] Self-help groups are a community of 12-25 rural women who become financial intermediaries where each member saves certain amount of small money and lend it to the members in need. The Reserve Bank of India ensures that banks provide loans to them for smaller interest rates, without any collateral guarantees.

meetings," she recalls. This always bothered Anjali, who realised that women need to be empowered so that they do not have to seek permissions from men to work for their own causes.

While being a CRP allowed Anjali to help the community in many developmental and social issues (such as bringing women together, identifying SHGs' needs, and connecting them with government schemes), it did not help her earn a livelihood as the salary was nominal. Fortunately, at this juncture, the Indian Institute of Technology, Bombay (IIT-B)[f] and BAIF collaborated to bring a SIM card-based cellular router to Pathardi to provide strong internet connectivity at the support centre and for the community to grow their internet network based on their needs and requirements. Anjali was chosen as the first banking correspondent, or e-Dost, as she was already an active CRP and was well known in the community. e-Dosts provide services in lieu of a small fee, providing livelihood option to the worker. Anjali was provided with a tablet and trained by IIT-Bombay for months on various digital aspects, including paying bills, operating biometric devices, registering people for Aadhaar cards, and performing banking transactions. Anjali says the training helped her immensely. "The most difficult of it was to learn the banking services as it involves transacting with other people's money and I would be nervous at first."

As an e-Dost, she charges a nominal commission for each transaction (INR 5 for every INR 100), depending on the value of the transaction. She now even helps people register for e-Shram cards, which is a central government scheme that ensures portability of social security and welfare benefits to migrant and construction workers for registered users.

According to a May 2022 study by Neilsen,[2] rural India has only 32 percent active internet users, as against 67 percent in the urban areas. Within that, only about 34 percent women have access to internet in rural India. Consequently, a greater number of urban residents avails of online banking and digital payments than those in rural areas. While access to the internet is a primary issue, a June 2021 report stated that a lack of digital literacy in rural areas is also a cause for the urban-rural divide in internet use.[3]

For Anjali, the beginning as an e-Dost was not without difficulties. For instance, many people in her community did not have mobiles and therefore could not register for online banking services. To overcome this barrier, Anjali would often input her own mobile number to access the services. But many people remained skeptical and would ask for receipts. With time, however, she was able to gain their trust by showing them the messages she received on her phone. "When I had too many cash withdrawals, I would be scared to walk back from Pathardi to Ramkhind as I would

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[f] IIT-Bombay is India's premier technology and research institute and ranks high as one of the top institutes in the world by the QS World University Rankings. It has also been identified by the Indian government as an institute of national importance.

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carry more than INR 50,000 in cash," recalls Anjali. Ramkhind is on the way to her home in Pathardi and surrounded by forests for the most part. Notably, this saved the village folk from travelling 12 kms to the city of Jawhar to withdraw cash or avail other banking related services.

Anjali's role as an e-Dost became most essential during the COVID-19 pandemic when movement was restricted, and people could not go to the banks. With help from BAIF (the NGO), she got an e-pass so she could travel to Jawhar to assist people. "During the pandemic, many people needed emergency cash for medical reasons, and I felt glad that I could help," she recalls.

Anjali now earns about INR 4,000 per month, and feels empowered as she is able to help her parents and send her son Harish to school. She has also bought a scooty with her earnings and with some help from her parents to enable her

to visit the bank in Jawhar and withdraw money for people as and when required.

While she gained digital literacy through various facilitating agencies, Anjali's curiosity has helped her learn and teach more. She has learnt about various government schemes available to the different categories of people, such as the widow pension scheme and e-Shram. She teaches people in the community the basics of using smartphones. She now also buys clothes and household goods online, and even teaches other women in Pathardi to use apps to shop online. Earlier, as a CRP, Anjali would often talk to women about agriculture, what vegetables to grow, and how to form SHGs, but most were not interested in this information. Since becoming an e-Dost, she has started discussing the various aspects of her tasks, including various government schemes, how to make financial transactions, how to save money, and everything else that one can do with access to the internet. The women are now far more

Figure 1: Reasons stated by Indians for not accessing internet (All India)

All India	Reason
Nothing interesting for me is available on internet	12%
Too time consuming - don't have enough time	14%
I do not own devices (like computer, mobile, etc) at my home	15%
Internet is very confusing to me	16%
I am not allowed to access the internet	17%
I cannot afford internet connection - expensive for me	19%
I am not interested in accessing internet	21%
I am not aware of the benefits of the internet	22%
I do not own internet connection at home	23%
Too difficult to understand and use	24%

Source: CNBCTV18[4]

interested, encouraged, and willing to participate in community meetings.

Notably, she also trains women to become e-Dosts across India. So far, she has trained 73 e-Dosts across India, 15 of whom work in and around Jawhar and have impacted about 3,000 people. These 15 women have now formed an SHG and have created a fund out of their savings. If any one of them requires money, they can take a loan from this fund. This makes Anjali very happy as she truly believes that women should be empowered to become independent and earn for themselves.

Anjali has received recognition from the government for her work (the district collector had visited to observe and appreciate her work in December 2019).

Now, she wishes for strong internet connectivity throughout her village and not just near the tower. "It would make our lives much easier if we could perform the banking services even from our homes," she says. Meanwhile, through the power of technology, and as a true e-Dost to all, she plans to continue educating and training many women like her who could help make these services accessible to many more people across the district.

Antara Sengupta

KEY LESSONS

- Innovative technology solutions can fill the gap in access to internet and digital banking services.

- More women community leaders should be encouraged to become master trainers on digital literacy and services to have wider impact and reach.

- Given the high opportunity cost in accessing physical banking services in rural India, more women leaders should be trained to educate communities about accessing these services online.

NOTES

[1] National Family Health Survey (NFHS-5), 2019–21, International Institute for Population Sciences (IIPS), Volume 1, March 2022, http://rchiips.org/nfhs/NFHS-5Reports/NFHS-5_INDIA_REPORT.pdf

[2] Nielsen's Bharat 2.0 Study reveals a 45% growth in Active Internet Users in rural India since 2019," Neilsen News Center, May 5, 2022, https://www.nielsen.com/news-center/2022/nielsens-bharat-2-0-study-reveals-a-45-growth-in-active-internet-users-in-rural-india-since-2019/

[3] Shilpa Ranipeta, "There are over 700 million internet users in India — and just as many who don't use it," CNBCTV18, July 28, 2022, https://www.cnbctv18.com/technology/iamai-kantar-report-says-rural-india-accounts-for-more-than-half-the-internet-users-in-country-14283262.htm

[4] Ranipeta, "There are over 700 million internet users in India — and just as many who don't use it,"

ARCHANA SEN
Transforming Kandya Khedi One Step at a Time

A dedicated community leader engaged in the door-to-door advocacy and implementation of multiple welfare schemes, Archana Sen is a well-known face in her village, Kandhya Khedi in Madhya Pradesh's Guna district. She describes the need for public health services as a major priority in Guna, and a key factor that motivated her to become an Accredited Social Health Activist (ASHA)[a] in 2017. Two years later, she launched a small, well-intentioned battle against the local gas agency for their ineffective execution of the *Pradhan Mantri Ujjwala Yojana*[b] which further cemented her position as a community leader. It was due to these stints that Archana was chosen to be the digital *sarthak* (aide) in her village, as part of the *Digital Sarthak* programme, a national digital entrepreneurship and empowerment initiative by the Digital Empowerment Foundation supported by USAID and DAI.

The second of two daughters of a small salon owner in Dhanora village in Wardha district in Maharasthra, Archana describes her beginnings as humble. "The economic condition of our household was not very stable but we managed with whatever little we had," she says. Her father was passionate about getting his daughters educated, a trait both women have inherited. "I had to cover long distances in my final years of education as the bus fares were hard to pay given our modest earnings, but I decided to travel both ways on my bicycle to finish my senior secondary education before I got married," she recalls. Archana finished her undergraduate degree in humanities after her marriage in 2006.

"The environment in Kandhya Khedi is very different from Dhanora. I noticed a strong ostracisation of people from lower castes, and very apparent gender segregation in Kandhya Khedi. Women here are not as educated as I had seen back in my village and even if they were, they exhibited far less agency in their lives. Health was not a priority for families, something that I have helped transform during my tenure as an ASHA worker," she says with some pride.

Technological empowerment of women (aged 15-49 years) in Madhya Pradesh	
Women who have a mobile phone that they themselves use	38.5%
Among women who have a mobile phone, those who can read SMS messages	74.3%
Women who use a mobile phone for financial transactions	23.3%
Women who have ever used the Internet	26.9%

Source: National Family Health Survey, 2019-21[1]

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[a] ASHAs are trained female community health activists assigned to every village across India. They act as intermediaries between the public health system and the community.

[b] A flagship government scheme that aims to make clean cooking fuel such as LPG available to rural and deprived households which were otherwise using traditional cooking fuels such as firewood, coal, and cow-dung cakes.

Joining the Digital Sarthak programme has proven to be transformational for Archana and the community she serves. The objective of the programme is to digitally upskill women in underserved regions and train them to engage in a hands-on manner with digital solutions at the community level. The initiative is currently running in 25 districts across 13 Indian states, and is optimising the use of digital wallets, OTT messaging platforms, and digital markets for women entrepreneurs.

Elaborating on her journey as a digital sarthak, Archana says that she has come a long way since when she only knew how to operate a keypad phone to make or receive calls. "It wasn't until I was identified as a digital sarthaks that I came to own a mobile phone and recognised the advantages of having an Internet connection." It was Archana's mentor Abhinav Pandey from the Digital Empowerment Foundation (DEF) who helped her transition from using a feature phone to acquiring the smartphone with which she began conducting training sessions as a digital sarthak. He is DEF's district coordinator who trains and mentors all digital sarthaks so that they are able to serve their communities better. His mentorship has helped her steadily build the management capacities of local self-help groups (SHGs) using smartphones and communication through Whatsapp groups and increase the geographical coverage of SHGs' activities, such as offering microcredit and helping launch livelihoods. Today, Archana fondly

calls Dhanora her *'janm bhumi'* (birthplace) while referring to Kandhya Khedi as her *'karm bhumi'* (workplace).

When the COVID-19 pandemic emerged in March 2020, Archana helped people order groceries online amidst the lockdowns as the village was completely paralysed and no supplies were reaching local shops, leaving people with no provisions. As an ASHA worker, she helped those who were quarantined to speak to their families through video calls using her phone. She has run mobile campaigns on the importance of washing hands and social distancing and conducted door-to-door vaccination drives in her village, mobilising her peers using her smartphone. In her capacity as an ASHA worker, Archana has been at the frontline, battling the numerous challenges that emerged during and because of the pandemic, and has used her phone to coordinate with the local administration and civil society organisations for the provision of hand sanitisers, PPE kits, and masks. With the INR 1,000 compensation offered to ASHA workers for special duties during the pandemic,[2] Archana's work has sometimes been difficult. But she has forged on and has been recognised by her ward for her tireless community service as a *'corona yoddha'* (corona warrior), an accolade she holds dear.

As a digital sarthak, Archana has identified and trained 100 women entrepreneurs in Kandhya Khedi and other neighbouring villages to scale up their businesses using digital tools. She trains entrepreneurs in digital and financial literacy, media literacy, using smartphones for business and social media for marketing. She has also informed the community about the Prime Minister's Wi-Fi

Access Network Interface scheme that aims to increase Wi-Fi access across India.[3] "As a result of my interventions people have begun taking an active interest in online functions and services beyond their own business. They are keen to learn more about e-services, and government schemes and benefits, and have in several cases also begun to access them with my help," she says.

Another major area of activity for Archana is conducting workshops on using digital wallets for contactless transactions during the COVID-19 pandemic. "Online transactions are gradually gaining popularity. More and more community members are doing it now and more often than before, she says. This is in line with the overall trend across India, which saw 48 billion real-time digital payment transactions in 2021,[4] the highest in the world.

Archana notes that the use of mobile phones by women is often stigmatised. "Smartphones and the Internet are seen as instruments of pollution in the hands of impressionable young girls." This, coupled with issues of access, could be why only 20 percent of women residing in rural Madhya Pradesh have used the Internet ever (see Figure 1).[5] Still, women like Archana are role models for their community, especially women. Since becoming a digital sarthak, Archana has worked hard to change these perceptions. "There was a general distrust of letting women interact with phones, let alone the Internet, and helping community members overcome this mindset is one of my first steps."

But convincing women to start using phones is a challenge, she says. "While a lot of people are beginning to change their minds about technology, it was only during the lockdowns that they truly

understood the importance of mobile phones and the Internet. With a phone you can do anything. There are no boundaries to the business opportunities one can access," Archan says emphatically. As an example, she notes that many women engaged in the tailoring business now have access to a larger customer base. She has also trained them to use YouTube for new ideas on designs and styles.

In addition to the training and advocacy work, Archana also runs a community project centre in the village, which she set up with the support of USAID and DEF. It is the only such centre in her village and the surrounding area. "Our centre is equipped with a smartphone, a laptop and a printer, and I am helping community members use the Internet to avail of a wide range of public services and government benefits," she says proudly. The centre has emerged as a hub of last-mile service delivery for the inhabitants of Kandhya Khedi, and with Archana at the helm, the village is slowly and steadily making its way into a digital age.
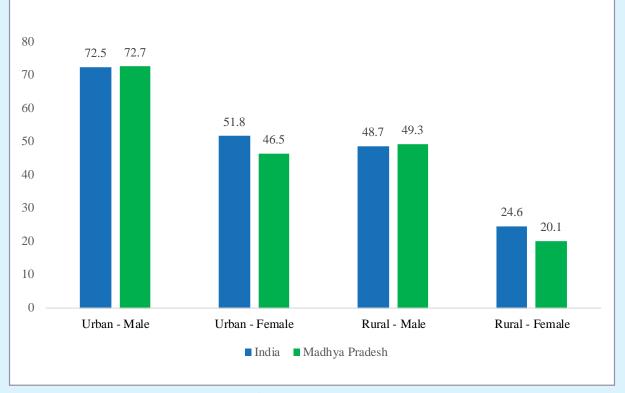
Avni Arora

Figure 1: Percentage of individuals (Urban-Rural) in India and Madhya Pradesh who have ever used the internet as of 2021

Source: National Family Health Survey, 2019-21[6]

KEY LESSONS

• Helping optimise the use of digital wallets, online payments and messaging platforms, and sharing best practices and lessons through video-based digital platforms could support the post-pandemic recovery of small-scale businesses and local women entrepreneurs.

• Well-equipped digital community centres headed by trained personnel could play a crucial role in motivating community members to acquire digital literacy, familiarise themselves with online public services, and start using these services independently.

NOTES

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BITHIKA BISWAS
She is a Woman, She Can

Thirty-year-old Bithika Biswas's early experiences in a small village (Bhaduri in West Bengal's Nadia district, which 4,558 people call home[1]) have shaped her into who she is today. Growing up, her family of nine (parents and seven children) was entirely dependent on the earnings of her father, a daily wage farm worker. Given his meagre wages, the family ate one meal on a regular day, two on a good day, and three on a rare day. Bithika's experience reflects that of India's underprivileged and marginalised communities, for whom food insecurity continues to be a lived reality.[2] The 2019-21 National Family Health Survey reported that 7.7 percent of Indian children aged five or less were severely wasted, 19.3 percent were wasted, and 35.3 percent were stunted.[a,3]

The family's circumstances forced them to make tough choices, and education was a casualty. "I was good at studies but could not continue due to poverty. I studied till Class 8, and was married at 16 as my father could no longer afford to feed us all. Growing up, I faced a lot of hardships, but perhaps my greatest sorrow is that I could not continue my education," Bithika says.

Her husband worked in a hotel in Mumbai, Maharashtra, and left for the city soon after their wedding. With roughly 2,000 km separating the couple and no money to buy personal mobile devices, they would communicate through letters, or a carefully planned operation that involved an STD booth,[b] a store that had a landline and two rupees at both ends, one to make the call and the other to receive it. This changed in 2016 when her husband bought a phone, and in 2018, Bithika became the proud owner of a new second-hand Android smartphone purchased for INR 3,500, at a time when all-new entry-level smartphones cost around INR 7,000. "When I first got my phone, I knew nothing about it. But when I began to use it, I realised how much I needed it," she remembers.

Bithika's smartphone has served her for much more than just connecting with her family. In 2012, she created a self-help group (SHG).[c] This was not an easy task as every member had to contribute INR 250 as joining fees to be used as the first month of savings needed to open a bank account and to buy any necessary material for the SHG. Although she did not have the required money, she took a loan

Technological empowerment of women (aged 15-49 years) in West Bengal	
Women who have a mobile phone that they themselves use	50.1%
Among women who have a mobile phone, those who can read SMS messages	64.0%
Women who use a mobile phone for financial transactions	12.8%
Women who have ever used the Internet	25.5%

Source: National Family Health Survey, 2019-21[4]

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[a] According to the World Health Organization, wasting is defined as low weight for height, and stunting as low height for age. Wasting in severe circumstances could lead to death, and stunting could prevent children from reaching their cognitive and physical potential.
[b] STD, or Standard Trunk Dialing, booths were a network of coin operated pay phones installed in public spaces in India. This was predominantly the main way many Indians communicated with those in other cities/towns/villages. With the wide penetration of mobile phones in the world today, these are now relics of the past.

from another SHG on the condition that she would repay it in a year and handle the accounting books/ledger of that SHG for the year free of charge. Both terms were met.

Having experienced such hardships, Bithika was keen to protect others from misfortune. As the founder member of the SHG, she wanted to use her smartphone to encourage community members to become self-reliant, just as she had done for herself. She learnt to use her phone with a Bengali language keyboard through assistance from Reliance Foundation. She collected the phone numbers of smartphone users in her SHG to create a Whatsapp group. She says, "Our area is predominantly agriculture-dependent with power looms being introduced very recently.[d] Almost everyone used to face financial hardship, and to tide over, they would take loans and become bonded labourers.

I aimed to save them from this, so once I got the smartphone, I started sharing information in our group." Bithika was also added to information dissemination groups created by Reliance Foundation and became a node through which information about the Foundation's programmes, schemes, and opportunities was shared.

Through smartphones, communication chains were built that democratised access to information. For instance, the panchayat[e] Whatsapp group, which included all residents who owned smartphones in the village, would put out information about necessary government registrations for things like ration (state sponsored food grains), and work opportunities with details like due dates and ancillary documents required, and when job cards would be made available. The smartphones also allowed users in the

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[e] Self-help groups (SHGs) are an affinity-based group of 10-20 people, usually women from similar social and economic backgrounds, who collect money from those who can contribute and give the funds to members in need. Members may also save contributions and begin lending funds back to the SHG's members themselves or to others in a village for a particular purpose. Many SHGs are lined with banks and can deliver micro-credit.

[d] Bithika and other weavers of the area produce Tant fabrics, which are native to West Bengal.

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village to conduct video meetings with animal husbandry and agricultural experts, and on the work of SHGs in sessions facilitated by organisations like Reliance Foundation.

While the phone was of great help, it initially caused a lot of friction. "Many questioned the need for a smartphone, saying that a basic phone would have sufficed. Many asked, 'Why does the daughter-in-law of the house need a Facebook account?'," Bithika says. Many SHG members shared phones with their husbands (there remains a critical gender gap in access to technology in many parts of India),[5] who often took issue with the fact that the phones would have other men's numbers stored on them. But these challenges were short-lived. Today, her mother-in-law quickly comes to the rescue whenever Bithika's child takes her phone to play, saying that it is a crucial work device for Bithika and should not be damaged. Her husband knows that her late-night calls are for the community's good. Bithika has changed mindsets, not just within the four walls of her home but also in the village. "Their thoughts have changed. Now they know that phones are not evil, and that they can be used for good," just as it was during the COVID-19 pandemic.

The panchayat Whatsapp group became the hub of information on COVID-19, and meetings were held through phone and video calls. The phones were also used to coordinate information and on-ground action, as well as with the block development office on the number of cases and quarantine protocols. Information on loans taken from SHGs (which could no longer meet in person), short-term loans offered by other organisations, and financial aid provided by the state and central governments were all available to the group members on their phones.

During the pandemic, Bithika launched a free campaign to bring as many people as possible onto the CoWIN platform to register them for vaccines, even as some others in the community tried to charge fees to provide the same service. Bithika is quick to point out that she wants to help others simply because she can, and not to earn a living. Of all her work, weaving is the only thing she does for monetary purposes. Information collection and dissemination, her work with the SHGs and cooperatives, and pandemic management was all without renumeration and only for societal benefit. She says her childhood experiences of sharing a school uniform with her sister (one wearing it in the morning and the other in the afternoon) and seeing other children eat food they brought from home during their lunch breaks, made her decide that she would break free of the shackles that often limit women, a spirit she took with her to her marital home. Instead of working in the fields, she took to the loom. And after seeing her mother-in-law rely on the local money lender for loans and pay high interest rates, Bithika decided to only seek assistance from SHGs, which offer kinder interest rates, easier repayment processes, and aims to benefit the borrower and not push them into financial crisis.

Bithika's motto is simple—she will do it, or she will get it done. She has not just nurtured her own SHG for the past 10 years, but today she leads a cooperative of over 300 SHGs in the region. Bithika now hopes to learn to use a computer, seeing it as the next step in building self-sufficiency and enabling community empowerment. Technology has indeed been Bithika's greatest asset in her campaign for a better future. It has connected and empowered her. It has freed her from the limitations of time,

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[e] The panchayat, composed of the words *panch* (five) and *ayat* (assembly), is the group of five that govern at the village level in India. The Panchayat Whatsapp Group was the medium through which the local administration (Panchayat) could communicate and engage with the residents.

distance, and language. By educating community members on SHG loans and saving them from the clutches of moneylenders, making them aware of options for financial support during the pandemic, and improving the quality of animal husbandry and farming, Bithika has enabled progress in her society through the use of technology. "I have to prove that even though we are women, we can," she says emphatically. Having proved that she can has only encouraged Bithika onward.
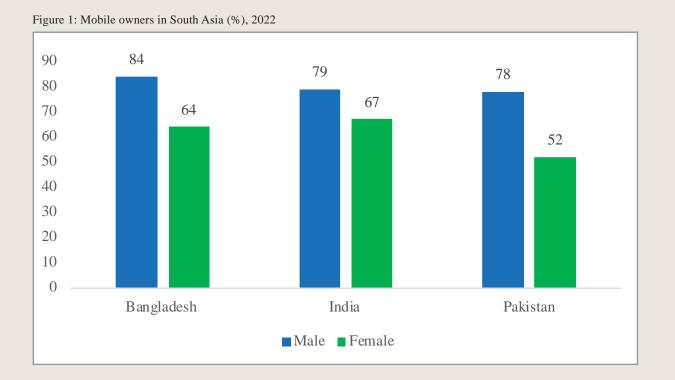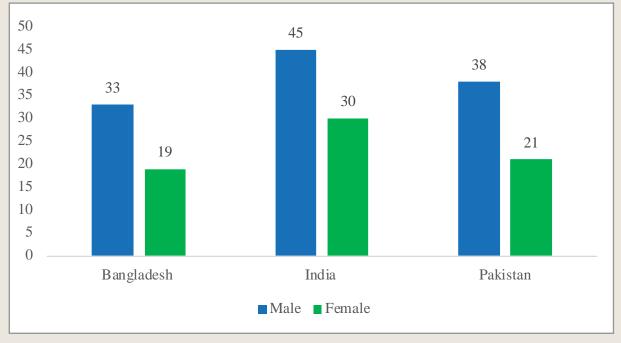
Sitara Srinivas

Figure 1: Mobile owners in South Asia (%), 2022

Figure 2: Mobile Internet users in South Asia (%), 2022

Source: The Mobile Gender Gap Report 2022[6,7]

KEY LESSONS

- The use of chat groups in messaging apps like Whatsapp for communication with and between self-help groups is revolutionising their operations and helping bring many more community members within the ambit of their community development activities.

- Familial understanding and support is the first step towards overcoming the social stigma often associated with women's independent use of mobile phones. Even as the penetration of mobile phones at the community level continues to rise, sensitisation programmes for men and older women should be conducted to alert them to the social and economic benefits of women's use of mobiles.

NOTES

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KAJAL AND SAJIDA KHAN
Tech Sheroes of Mewat

The Mewat district in Haryana has an age-old connection to folklore and poetry. Several historians point out that Mewat's documented history was sourced from folklores and songs by *Sufis* (Muslim religious poets) and saints. In present times, Kajal (23) and Sajida Khan (29), two young women from the district, are using this legacy of storytelling to help the community, but with a digital twist.

Kajal and Sajida spend the day visiting at least 15 houses in Punhana and Nagina blocks to showcase a story titled *'Pyaara Munna'* (adorable child) through a digital storytelling platform on mobiles. The story describes the various symptoms of childhood pneumonia and how it is important to seek treatment at a recognised healthcare centre rather than local village doctors. Since 2019, they have been helping the women of the community by providing them information and connecting them with health centres for maternal and child health, immunisation, family planning, and tuberculosis.

Mewat is currently classified as an 'aspirational district' by the Indian government. The aspirational districts programme was launched by the government in January 2018 to accelerate progress and transform the 112 most underdeveloped districts across the country.[1] Like several other underdeveloped districts that are part of this programme, Mewat ranks low in multidimensional poverty indicators, including progress in education, health, and basic infrastructure.

Sajida and Kajal seem to have risen above these odds to help the larger community. They are amongst the 44 percent of women in rural Harayana who have completed 10 or more years of schooling,[2] and are amongst the about 34 percent of women in rural Mewat who are literate.[3] Sajida and Kajal have completed their undergraduate degrees. Additionally, Sajida has finished a general nursing and midwifery (GNM) programme, while Kajal is currently enrolled in one.

Sajida recalls that there were only one or two other girls in her class in school. "In Mewat, when I was in school, girls were not allowed to leave home freely or even study. If not for my father, none of my six sisters would have been educated today," she says. Sajida's father, a driver with the local health department, defied the family and community to educate his daughters and even encouraged them to complete their undergraduate degrees.

Kajal, the oldest of four siblings (two sisters and a brother), came from a humble home. Her father is a daily wage labourer and her mother a housewife.

Technological empowerment of women (aged 15-49 years) in Haryana	
Women who have a mobile phone that they themselves use	50.4%
Among women who have a mobile phone, those who can read SMS messages	83.7%
Women who use a mobile phone for financial transactions	30.5%
Women who have ever used the Internet	48.4%

Source: National Family Health Survey (NFHS-5), 2019–21[4]

Even so, her parents encouraged her to study, "We would help our mother with household chores, but she would insist that we use our free time to study," she recalls.

Sajida and Kajal's families were friends, but the girls lost contact once they got married. But they met again in 2019 when both applied for vacancies at ZMQ, a not-for-profit organisation that develops technology-enabled tools to help marginalised communities with information.

While growing up, both girls' fathers owned basic mobile phones that they were seldom allowed to use. When Kajal started attending college, her father bought her a basic phone so she could keep him updated on her whereabouts. "He wanted to know if I am safe and coming back home in time," Kajal says. Sajida, on the other hand, could only buy a phone once she was married.

Sajida and Kajal were always bothered by the fact that women's activities and education were restricted. For instance, women were not allowed by the men of their families to participate in cultural programmes that involved outsiders. While her family was more progressive than others in the community, Sajida had to encounter these restrictive expectations in her marital home. Her husband and in-laws did not want her to work to earn any livelihood and even stopped her from studying further. She even applied to become a school teacher but her father-in-law refused to let her take up the job. But she was determined to use her education to help other women in the community. She even saved INR 100 on her own for the GNM course, and sought help from her father to cover the fee shortfall.

The ZMQ opportunity came as a blessing for both women in 2019. In 2012, ZMQ launched MIRA, an integrated mobile phone tool that provides critical information to pregnant women and enables them to access health services in low-resource settings. Stories on the MIRA channel are produced in the Mewati language and show fictitious characters in situations involving pregnant or new mothers. Young women are engaged as MIRA workers to visit households in the community and disseminate information about women's health and childcare.

But despite becoming a MIRA worker, things did not get any easier for Sajida. She remembers walking over two kilometres with her infant son

while on the field because her in-laws and husband were not supportive of her work. But she was determined to balance both household and fieldwork and continue to work for a cause she believes in. "I made it very clear to my family that I will not stop just because I am a woman," she says.

As for Kajal, who worked as a school teacher before becoming a MIRA worker, this was an opportunity to encourage other women to learn. "I saw an opportunity to teach more women, while also helping them with useful information," she says.

Sajida and Kajal were trained by ZMQ officials on various health concerns, including tuberculosis, pneumonia, malnutrition and neonatal care so that they disseminate the correct information and direct women to the appropriate healthcare centres. MIRA workers are also trained to screen high-risk pregnancies and register pregnant women and newborns on the app so they can be monitored and informed about immunisation schedules. The women also receive notifications on the app to make them aware of their healthcare schedules. "The app is connected to the local healthcare centres, so they also have a record the number of pregnant and lactating women and newborns," explains Kajal.

On the job, Kajal and Sajida inform women about immunisation, and health and nutrition, and show them videos on the MIRA channel to educate them about various healthcare issues and enable access to health services, all using mobile phones and tablets. Both agree that the women they visit listen to them as they feel a sense of connection with them. "I tell them stories about my own home, the struggles that I faced and then also use the stories in the MIRA channel," Sajida says.

But it is not always easy to convince women who do not believe in immunisation or postnatal healthcare. To handle such situations, Sajida goes beyond her job role to lead by example. She immunised her son in front of a group of women to show them that it was safe. "Some of them became our friends and we also create a social circle this way," she says. But if even such measures do not work, Sajida and Kajal turn to the community leaders, such as the *panchayat*[a] or a religious leader, or the men of the family.

Sajda says it was hard to find women in her community who are confident and willing to take up jobs as MIRA workers as societal and familial pressures mean that many women do not take up jobs outside the family business. "We went door to door, met their families and explained to them how the women can balance all the work, and can also earn for the families," she says. It is only through this that many women can be encouraged to become powerful local role models and inspire others to take on similar roles. But there are many challenges to overcome.

Sajida and Kajal have encouraged at least 10 women to become MIRA workers in the eight months since they joined, and have trained 50 others so far. They try to install the app on the phones of all the women that they come across, and even teach them how to use it. "The women we train are not always digitally literate. We begin with teaching them basic phone functions and then train them on the portal," Kajal says. Sajida and Kajal also share the stories on the app with *Anganwadi workers*[b] and ASHA workers,[c] who find it useful when performing their jobs.

Sajida and Kajal have both noticed that the community has started respecting them more since

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[a] Panchayats are village-level governing bodies in rural India.

[b] Anganwadis are childcare centres in rural India that provide primary healthcare, preschool education, and nutritious meals to children upto 3 years of age.
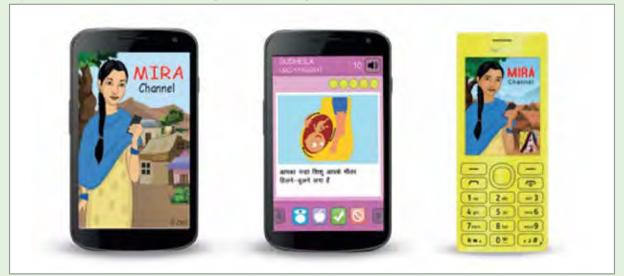
[c] Accredited Social Health Activists, or ASHAs, are trained female community health activists assigned to every village across India. They act as intermediaries between the public health system and the community.

they have become MIRA workers. "We were being shown as examples to younger girls and the women of the community ask us what their daughters should study so they can also work like us," says Kajal. Moreover, both were recognised by the chief medical officer of the local public health centre for their efforts in 2021 and were also featured 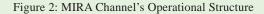in the local edition of Hindi newspapers *Amar Ujala* and *Dainik Jagran* for their work in tuberculosis awareness in March 2022.
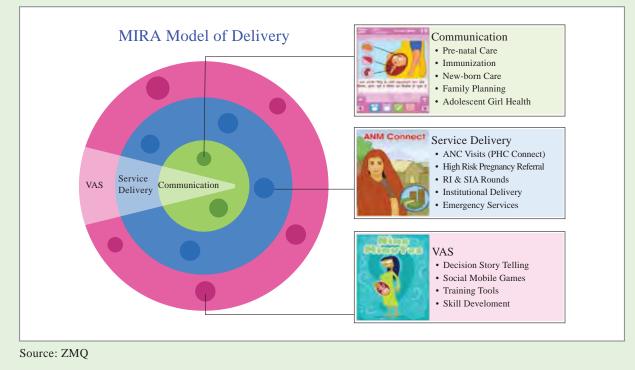
Technology, they both agree, has played a critical role in enhancing their efforts, especially during the COVID-19 pandemic. "We could only reach a limited number of women through field visits during the pandemic. But the women who had installed the app shared it further within their circles, and this

Figure 1:: The MIRA interface on a smartphone and feature phone

Source: ZMQ

Figure 2: MIRA Channel's Operational Structure

Source: ZMQ

way the reach was much higher," Sajida says. Once the lockdown eased, they sensitised women on COVID-19 protocols through storytelling on the app, and also showed the stories on big screens to 30-40 women at a time to initiate community discussions on good health and practices. "This is exciting for women who do not have mobiles of their own but can still be educated in matters that directly concerns them," says Sajida.

Lately, Kajal and Sajida have expanded their work from health to livelihoods and are providing basic and capacity-building training to women in their communities in becoming entrepreneurs. Here too, they use visual storytelling to help women understand the nuances of starting and sustaining small business ventures.

The day is especially satisfying as Sajida and Kajal have ensured another safe institutional delivery for a young mother in her community, who has been using the MIRA app through the course of her pregnancy to receive information. "We hope technology can empower more women like us to rise through the challenges and help others in the community," Kajal says with a smile.

Antara Sengupta

KEY LESSONS

- Digital modes of visual storytelling, such as through cartoons, posters and video stories in local languages, have proven effective in creating awareness, and should be trialed in areas with lower literacy levels.

- In locations where the community is not well informed on maternal and child healthcare, awareness campaigns through digital modes should be encouraged and institutionalised within public health centres.

- As mobile ownership among women is relatively low in rural areas, community theatres can be an effective way of introducing women to technology, and creating enthusiasm around literacy and education on relevant topics.

NOTES

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NIRMALA KUMARI
The 'Elder Sister' from Mobile Vaani

The night before her Class 10 exams in 1992-93, Nirmala Kumari's father gave her an ultimatum. "If you can pass the exams with your own effort and merit, only then should you go for it. Otherwise you will just add to my hassle of finding an Intermediate-pass boy for you," he had said.[a] Disheartened with her father's comment, but committed to her studies, Nirmala appeared for the exam and passed it with a second division. "I had come so far along with my dream of being educated that I could not just let it go. I went to the exam centre on my own, but I missed the first division only by a few marks," she remembers. Although her exemplary performance in school did not lead to any immediate change for her or at home, she remembers the incident as the first breakthrough in her lifelong journey of learning.

Nirmala, now 45, was born in Khapura village in Bihar's Nagar Nausa block, where she grew up with four sisters and two brothers. After contracting polio when she was only a year old, she was left with a disability in her left leg. Given her family's modest means, Nirmala and her siblings attended a local government school, but she was married soon after finishing her Class 10 examinations at the age of 16. This was not unusual or uncommon for her community. As the National Family Health Survey shows, the median age of first marriage for girls in Bihar is still 17 years.[1]

Her husband's family was from the Ariyama village in the same block. Nirmala describes the village as being "so backward, that no woman was ever allowed to read, work or go out". But her husband, now a veterinary practitioner, was a kind and understanding man, she says. He was aware of her aspirations to pursue higher education and was keen to support her. He gave her a mobile phone in 2018, and it was he who urged her to teach girls in the village by enrolling her to work as an *Anudeshika*[b] with a *Kishori Kendra* (adolescent centre). The centre sought to reintegrate girls aged six and above who had quit back into the schooling system.

At the centre, she taught about 50 girls, enabling 30 to reenrol in upper-primary and secondary school. This was her first taste of success in

Technological empowerment of women (aged 15-49 years) in Bihar	
Women who have a mobile phone that they themselves use	51.4%
Among women who have a mobile phone, those who can read SMS messages	49.3%
Women who use a mobile phone for financial transactions	10.4%
Women who have ever used the Internet	20.6%

Source: National Family Health Survey (NFHS-5), 2019–21[2]

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[a] Referring to the societal norm/trend wherein the man in an arranged marriage match must be older and have a higher level of education than the woman. In Nirmala's case, being 10th grade passed, implied that, her ideal partner should have at least passed the 12th grade (Intermediate).

[b] Anudeshika refers to an instructor/mentor

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community education and awareness campaigns. "Two of my girls have met with success and built careers for themselves," Nirmala says proudly. One of the girls works as auxiliary nurse/midwife and the other as an *anganwadi sevika* (childcare centre helper). Although Nirmala did not find a permanent teaching role in this capacity, the endeavour renewed her faith in higher education, and she went on to complete her high school education and an undergraduate degree in arts. Several factors, such as a higher number of schooling years and earning capacity, have been known to influence the adoption of mobile phones across India (see Figure 1).

Getting an undergraduate degree opened several doors for Nirmala. She worked as a Job Resource Person with the Bihar government's JEEViKA programme,[c]

[c] JEEViKA is the Bihar government's flagship rural poverty alleviation and livelihood promotion Mission. Mobile Vaani is a part of its several programmes focused on the said goal.

where she was responsible for youth skilling and employment until 2018. JEEViKA, was back then running a *Mobile Vaani* programme focused on women's health, ante-natal, pregnancy and neonatal care, which got Nirmala very interested. Inspired by the range of issues covered by *Mobile Vaani's* several platforms such as social protection schemes, women's health, civic rights, useful product information and self-expression, Nirmala decided to join the movement.[3] In 2019, she joined its *Meri Awaaz Meri Phehchan*[d] (MAMP, or 'My Voice, My Identity') platform and shifted her focus to enhancing mobile literacy among rural women while simultaneously inculcating a sense of ownership and responsibility toward using a phone.

Fostering and catalysing community development, she travelled to villages across the Chandi and Nagar Nausa blocks, interacting with self-help groups (SHGs), anganwadi sevikas, health workers, and women from village organisations to urge them to listen to the free service, which provides insights on local issues. Nirmala has conducted many demonstrations and sessions with women's groups to show them how to send and receive money, access online banking services, check their savings balance, update passbooks, engage in safe banking practices, apply for microcredit loans, use convenient digital repositories like DigiLocker, and bust myths about online financial transactions. "Now the women of my village no longer have to go to the local bank to check their account balance or transfer money. If they need to register for a competitive government exam they use DigiLocker. Younger women have routinely begun

to buy things on Amazon themselves. We use our phones to accomplish almost everything we need to do. This is a great advantage for us," she asserts.

Describing her conversations with the women in the villages, Nirmala portrays a picture of sisterhood where they share informative yet personal stories of transformation. Once the relationships solidified, it was easier to bring more women into the collectives. Nirmala's approach towards convincing women who are initially reluctant towards technology stems from her own experience of discovering empowerment. For instance, she previously only used the mobile phone to make and receive calls, but after being trained as a community reporter, she now uses mobile apps to pay electricity bills, book LPG cylinders, and send money to her son in college. "In the process of teaching and learning from each other, we have become self-reliant. Nowadays, if we feel that any woman in our village or community needs help, we readily give them our mobile numbers and ask them to call us if they encounter any difficulty at all," she says.

She recalls helping a distraught woman named Kanchan and her infant son escape from her violent husband by using information she had recently learnt from a *MAMP* episode. Nirmala led her peer volunteers in calling the women's helpline number (1091), and was able to secure immediate police intervention. The collective of these *Mobile Vaani* volunteers also stepped up to help discuss the adverse impact of domestic abuse before the *Panchayat*, thus encouraging the entire community to assist Kanchan to lead a dignified, abuse-free life.

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[d] Mobile Vaani (also locally popularised as Gram Vaani) is an IVR-based and community-led interactive social media and information dissemination platform. Users can dial in for free using certain short codes (different channels have different codes and MAMP is one of them) and receive content created by local volunteers by browsing through channels, or share their own message by recording audio messages. It can be accessed through a low-ended feature phone and is popular in rural districts of Bihar, Uttar Pradesh, Delhi, Madhya Pradesh, and Jharkhand.

Nirmala's willingness to help has gone a long way. As a result of her mobilisation, women now account for nearly one-third of attendance in the gram *sabha*.[e] She has popularised the uptake of public social protection schemes, such as widow allowance, *Janani Suraksha Yojana* (safe motherhood), *Nal Jal Yojana* (access to clean tap water), *Matru Vandana Yojana* (to reduce maternal and neonatal mortality), *Swachh Bharat Mission* (hygiene and sanitation), and the receipt of rations. "Thanks to the information we find online and receive through *Mobile Vaani*, all the women of our village have opened bank accounts," she says. Today, Nirmala has a ration card (to purchase subsidised foodgrains) and her family is a beneficiary of the *Kisan Samman Nidhi Yojana* (monetary support for small and marginal farmers) and *Vridhajan Pension Yojana* (old age pension), for which she credits her mobile phone and the MAMP programmes she listens to regularly.

When her 20-year-old daughter recently became the first person in the family ever to hold a salaried government job, Nirmala saw it as her own victory. Growing up, she never saw women as empowered beings. But now, Nirmala can lead and enable hundreds of women with her persistence, all of which she owes to her education. Along with peer volunteers, she has reached about 15,000 women in Nagar Nausa and Chandi blocks, training and empowering them with her mobile. A rural woman with a physical disability and a mother of three, Nirmala never imagined she could become the change she wanted to see. The work she has done through the years has brought her immense respect, but it is the satisfaction and joy she feels when children in every village she visits identify her and shout, *"Mobile vaani wali didi aa gayi"* (the elder sister from Mobile Vaani is here), that keeps her going.

Mona

[e] Gram Sabha refers to an open village assembly, comprising all adult members of village (above 18 years and who are included in the electoral list) where concerns of the population of that panchayat are raised and discussed. Historically, women's participation in these public meetings have been very low as they were considered male-led spaces.
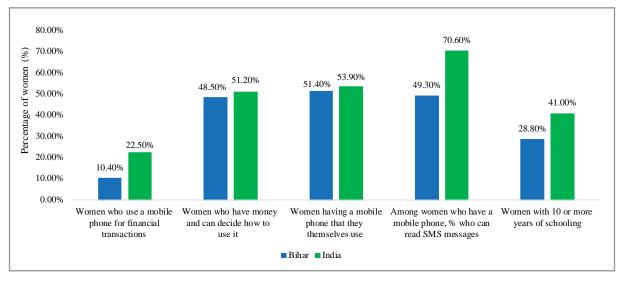
Figure 1: Women's digital and financial empowerment indicators for Bihar and India, 2019-21

KEY LESSONS

- Despite gains in mobile ownership, the lack of digital literacy limits women's empowerment significantly. Low-cost, multi-platform technologies have the potential to create pathways to important information and knowledge, but digital skills-building is essential to enable this.

- The gendered mobile ownership divide, the rural-urban divide, and the digital and financial needs of women must be seen as different challenges that require unique, customised, and local solutions. In particular, the fintech space needs to become much more gender inclusive.

- Digital technologies have immense potential to drive behavioural, cultural, and gender-positive change.

NOTES

[1] Bihar, NFHS-5, http://rchiips.org/nfhs/NFHS-5Reports/Bihar.pdf

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NISHA BEN
Promoting Homestay Tourism in Uttarakhand

Over the last decade, there has been a significant rise in the number of women entrepreneurs in India. More and more women from different social backgrounds and age groups and with varied levels of education have turned to self-employment with the help of government schemes, much like 23-year-old Nisha Ben, an *Udyami Sakhi*[a] with Self-Employed Women's Association (SEWA) Bharat.[1] A resident of Kandara Village in Uttarakhand's Rudraprayag district, Nisha has a degree in Home Science and Sanskrit and lives with her mother and younger brother. As her father lives and works in a nearby town, Nisha is responsible for her family's immediate needs.

Although almost everyone in Kandara now has a mobile phone, only a few villagers are mobile-savvy or digitally literate. This is especially true for women in the Kandara, but things are slowly changing. Nisha, who got her first mobile phone when she was in the first year of college, believes that mobile phone access can help in terms of online learning and communication.

As per the fifth round of the National Family Health Survey (2019-21), in Rudraprayag district, 56.4 percent women have completed 10 or more years of schooling, as compared to 52.1 percent in 2015-16.[2]

In 2021, Nisha learnt from her aunt, a SEWA member, about SEWA Bharat's apprentice training programme to run homestays marketed through online platforms (Atithi). SEWA Atithi, a grassroots women-run enterprise in the hospitality sector, was formed in 2019 to help women diversify their income by promoting community-based tourism. Nisha underwent three months of training, after which she was formally inducted as an Udyami Sakhi for Atithi Homestays to handle its day-to-day functioning. The Udyami Sakhi programme has enabled women micro-entrepreneurs and women-run collective social enterprises to become resilient in the aftermath of the COVID-19 pandemic.[3]

Uttarakhand is primarily an agrarian state, but climate change and wildlife encroachment have

Technological empowerment of women (aged 15-49 years) in Uttarakhand	
Women who have a mobile phone that they themselves use	60.9%
Among women who have a mobile phone, those who can read SMS messages	82.8%
Women who use a mobile phone for financial transactions	18.7%
Women who have ever used the Internet	45.1%

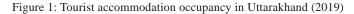Source: National Family Health Survey, 2019-21[4]

[a] A network of women entrepreneur creating business models revolving around low-cost products and services to resolve social inequities
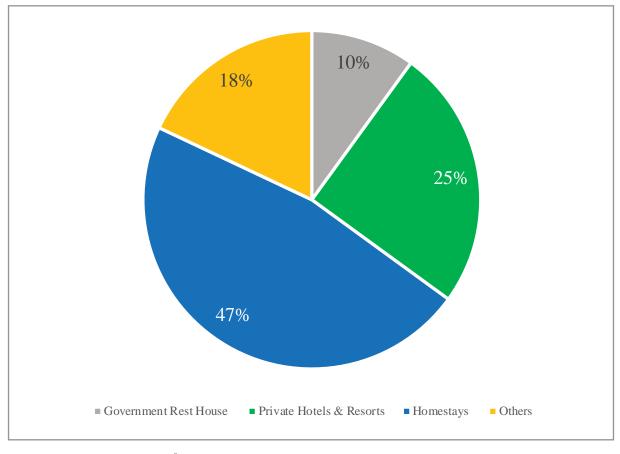
made farming an unstable source of income, resulting in a need for diversified sources of income. Through SEWA Atithi, women farmers in the Almora and Rudraprayag districts began opening their homes to tourists who wanted to experience Uttarakhand's rich local culture, heritage, and natural environment.[5] Additionally, the state tourism department has launched various schemes to promote homestays in hilly areas by providing financial assistance under the *'Veer Chandra Singh Garhwal Yojana'*. This has not only accelerated tourism and family incomes, but has also reduced migration to other states in search of jobs. Homestay tourism is an emerging concept and provides an important opportunity to generate employment and economic gains (see Figure 1).

However, a lack of awareness of government schemes, skilled human resources, and the need for digital literacy, creativity, and entrepreneurial skills are some of the main challenges to running successful homestays in Uttarakhand.[6,7]

During her training, Nisha learnt to make online bookings through a web portal, to generate bills, photography and videography, and online marketing and promotion through social media (primarily, posting pictures and videos on websites, Facebook and YouTube). "Earlier I used to take very amateurish pictures, but my training taught me about the importance of lighting, angle, backgrounds, and frames. Initially, it seemed difficult, but in three months I learnt these new

Figure 1: Tourist accommodation occupancy in Uttarakhand (2019)
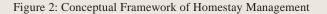

Source: Binita Chakraborty, 2019[8]

techniques. I now apply what I learnt, and the marketing photographs have improved greatly as a result," she says.
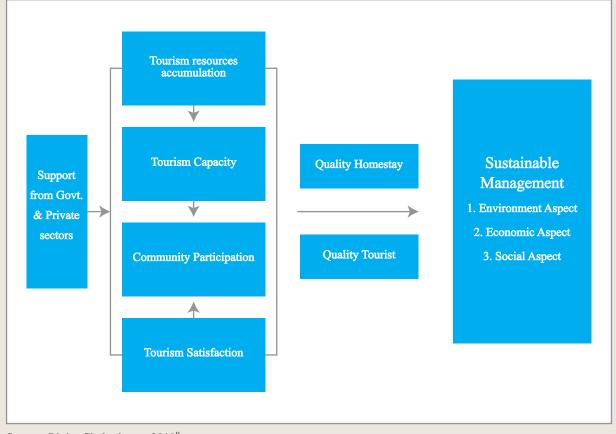
Nisha's work now involves checking reservations on the portal (booking.com) for the homestays in Almora and Rudraprayag, and addressing queries from clients and potential customers. She coordinates with guests before and during their stay about their accommodation, food preferences, and itineraries. Nisha also manages the homestays' digital payment systems. A key part of her role as a homestay manager (see Figure 2) involves creating appealing audio-visual content that can be used for

marketing and promotional purposes on social media platforms. "It makes me happy when guests are satisfied and give a good, positive feedback about their stay," she beams. "Besides my experience of using technology, I think I have learnt a lot from the experience of interacting with our guests themselves."

Nisha is a multitasker. Her days starts at around 4 AM; she helps her mother cook and clean, work on the farm and tend to the animals, after which she handles work related to the homestays. Despite her hectic days, she is happy as her work allows her a certain flexibility that enables her to manage her personal obligations.

Nisha is convinced that technology has made things simpler and brought newer opportunities to her at the click of a button. Indeed, digital tools are indispensable in her daily life. Not only has she now learnt certain hard skills (such as working on Google Drive, creating meeting links, and online banking), she has also acquired key soft skills, such as increased self-awareness, the ability to efficiently organise and manage time, and to confidently engage in conversations with others. Being the first and mostly only point of contact between clients and the women managing the homestays, Nisha's learnings have also expanded to accommodate good people management skills and digital coordination.

Through her work with SEWA Bharat, Nisha has been able to support her family and inspire many community members who were once unfamiliar with the organisation's work but now want to join its ranks. Nisha feels that everyone, especially women, must be able to advance themselves by learning the uses of technology, and the Udyami Sakhi platform is one way to do so. Indeed, she hopes to introduce even more rural women into the Atithi Homestay business to encourage a greater recognition of the collective. "What gives me greatest satisfaction is that I am able to help other women in the community," she says proudly.

Shoba Suri

Figure 2: Conceptual Framework of Homestay Management

Source: Binita Chakraborty, 2019[9]

KEY LESSONS

- Promoting homestay tourism can be an important means of generating employment opportunities and economic gains for women.

- To enable women to pursue careers in the homestay sector, a key lever will be to focus on helping improve their access to mobile phones and digital platforms, and ensuring that capacity building programmes are designed to help them develop soft and technical skills.

NOTES

[1] SEWA Bharat, https://sewabharat.org/what-we-do/entrepreneurship/womens-enterprise-support-system/

[2] National Family Health Survey-5, Ministry of Health & Family Welfare, 2019-21, http://rchiips.org/nfhs/NFHS-5_FCTS/UT/Rudraprayag.pdf

[3] SEWA Bharat, https://sewabharat.org/uttarakhand/

[4] National Family Health Survey (NFHS-5), 2019–21, International Institute for Population Sciences, Ministry of Health and Family Welfare, http://rchiips.org/nfhs/NFHS-5Reports/NFHS-5_INDIA_REPORT.pdf

[5] SEWA Bharat, https://sewabharat.org/uttarakhand/

[6] Jaswant Jayara, 'Homestay tourism in Uttarakhand – Oppurtunities & Challenges,' J Adv Management Res 5, no. 5 (2017), https://www.researchgate.net/publication/354143118_Home_Stay_Tourism_In_Uttarakhand-_Opportunities_Challenges

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[9] "Homestay and women empowerment: a case study of women managed tourism product in Kasar Devi, Uttarakhand, India."

PRAMILA KRISHNA
Transforming the Lives of Odisha's Forest Dwellers

The people of Koraput district in Odisha have always relied on the forest to make a living. Koraput, located in the Eastern Ghats, is known for its lush forests and well-preserved tribal culture. The history of the land can be traced to the third century when it belonged to the Atavika people—the ancient name for the forest-dwelling people of the region.[1] The Atavika people were considered brave and unconquerable. And much like her ancient ancestors, 40-year-old Pramila Krishna of Dangrapali village in Koraput has also always been determined.

Her earliest memories are of the forest. "The forest was always dark and mysterious. As a young girl, when I would go with my mother to collect firewood, I used to be scared of it," she recalls. "Now I help the women of my community to make a living off it." Pramila works as a digital champion with women's collectives and uses technology to help tribal women expand their businesses of selling forest products.

Koraput is a part of Odisha's KBK region (Koraput, Bolangir, and Kalahandi), considered extremely underdeveloped and vulnerable to recurring droughts and famine, which in turn leads to distress migration.[2] The region is unsuitable for year-long farming as the land is undulating and cannot be irrigated. When the summer rains arrive, rice, maize, and millet are sown. For the rest of the year, the community relies on non-timber forest products (NTFPs)—any product or service other than timber that is produced in forests—for their livelihood. The most common forest products of the region are tamarind and sal seed. Earlier, the women would sell their products in markets near their villages in Kundra, Kotpad, and Jeypore, but would incur high logistical expenses. With Pramila's help, they are can now sell their goods in their own village, as she has facilitated market linkages for the women with the use of her smartphone.

Pramila has also been working on community awareness by informing women about the minimum support price (MSPs)[a] available for their NTFPs and agricultural produce. When the last tamarind crop was harvested, Pramila checked the MSP for it online and discovered it was INR 36 per kg, which

Technological empowerment of women (aged 15-49 years) in Odisha	
Women who have a mobile phone that they themselves use	50.1%
Among women who have a mobile phone, those who can read SMS messages	68.3%
Women who use a mobile phone for financial transactions	17.3%
Women who have ever used the Internet	24.9%

Source: National Family Health Survey, 2019-21[3]

[a] Minimum support price is the minimum price set by the government for certain agricultural products, which acts as a safety net for farmers.

was more than the INR 23 that traders were offering. The women collectively bargained for a better price. "We don't have to rely on anyone to get the information we need. We directly talk to buyers. We can also easily transfer or receive payments with digital payment apps," she says.

Pramila has been trained under the 'Transforming Tribal Women as Digitally Empowered Enterprise Leaders' programme, which was rolled out in 2021 to encourage digital literacy and enterprise promotion among tribal women. It covers 6,600 women across Odisha's tribal districts and has been developed by the Centre for Youth and Social Development (CYSD), a non-profit organisation. The programme was supported through the WomenConnect Challenge India, an initiative by Reliance Foundation and USAID. An innovation of the programme is the Banashree application, which acts as an e-platform to facilitate market linkage and disseminate information on social security schemes. The programme is closely linked to the implementation of the *Van Dhan Vikas Yojana*,[4] a scheme launched by the central government in 2018, which covers 307 districts with forest-dwelling tribal populations across the country. To encourage entrepreneurship among tribal women, the scheme provides them with skills training and promotes the marketing of forest products through MSP.

Pramila, the eldest of three sisters, was born in the village of Jamunahandi, located an hour away from Dangrapali. Her father worked in an iron and steel plant in Chhattisgarh. She was only eight years old when her father passed away from an illness and the family had to return to Jamunahandi. Her mother took

up tailoring work to supplement the family's income from their land. Pramila remembers her mother as working without a break, striving to raise three daughters by herself. "Mother had studied till Class 3. Women in those days did not get the opportunity to study any further. But she wanted us to continue our education," Pramila remembers. She and her sisters studied till Class 10 in a charitable school.

Pramila got married at 16 and moved to Dangrapali. Her husband, Uday Chandra Krishna, who has also studied till Class 10, is a farmer and a part-time autorickshaw driver. He has unstintingly supported her in pursuing what she wanted, she says. They have two children, a 16-year-old daughter and 13-year-old son. Her daughter shares her interest in working with the community and is planning to train as an auxiliary nurse midwife.[b]

In the early years of her marriage, with the burden of domestic work, Pramila found it difficult to set aside any time for herself. In those days, Dangrapali was very different. Located at the edge of the forest, the village would become dark by evening as there was no electricity. There was no water connection either. Pramila would start her day at the crack of dawn by queueing up to collect water at the tubewell along with the other girls and women from Dangrapali. She would spend the afternoon cleaning the house and preparing the food. Rice had to be separated from the husk manually using a *'dhinki'* (husk lever), a long and laborious process that all the women would have to do. Later she would head to the forest to collect firewood to cook the rice. The village now has a rice mill and almost every household has tap water and gas connections. But she wanted to do more with her life.

Pramila's journey as a community leader and an entrepreneur began when she started tutoring the children of her village soon after she was married. She was one of the few women in the village who was educated. This has partially improved—data from the National Family Health Survey 2019-21 show that 40.6 percent of women in Koraput are literate, though only 17.6 percent of women have received 10 or more years of schooling.[5]

Around 2004, there was a drive to form self-help groups (SHGs) in the village and there was a need for someone to take charge of the bookkeeping for the SHG. Pramila stepped forward to form the SHG. After the first year, when the bank gave them a loan, she sold a batch of tamarind and made a small profit. From 2008, she took on the contract to cook the mid-day meal for the school in the village. Her work got her noticed and she rose through the ranks to become the head of the gram panchayat level SHG federation.[c]

In 2010, when CYSD was looking for community leaders to implement an education programme that encourages school dropouts to return to school,

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[b] A cadre of female health workers.
[c] An SHG federation combines a number SHGs for common cause and administration. Gram panchayat is a council at the village level.

Pramila was roped in. Since then, she has devoted part of her time working on the issue. Koraput is a part of the Aspirational Districts Programme[6] by NITI Aayog, which seeks to transform 112 of the most underdeveloped districts across the country. Last year, the district topped the list of the most improved aspirational districts in education. But digital connectivity among tribal women is still quite low; only 12 percent of women had digital access in Koraput, according to a survey conducted by CYSD. Pramila bought a smartphone with her savings two years ago. While she initially only used the phone to talk to her family, this changed once she completed the CYSD course. "Earlier, I could not see any purpose to it other than talking. But now it has made my life very convenient, I can get so much more work on my phone done by being at one place," she says. Her son taught her how to browse the internet and to communicate on Whatsapp. She has been using the Banashree application to help women access better market prices as well as social schemes. The app provides up-to-date information on several schemes such as widow pension[d] and old-age pension,[e] which Pramila disseminates within the community.

When she is not working, Pramila is learning new things on her phone. She recently learned to make a *biryani* from an online recipe. Next, she plans to learn tailoring. Like her mother, she is always working on not one but many things together. "People need me all the time and I can help. That keeps me going," she says proudly.
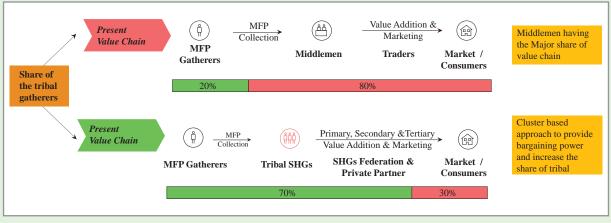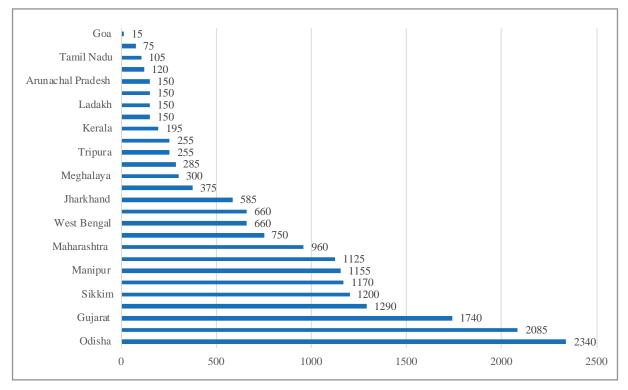
Sunaina Kumar

Figure 1: Proposed value chain under Van Dhan Vikas Yojana

Source: Ministry of Tribal Affairs[7]

Figure 2: Self-Help Groups by state under Van Dhan Vikas Yojana (as of March 2020)[8]

Source: Ministry of Tribal Affairs[8]

KEY LESSONS

- The availability of a cohesive e-platform combined with basic digital literacy can help bring together information and create market linkage in remote areas.

- Integrating technology into programmes for women collectives is a constructive approach to promoting entrepreneurship.

NOTES

[1] Koraput District, Government of Odisha, https://koraput.nic.in/.

[2] Socio-Economic Profile of KBK Districts, Niti Aayog, https://niti.gov.in/planningcommission.gov.in/docs/plans/stateplan/sdr_orissa/sdr_orich10.pdf.

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[6] Aspirational Districts Programme, Niti Aayog, https://www.niti.gov.in/aspirational-districts-programme.

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[8] Van Dhan Yojana, Mera Van-Mera Dhan-Mera Udyan, 200 Days Report, March 2020, https://trifed.tribal.gov.in/sites/default/files/2020-05/200%20DAYS%20PMVDY%2025_05_2020-compressed.pdf.

PRAVATI NAIK
Empowering Forest Communities Digitally

Thirty-year-old Pravati Naik's day starts with a series of chores at home before she sets off on her two-wheeler to visit about 10 neighbouring village panchayats in Odisha's Mayurbhanj district, covering around 35 kilometres of hilly terrain.[1] In close proximity to the dense forests of the Simlipal National Park in northern Odisha, the roads she travels on are not used often, are afflicted by harsh tropical weather, and with an ever-present threat of wild animals. But Pravati is undaunted by these daily adversities. Indeed, even her colleagues at PRADAN, a civil society organisation (CSO), describe her as bold and courageous.

Mayurbhanj is a protected Scheduled Area,[a,2] characterised as such by the predominance of scheduled tribes[b] and other forest-dwelling groups. Despite living amid natural and mineral resources, the group has remained largely on the outskirts of modern development in terms of education, livelihoods, and health. For generations now, tribal families have lived in harmony with the forests. But as more industrialisation projects penetrate the region, many of these Scheduled Areas are now at a higher risk of displacement and food insecurity. The 2006 Forest Rights Act was a seminal move in granting forest dwellers security and autonomy over plots of land that they could protect and own.[c]

Pravati is the only woman *jamin sathi* (friend of the land)[d] in PRADAN's Odisha network. Proficient in advanced mobile applications such as ArcGIS Survey123 and CADASTA Collector, she takes great pride in the scientific rigour and technical skill she has developed through her own will and effort. The mobile applications help her geoplot, store, and analyse land and resource data with increasing accuracy and speed.

Technological empowerment of women (aged 15-49 years) in Odisha	
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Women who have ever used the Internet	24.9%

Source: National Family Health Survey (NFHS-5), 2019–21[3]

[a] According to the Indian Constitution, Scheduled Areas refers to those geographical regions where the central (or federal) government directly intervenes to safeguard the identity and cultural-economic interests of the resident tribal groups. Nearly 13 percent of India's geographical area falls under this category.

[b] Under Article 342 of the Constitution, scheduled tribes is an umbrella term used for the many tribal groups that may be classified as such based on certain attributes, such as geographical isolation, shyness of contact with the larger community, backwardness, and distinctive culture. Currently, India has 750 such identified tribes, 62 out of which are in Odisha.

[c] The Forest Rights Act 2006 allows for two kinds of rights—individual forest rights (IFR) and community forest rights (CFR). IFR allows legal rights of the forest land to an individual belonging to a scheduled tribe if the family has lived/used that land since before December 2005, and if the person belongs to any other forest dwelling category, the family must prove that at least three generations have occupied that plot of land. The ownership can only be transferred to an immediate family member or offspring. It allows them freedom to use the produce from the land. On the other hand, CFR is granted to a dedicated village for common activities, such as livestock grazing and constructing schools.

[d] *Jamin sathi* is a trained field surveyor who is responsible for mobilising communities to claim lands, conducting geoplotting, and assisting beneficiaries in land documentation.

"Earlier, plotting a community land was a tedious affair lasting around 10 days with personnel trying to measure them with old paper maps, which are often imprecise. Now it takes me a day or two only. When I use my phone to measure the land's exact area, shape and coordinates, the village elders are left astonished. It took some time for the people to accept it, but they came around," she explains.

Although the use of technology has accelerated the process of making and settling individual and community forest rights (IFRs and CFRs) claims, its penetration is still slow and low digital literacy is a matter of concern. The approval rate for forest rights claims still remains between 50 percent and 70 percent (see Figures 1 and 2). With PRADAN's support, Pravati alone has helped file 198 IFRs and 10 CFR claims online. Using her smartphone, she has also accelerated the process of applying for and adopting job cards,[e] ration cards, and widow pensions, especially for the women in Thakurmunda block, where basic amenities, services, and information is significantly harder to reach owing to the fractured connectivity and hilly topography. With respect to her work in geoplotting and digital mapping of forest land, Pravati says she feels great satisfaction witnessing the growth of peer support and women's participation in the plotting process. Pravati says, "We [members of tribal communities] have always been close to nature. These forests are our very own. Now, when we also own the lands legally, it empowers us today, safeguards our future and acknowledges years of service our generations have put in as past custodians of the forests."

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[e] A job card is an entitlement card issued to every household where an adult member has sought employment under Mahatma Gandhi National Rural Employment Guarantee Act and has shown willingness to do casual manual labour. Every job card holder is entitled to 100 days of casual manual labour.

Pravati's initiation into the use and benefits of technology was slow and took place over the course of years. Born in the neighbouring Keonjhar[f] district, Pravati grew up with three sisters and two brothers. Resources were scarce. The family's financial difficulties were compounded with the death of her father, the family's sole breadwinner, when she was around 17 years old. Despite her dreams of studying further, her education came to a halt soon after she passed her Class 12 examinations. Married at 18 years, her marital family is now a household of five. One of her strongest memories of her teenage years at her parents' home is the family's excitement and pride at owning a basic keypad phone that they used to talk to relatives. That mobile phone introduced Pravati to the benefits of technology, albeit in a very limited way. It was only a decade later (around 2017 or 2018) that she bought her own smartphone with her first salary. However, this was not well received by her in-laws; her father-in-law resisted the 'unnecessary expense' and other women in the family labelled her as being 'too fashionable'. But none of this deterred her.

Pravati's first taste of community leadership came around 2011 when she mobilised the women of her village to ask for clean fuel in the form of LPG cylinders. "The providers in the town tried to charge us higher cost for the subsidised cylinders because we belong to tribal communities and live far off." So, she pooled in a nominal amount for each cylinder and hired a taxi for these deliveries.

Although she faced bureaucratic hurdles along the way, she knew her village needed it. "Earlier, we had to spend nearly half our day risking our lives to fetch firewood from the forests. Cutting our trees bothered us. Now with the cylinder, we don't have to fall ill from all the poisonous smoke of the burning wood and can spend more time with our children," she says. She mobilised 130 out of the 230 households in the village to shift to gas stoves. This was her first win, a very memorable one.

With this support from the community, Pravati went on to work as an educator with the Centre for Youth and Social Development, a local CSO, from 2015 to 2019. She consistently championed using mobile phones as tools for advocacy and awareness-raising during this period. Working across projects, she ran mobile campaigns to sensitise communities about the need to mitigate losses to children's education arising from their engagement in child labour, and to promote good practices related to maternal and neonatal health with her smartphone.[4] Since joining PRADAN in 2019, she has gone further. She now facilitates the working of the Community Forest Rights Management Committees across the panchayats under her purview, ensuring that the government-mandated one-third participation of women in decision-making is followed.[5] The officials at the block-level administration of the Forest and Revenue Departments know and respect her. She has realised that with the right information at hand, the means to provide it, and compassionate leadership, she can

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[f] Also known as Kendujhar

empower her community. Therefore, with the trust she had garnered through almost a decade of working for the welfare of her community, she contested the *gram panchayat*[g] elections in 2022. Although she lost the election to older, established politicians, her commitment remains unwavering.

The empowerment of forest communities, especially women, using digital means remains one of Pravati's core missions. She recalls a recent incident in Satkosia where she was involved in digitally mapping the land and helping settle an IFR claim for a recently deceased man. His brothers had removed his wife as a beneficiary of the land, limiting land rights to themselves. But Pravati took a tough stand to either include all four or no one. She ensured that one-fourth of that land was settled in the wife's name, and the woman's three children were also rightfully listed as dependents. "Land is an empowering asset, and I will always try to ensure that technology can be used strategically to help single women get their deserved share," she asserts. Today, 36.6 percent of women in Odisha own land either jointly or with others. Interventions like Pravati's will likely to raise these numbers in the years ahead.[6]

Mona
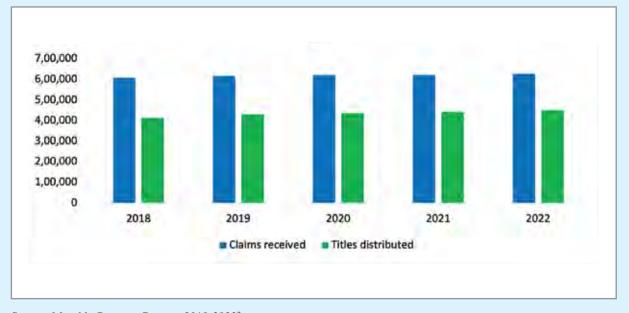
Figure 1: Total Individual Forest Rights Claim Settlement in Odisha, 2018-22

Source: Monthly Progress Reports 2018-2022[7]

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[g] A gram panchayat is the most basic unit of India's Panchayati Raj system of governance. It is a democratic body consisting of a cluster of surrounding villages led by a sarpanch (head of the five-member executive body). Its primary responsibility is the welfare of its constituent villages and population. Although the government reserves one-third of its positions for women, the adherence to this rule has been poor.
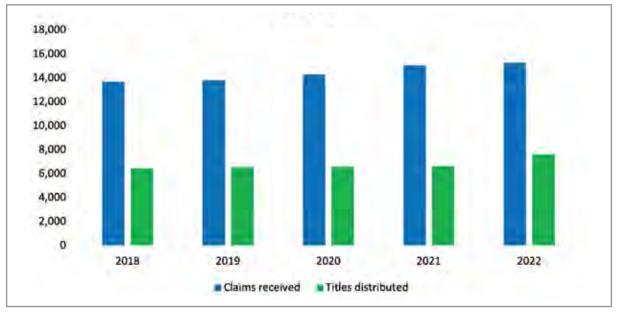
Figure 2: Total Community Forest Rights Claim Settlement in Odisha, 2018-22

Source: Monthly Progress Reports 2018-2022[8]

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KEY LESSONS

- Online channels and processes ease the procedure of submitting individual and community forest rights claims, and can help sensitise tribal and forest-dwelling communities to the provisions of the Forest Rights Act, their rights, and entitlements.

- Women's participation in digital mapping and geoplotting exercises can have a key role in helping support the development of citizens' groups that are working to uphold forest rights and could also eventually strengthen efforts to ensure an increase in women's ownership of land and receipt of land-based entitlements.

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NOTES

[1] Thakurmunda Block, Mayurbhanj District, Odisha,
https://gisodisha.nic.in/District/mayurbhanj/mayurbhanjpdf/Blocks/Thakurmunda%20Block/Thakurmunda_GP%20Map.pdf

[2] Namita Wahi and Ankit Bhatia, *The Legal Regime and Political Economy of Land Rights Of Scheduled Tribes in the Scheduled Areas of India*, Centre for Policy Research, 2018,
https://cprindia.org/briefsreports/the-legal-regime-and-political-economy-of-land-rights-of-scheduled-tribes-in-the-scheduled-areas-of-india/

[3] National Family Health Survey (NFHS-5), 2019–21, http://rchiips.org/nfhs/NFHS-5Reports/NFHS-5_INDIA_REPORT.pdf

[4] Ministry of Tribal Affairs, Government of India, Monthly Progress Report on the implementation of the Scheduled Tribes and Other Traditional Forest Dweller (Recognition of Forest Rights) Act 2006,

March 2022, https://tribal.nic.in/downloads/FRA/MPR/2022/(A)%20MPR%20Mar%202022.pdf

[5] Ministry of Tribal Affairs, "Monthly Progress Reports on the implementation of the Scheduled Tribes and Other Traditional Forest Dweller (Recognition of Forest Rights) Act

2006", Government of India, https://tribal.nic.in/FRA.aspx

[6] National Family Health Survey (NFHS-5), 2019–21, http://rchiips.org/nfhs/NFHS-5Reports/NFHS-5_INDIA_REPORT.pdf

[7] Ministry of Panchayati Raj, Government of India,

[8] Projects, Centre for Youth and Sustainable Development, https://www.cysd.org/previous-projects/

PRIYA RAVINDRA CHAMAT
Kawlewada's Bank on Wheels

Sunlight pours through the window in 27-year-old Priya Ravindra Chamat's home in Kawlewada village in the Bhandara district in Maharashtra's Vidarbha region. Paddy fields stretching to the horizon, farms rolling into endless acres, birds chirping, and the crisp air all coming together like some grand symphony as Priya prepares to rouse the rest of the family. The *kumkum* (vermilion) on her forehead is still wet as she proceeds to the kitchen to prepare food for her family of eight, while her husband, Ravindra Chamat (36), leaves for his work as a contractor and real estate agent.

Life was quite different for Priya growing up in Murmadi village (55 km away from Kawlewada). "*Aai* [mother in Marathi] studied till Class 10 and so she ensured we finish our education. She even taught many community members how to sign and write their names. Although both my parents are farmers, education was extremely important to them." She reminisces about playing volleyball in school and winning at the nationals in Chandrapur district in 2012. "Life was good" she adds.

As per the National Family Health Survey 2019-21 report, only 20.9 percent of girls in Maharashtra have finished 12 or more years of education in Maharashtra. Unlike most girls in her neighbourhood, Priya not only went on to finish school but also pursued her undergraduate studies through distance learning in 2018 after getting married.

Priya's interaction with the digital world began in 2013 when she was only 17. She attended a typing class near her village where she was trained to use Microsoft Office Suite and software such as Triple C and MS-CIT. Realising she had a knack and an interest in digital tools, she went on to teach other students at the institute. In 2017, she also began working as a technician at the Videocon outlet in her village, where she and other workers assembled remote controls and other electronic gadgets. During this time, Priya transitioned from using a feature phone to a smartphone. Using only popular applications like WhatsApp and Facebook, the full power of this "magic gadget", as she refers to it, remained untapped.

"I would have loved to work after my graduation. But my life was headed somewhere else. Life can change a lot after marriage", Priya says ruefully.

Technological empowerment of women (aged 15-49 years) in Maharashtra	
Women who have a mobile phone that they themselves use	54.8%
Among women who have a mobile phone, those who can read SMS messages	82.9%
Women who use a mobile phone for financial transactions	29.8%
Women who have ever used the Internet	52.9%

Source: National Family Health Survey, 2019–21 [1]

About 144 km from Nagpur, Bhandara houses within itself two different worlds. The bustling city centre offers everything from internet cafes to banking institutions. But just 10 km away, the narrative and the landscape changes drastically.This 'district of lakes' has two subdivisions, seven tehsils, 870 villages, seven *panchayat samitis*[a] and four *nagar parishads* (city council) stretching over 3716.65 sq. km. The urban area is only 49.34 sq km while the rural area is 3667.31 sq.km, explaining why 85 percent of its population still resides in the rural part of the district. In 2006, the Ministry of Panchayati Raj named Bhandara as one of the country's 250 most backward districts (of a total of 640 then). It is one of the 12 districts in Maharashtra currently receiving funds from the Backward Regions Grant Fund Programme (BRGF).[2] As per the 2011 Census, some of the predominant tribes[3] in Bhandara are Gond, Raj Gond, Arakh, Halba, and Halbi. These are scheduled and other backward tribes comprising mainly cultivators, farmers, and labourers.

The populace of Bhandara, despite being part of a fast-developing district, find themselves excluded from digitisation due to the lack of banking institutions and other opportunities in and around their habitat. "One of the biggest problems in my village is the lack of conveyance that connects us to the main city. Most of us do not own vehicles and so have to walk over five kms to the nearest bus stand. The nearest bank is 16 km away and visiting it often means losing a day's wage," Priya says.

[a] Rural local government body at the intermediate tehsil level in India.

Literacy in Kawlewada merely meant the ability to scribble a signature, and did not translate into digital literacy. When the COVID-19 pandemic hit Vidarbha, this reality became even more evident. This gaping digital partition left hundreds of women and their households at risk as the effects of the pandemic began percolating to the most vulnerable. "My village has 287 households and in my six years here, I have never seen a woman use a smartphone as much as the men do. Only four out of 10 women here know how to use a phone as opposed to eight of 10 men. During COVID-19, many struggled at first in using Aarogya Setu[b] and CoWIN[c] apps. While most families own at least one phone, everyone needed some support to use these apps," Priya says. According to the Mobile Gender Gap Report 2022, the proportion of women owning a mobile phone that they themselves use increases with age, from 32 percent among women aged 15- 19 years to 65 percent among women aged 25-29 years, before decreasing among older women (49 years onwards).

Priya, who is well-respected by the *sarpanch[d]* and the *gram panchayat[e]* office bearers, was requested to support and further Kawlewada's vaccination drive, despite the fear of contracting the virus. "We identify as *Kunbis[f]* and there are many indigenous communities like ours residing in the village who are ancestral farmers with no knowledge of navigating a phone application. When the government launched its vaccination drive, I helped hundreds of my brothers and sisters register on the app and book slots on CoWIN."

In July 2020, Grameen Foundation India (GFI), a non-profit organisation that works towards creating a financially inclusive rural community by leveraging technology platforms, reached out to Priya offering her to become a *grameen mittra* (friend of the village), to help the community, especially women, access formal financial systems and bypass systemic challenges. These mittras are changemakers and leaders who use smartphones to bring crucial banking knowledge, products, and services to the underserved and unbanked community members. The programme enables the mittras to become social entrepreneurs, learn new skills, and earn money to become financially independent. But Priya knew this would not be easy. "At first, this sounded too good to be true. My community and I had reservations. Why would anyone want to help us, and that too in the middle of a pandemic? Before I began my journey as a mittra, I remember making the first digital transaction on my own. I wanted to be sure that my money was safe. Once I saw my money reflect in the account, I knew this was not a scam," Priya recalls.

Priya was trained extensively on digital financial literacy with the help of an ingenious application, Grameen Mittra Connect. She learnt about various products and services that would help her bring the community closer to digital economic inclusion. She did online cash withdrawals and deposits, bill payments, and recharges for community members, while also informing them about various available government schemes. Soon, the community members were seeking more information and knowledge on lending, jobs, and agri-products.

Today, she has over 800 regular clients who rely on her for their financial needs. Now an expert, she

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[b] Aarogya Setu is a contact tracing app that records details of all the people one may have come in contact with as you go about your normal activities.
[c] CoWIN (COVID Vaccine Intelligence Work) is an app introduced by the central government for real-time monitoring of COVID-19 vaccine delivery.
[d] A decision-maker, elected by gram sabha, a village-level constitutional body of local self-government.
[e] Village council.
[f] A generic term used to describe castes of traditional farmers in Western India.

begins her workday by 10:30 am and has no formal closing hours. During the pandemic, she saw her clients on her porch to ensure social distancing and minimal contact. When asked if this was an easy transition for her family and what their reaction to her new role was, she says, "There were many questions and a few concerns but I paid little heed. I knew I wanted to do this and after a few months, everyone seemed to understand my work. I had unwavering support from my husband through it all, and it gave me the confidence to move ahead."

On a good day, her phone rings nonstop, and she conducts up to 100 transactions and earns INR 3,000. But it is not about the money for Priya. "Most of my clients are above 50 and about 10 percent are senior citizens with mobility issues who really benefit from the Mittra service."

She also shares a camaraderie with her community members, with many referring to her as their 'bank'.

She is also friends with most ASHA workers in her village.[g] She would often notice that they would run out of sanitary napkins to give the women due to the growing demand for menstrual products. When GFI offered her the opportunity to sell subsidised sanitary pads in the village, she leaped at the opportunity. "Even though there is a lot of work being done to ensure safe menstrual practices, we still encounter cases of negligence. Some shops in the village sell pads but women find it embarrassing to ask the male shopkeepers. I sell a packet at just INR 30 and I personally use them too."

As night falls in Kawlewada, Priya's children, Priyansh (4) and Aniya (1), come looking for their mother. When asked what she hopes for their future, she says with a voice full of hope, "I want them to be good people first and find happiness in whatever they do." Just like their mother.
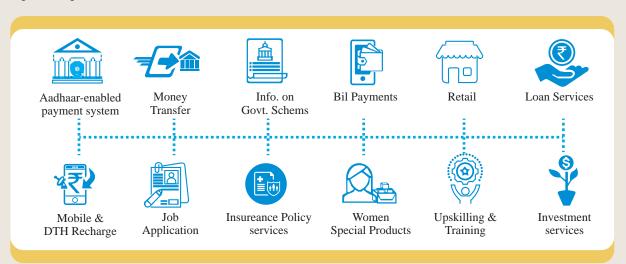
Ronisha Bhattacharyya

Figure 1: Digital Financial Services

Source: Grameen Foundation India - Grameen Mittra Connect App – Services

[g] ASHA workers are employed by the Ministry of Health and Family Welfare as a part of India's National Rural Health Mission.

KEY LESSONS

- The mobile phone is helping bring a bevy of banking and other services to people in small communities who would have had to miss a day's wage if they were to travel to a bank. It is especially beneficial for elderly community members.

- Women in leadership positions who can also handle domestic duties inspire other women in the community. Enabling women to achieve such ambitions can elevate their social status.

NOTES

[1] Source: International Institute for Population Sciences, National Family Health Survey (NFHS-5), 2019–21: India: Volume 1, March 2022.

[2] Indian Audit and Accounts Department, Regional Training Institute Kolkata, Comptroller and Auditor General, Government of India, "Backward Regions Grant Fund: A Compendium," August 2008, https://cag.gov.in/uploads/media/BACKWARD-REGIONS-GRANT-FUND-20210626144840.pdf

[3] Tribal Research and Training Institute, Government of Maharashtra, "Districtwise Major Tribes in Maharashtra State (As per Census 2011)," https://trti.maharashtra.gov.in/images/statisticalreports/New%20District%20Wise%20and%20tribe%20wise%20population.pdf

PRIYA PRAKASH MALI
Connecting Communities to Welfare Schemes

Haqdarshak[a] is a social enterprise that allows urban and rural populations to access government programmes and welfare schemes through the use of technology, and empowers communities to generate livelihoods. This is the story of Priya Prakash Mali, who has been a *haqdarshak*—a field support agent for the Haqdarshak service—in Maharashtra's Raigad district since 2019.

Growing up in the village of Benavale in the Pen tehsil of Raigad, Priya completed her education up to Class 10. Her father was employed with the railways and mother was a housewife. After her marriage in 2002, she moved to Wadhav village with her husband, a journalist who worked for a local newspaper. Wadhav has a population of around 6,000 and its inhabitants are chiefly from Other Backward Class (OBC) communities whose primary occupation is farming. Priya was a housewife devoted to her family and with little awareness of social welfare schemes. "Not much information about government programmes was provided by our *gram panchayat*," she says. In

2019, Priya was informed by a friend that the Jindal South-West Foundation was scouting for local women willing to work in the field and nurture their ability to become agents of change. She cleared her interview and received two days of training on the Haqdarshak platform. She then started work and has not stopped since.

"I got my first mobile phone in 2020," says Priya. "Until then, we had a family phone used by my husband." Priya wanted to learn to be able to help her community—most social security schemes are now technology-linked and being able to access them digitally would save her community members the inconvenience of having to go to the Taluka office where they would be charged high fees or bribes to avail of or enrol in the scheme. Under the Haqdarshak service, the same facilities are provided—be it the allotment of a PAN card, Aadhar card, e-Shram Card (under the *Pradhan Mantri Shram Yogi Maandhan*)[b] or *Aarogya Card* (under the *Pradhan Mantri Jan Arogya Yojana*)[c] at a more economical rate (ranging from INR 40 to INR

Technological empowerment of women (aged 15-49 years) in Maharashtra	
Women who have a mobile phone that they themselves use	54.8%
Among women who have a mobile phone, those who can read SMS messages	82.9%
Women who use a mobile phone for financial transactions	29.8%
Women who have ever used the Internet	38.0%

Source: National Family Health Survey, 2019–21[1]

[a] 'Haqdarshak' is bridging the information and access gap between citizens and welfare schemes (both government and private) using tech and a last-mile field agent network (of mostly women).

[b] A government scheme meant for old age protection and social security of unorganized workers.

[c] The world's largest health assurance scheme providing a health cover of INR 5 lakh per family per year for secondary and tertiary care hospitalization.

250 per application depending on the difficulty of the scheme), and at their doorstep. The app enables the identification of eligible government welfare programs based on citizen information. The Haqdarshak agents use this tech-assisted model to help improve the uptake of entitlements in the community, while they themselves earn a livelihood in the process. Haqdarshak is sector-agnostic and seeks to amplify impact—whether one is helping create livelihoods for women or ensuring that the excluded are linked to basic social security benefits.

Priya feels empowered being a haqdarshak and helping provide application services to the community. Her work has made her independent and she can now contribute to the family's income. "Since the work is flexible, I am also able to manage the family-owned stationery store to earn an additional income," Priya says. "Haqdarshak, however, is my primary source of income, and I have been saving my earnings for my children's education." She paid for her son's civil engineering education entirely from these earnings.

Priya has completed over 4,000 applications till date. Her most recent milestone was completing 2,000 e-Shram applications. Convincing people that government schemes can provide useful benefits, and that they should apply for them can sometimes be difficult. But Priya's interactions with community members have not only made her confident but also more aware of the different challenges that people in her community face. Being a haqdarshak has helped her realise the degree to which her community and family were *"vanchit"* (deprived). Not knowing about these schemes prevented them from achieving a better quality of life that was otherwise within arm's reach. With time, as benefits from their applications trickled in, Priya has become one of the primary sources of information about government schemes for her community.

Government entitlements help support livelihood promotion and limit the impact of risk for poor households. However, a lack of awareness, the absence of guidance, and the time lost in multiple visits to administrative departments at the tehsil have discouraged people from availing of several public services. Through Haqdarshak, various campaigns are organised to raise awareness about schemes including the *Pradhan Mantri Bima Suraksha Yojana, Pradhan Mantri Shram Yogi Mandaan Yojana, Ayushman Bharat Aarogya* and *Krishi Vikas Yojana*. Haqdarshak's distinct approach towards translating government efforts into grassroots-level impact is a perfect example of leveraging technology for social good. Technology has streamlined application processes, reduced the need for follow-ups, and accelerated outcomes.

An in-depth survey of haqdarshaks across 16 Indian states shows how the Haqdarshak initiative has empowered them to acquire digital literacy, guide their communities, bring positive change at the grassroots, and to enable digital adoption, community empowerment, livelihood opportunities, and an increased awareness and demand for welfare schemes. It has also allowed

the haqdarshaks themselves to emerge as community leaders. Across India, the programme is helping forge critical last-mile connections between citizens and public services. In Chhattisgarh, for instance, the Haqdarhak project has reached a milestone 1,00,000 applications for social protection schemes between June 2019 and September 2020 alone Haqdarshak is present in 24 states having trained over 30,000 agents so far, and impacted 35,000 micro-business. It has provided application support service to over 18 lakh people and benefits worth over INR 40 billion to over two million citizens.

Haqdarshak: Impact

LIVELIHOOD OPPORTUNITY

90% of the Haqdarshaks are able to contribute to improve the family annual income.To know more about the average income of the model, see appendices

DIGITAL LITERACY AMONG WOMEN

100% women reported that their digital literacy knowledgeincreased after being trained as a Haqdarshak and using the app. They feel more comfortable and confident about using smartphones.

WOMEN EMPOWERMENT

94% women Haqdarshaks expressed a change in the attitude of their family and community members towards them. They have started receiving more respect as well as support towards their aspirations.

LEADERSHIP

97% of the Haqdarshaks reported an increase in confidence with regard to interacting with large groups of people as well as seeing themselves as a guide for their community
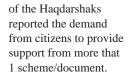
INCREASED AWARENESS ABOUT ENTITLEMENTS

97% Haqdarshaks agree that citizens in their communities are now more aware of welfare schemes and their benefits.

70% of the Haqdarshaks reported the demand from citizens to provide support from more that 1 scheme/document.

INCREASED GOVERNANCE

86% agree that accountability of government departments to deliver timely scheme benefits has increased due to citizen awareness.

Source: Haqdarshak[2]

Priya feels encouraged to help enrol more people for schemes that will benefit them, and her community is all praise for her. During the pandemic, she and her colleagues enrolled 100 applicants under the *Pradhan Mantri Jeevan Jyoti Bima Yojana,* where families receive an amount of INR 2 lakh in the event of the insured's death due to any cause. During the COVID-19-induced lockdowns, the Haqdarshak mobile app was very helpful as applications could be completed from home itself. Similarly, when Cyclone Nisarga hit the Raigad district in June 2020, Priya helped families receive compensation based on the damages they had incurred, ranging from INR 5,000 to INR 10,000. And under the

Ayushman Bharat scheme, she has helped about 50 Below Poverty Line (BPL) families with health coverage and timely treatment. Another personal milestone for her has been to implement Aadhaar updates and link the Aadhaar IDs to mobile phones for nearly 500 applicants.

"Being able to help people in my community receive their benefits and entitlement is deeply satisfying," says Priya. "I helped a poor widow with her *Kutumba Labh* [National Family Benefit Scheme] application, so that she could receive financial aid worth INR 20,000. The financial assistance is provided to the BPL family upon the death of the

primary breadwinner. The process is tedious and complicated once the application is submitted at the Collector's office/Tahsildar. Priya made multiple trips to the Block Development Office for over a month to follow up. But it was worth it. "This is what motivates me to continue this work," she says. Priya is determined to continue making a difference in her community, and to use technology to bring public services, social benefits and welfare, and ultimately greater progress, to Raigad.

Shoba Suri

KEY LESSONS

- Using technology-assisted models to facilitate enrolment for signing up to certain government welfare schemes and to bring the provision for enrolment to people's doorsteps, could be transformational in increasing the reach to the last mile, by helping to eliminate the time and costs involved to travel to a centre for enrolment.

- Efforts to sensitise rural communities about relevant government schemes and programmes help drive improved uptake and utilisation. Women community leaders could play a key role in raising public awareness, and connecting individuals to the initiatives that could benefit them.

NOTES

[1] National Family Health Survey (NFHS-5), 2019–21, International Institute for Population Sciences (IIPS), Volume 1, March 2022, http://rchiips.org/nfhs/NFHS-5Reports/NFHS-5_INDIA_REPORT.pdf

[2] Haqdarshak Empowerment Solutions, Empowering Community Level Entrepreneurs to Provide Delivery of Welfare Schemes, November 2020

[3] Haqdarshak, https://haqdarshak.com/max_impact/

RAMAMANI SAHOO
On a Mission to Clean Bhubaneswar's Ekamra Vihar

Every morning when 32-year-old Ramamani Sahoo leaves her home for work as a community leader (working on issues of hygiene and water access), she has to step over mounds of waste and overflowing open drains. She lives in a shanty in Ekamra Vihar, an urban slum in Bhubaneswar, the capital city of Odisha. In the evenings, her son and daughter and other children from the neighbourhood play on the streets, where the festering sewage puts them at risk of contracting perilous infection.

Many in her community think that sanitation cannot improve in a slum, and question why a woman is leading the work on it. But in July 2022, when Bhubaneswar witnessed an outbreak of dengue, Ramamani knew there was no time to lose. She anticipated that most people from the community would seek information on the dengue outbreak through the interactive voice response system (IVRS) for sanitation in her ward. She composed a song to raise awareness on precaution and appropriate behaviour for release on the IVRS.

"Together we will chase away dengue, we will chase it way, we will chase it away," her voice soars persuasively, as she sings in Odia. She has recorded 20 such songs on issues related to water, sanitation, and hygiene (WASH), and is keen to improve her digital skills to learn the editing software on which her songs are produced.

The IVRS works as a mechanism for officials to hear feedback directly from the community. A part of Ramamani's work is to make door-to-door visits in her ward and encourage people to leave messages on the IVRS. If there are any people in the community who do not have access to phones, she uses her own phone to record messages to ensure no one is left out of the process.

Ekamra Vihra draws migrant workers from neighbouring districts, and is one of the many slums in Bhubaneswar. The city has been in transition, its population has increased over the years, and its growth has brought with it challenges of planning and governance.[1] One of those challenges is providing sanitation for the urban poor. The Odisha Urban Sanitation Policy, which was introduced in 2017, and was formed on the momentum of the Swachh Bharat Mission, addressed gaps in the entire sanitation value chain for the management of solid and liquid waste, including faecal sludge, septage, and menstrual hygiene.[2]

Technological empowerment of women (aged 15-49 years) in Odisha	
Women who have a mobile phone that they themselves use	50.1%
Among women who have a mobile phone, those who can read SMS messages	68.3%
Women who use a mobile phone for financial transactions	17.3%
Women who have ever used the Internet	24.9%

Source: National Family Health Survey (NFHS-5), 2019–21[3]

Though India has made rapid progress in ending open defecation, many WASH issues need urgent attention. About 600 million Indians face high to extreme water stress and about 200,000 people die every year due to inadequate access to safe water.[4] Additionally, only about 75 percent to 80 percent of municipal waste gets collected and only 22 percent to 28 percent of this waste is processed and treated.[5]

Since the onset of the COVID-19 pandemic in 2020, most of Ramamani's work shifted online. Earlier, she would urge people to demand the desludging of pits—a process to clean septic tanks—by filing an application with the municipal authorities. Now, all that people in the community must do is use a QR code to register for desludging. She often uses her own smartphone to help people through this process and to ensure they receive a timely response. Her work involves demand generation for sanitation services, increasing community ownership, and establishing a community-based monitoring system.

Ramamani has a stubborn streak that she takes great pride in because it is this trait that pushes her to work tirelessly to ensure there is safe and sufficient WASH in Ekamra Vihar, despite the lack of support at home. She says her mother-in-law taunts her for leaving the home and family to work outside, while her husband would prefer that she stay at home instead of doing community work.

It is also this stubborn streak that has made her into who she is today, by deciding to stay back in her village in Khordha district to study and look after her younger siblings while her parents migrated to nearby cities for work. When she finished high school (Class 12), her father stopped her from studying further as he was worried they would not be able to find a groom for her.

She was married at the age of 18 to Jiti Sahoo, who had also studied till Class 12 and ran a shop in his village in Nayagarh district. The shop had nearly no earnings and two years after they were married, they migrated to Bhubaneswar. When her husband could not find work in the city, he set up a food stall. To sustain the family, she runs a small store out of her home where she sells groceries and offers tailoring services. But her heart was always in community work. In 2015, she started to work as a member of the *Mahila Aarogya Samiti* (MAS) in her ward. MAS—women's groups of 8-12 members that cover 50 to 100 households in urban vulnerable settlements—is an intervention under the National Health Mission, launched in 2005 by the Indian government, to strengthen health systems in rural and urban areas. Its members work closely with ASHA[a] workers to mobilise women's collectives on health, nutrition, water and sanitation at the slum or ward level. MAS members are selected based on their social commitment and leadership skills.

Her work as a MAS member drew the attention of the Centre for Advocacy and Research (CFAR),

a public interest research and advocacy organisation, when they were recruiting for the Single Window Forum on sanitation, a programme that addresses all WASH-related issues at the community level. One of CFAR's key interventions is the use of technology for community engagement and delivery of WASH services. The CFAR intervention is supported by Water for Women Fund - Department of Foreign Affairs and Trade Affairs, Australian Government. Her work is voluntary and unpaid, and she relies on her store and tailoring skills to supplement the family income.
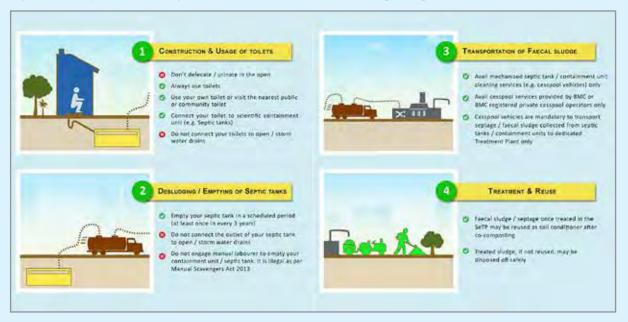
"Technology has helped a lot. It speeds up the delivery of services and brings in accountability," Ramamani says. There was resistance from the community at first. When she would go to people's houses, most would not believe that a QR code could bring the septic cleaning trucks to their homes. "But to bring any change in mindsets you have to work with patience and convince people," she says.

Since the QR code was introduced, the daily demand for desludging has risen by at least three times, CFAR claims, as people can register at a click of a button from the convenience of their homes instead of filing applications in person, as was the norm. Ramamani is particularly proud of the fact that the services have reached every household in the slum, from the disabled to the extremely disadvantaged whose homes are located far from the access points.

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[a] Accredited Social Health Activists, or ASHAs, are trained female community health activists. They act as intermediaries between the public health system and the community.

The pandemic has played a part in creating greater awareness on the need for cleanliness and hygiene. During the lockdown, Ramamani's work stalled as people would not let her enter their homes. So, she got involved in COVID-19 relief work, sharing information with the community on COVID-19-appropriate behaviour and hygiene practices. As the pandemic has ebbed, the focus has shifted back to WASH and the demand for better sanitation has increased in the community, perceived as a long-term impact of the pandemic.

Figure 1: Healthy Sanitation Designs and Practices by Bhubaneswar Municipal Corporation

Source: Faecal Sludge and Septage Management Programme[6]
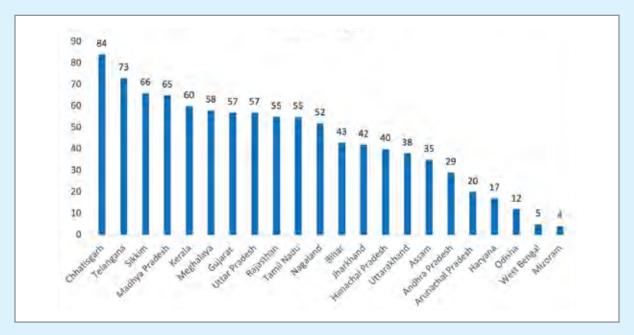
Figure 2: Percentage of generated waste processed by state as on November 2018

Source: Status of Implementation Report, Swachh Bharat-Urban[7]

Under *Swachh Survekshan*, an annual survey by the Ministry of Housing and Urban Affairs, which ranks cities and urban local bodies on various parameters (such as waste segregation and garbage disposal), Odisha was ranked among the top 10 cleanest states, while Bhubaneswar was ranked 144 among cities in 2021.

Ramamani's surroundings do not fill her with despondency. Instead, it makes her determined to ensure that her community gets access to better services. "I used to feel I am in living in darkness for as long as I was at home. Doing this work, seeing how much difference I can make by helping others, I can see I am not the only one facing challenges in life," she says.

Sunaina Kumar

KEY LESSONS

- Technology interventions that are accessible to all, such as IVRS or QR codes, can improve the delivery of services in WASH and lead to better health and hygiene outcomes.

- WASH messaging can be more effectively relayed through songs and storytelling.

- Women's collectives are an effective tool for community engagement and improved governance.

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SAPNA JHA
Pioneering Digital Literacy in Lalitpur

Born in the small village of Khera in Uttar Pradesh's Lalitpur district, Sapna Jha comes from a family with modest means. Her family was dependent on their agricultural land for survival and so had little to spare on education. But Sapna, the fourth among five children, was keen to study and ensure her younger brother could as well, especially since her elder siblings were not educated. Sapna studied until Class 5 in the village school, and until Class 8 at a school in the neighbouring village of Amroha. It was only after pleading with her father to allow her to continue her studies that she could attend a school in Mahrauni village (about 16 km from Khera) along with her younger brother, and complete Class 10. But soon, societal pressures halted her schooling, and she was married around the age of 14, Sapna recalls.

In a district where barely 23.8 percent women[1] have received more than 10 years of schooling, it is an achievement for a Sapna to be educated till Class 10, one that has served her well into adulthood.

In May 2020, Uttar Pradesh Power Corporation Limited joined hands with the National Rural Livelihoods Mission to inaugurate the *UP Bijli Sakhi Yojana* (Uttar Pradesh Electricity Sakhi Scheme). The scheme aimed to meld existing utility plans with digital literacy initiatives to deliver employment opportunities for women after skilling them. Under this special employment scheme, women members of self-help groups (SHGs) were trained to become *vidyut sakhis* (electricity friends) and collect door-to-door electricity bill payments. Since its inception, vidyut sakhis have jointly collected electricity payments of up to INR 6.25 crore.

Sapna, a member of a SHG in the village of Nanora under the National Rural Livelihoods Mission, was the only one in the group with a secondary-level education, and so was encouraged by her group members to apply to the UP Bijli Sakhi Yojana when it was rolled out. Eventually, she was elected as a vidyut sakhi, with a monthly salary of INR 6,000. Sapna was elated because she could now educate her children and supplement her husband's earnings from the small family business of selling iron instruments.

However, excelling at being a vidyut sakhi requires the participants to be digitally empowered. Until she was chosen to participate in the scheme, the only

Technological empowerment of women (aged 15-49 years) in Uttar Pradesh	
Women who have a mobile phone that they themselves use	46.5%
Among women who have a mobile phone, those who can read SMS messages	65.7%
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Women who have ever used the Internet	30.6%

Source: National Family Health Survey, 2019-21[2]

phone in Sapna's house belonged to her husband and so her early interactions with technology were limited. She describes being inquisitive but intimidated during her early foray with mobile technology. But much like her determined younger self, Sapna was determined to tackle the challenge head-on. She saw this as an opportunity to strengthen her capabilities and evolve beyond her primary identity as a homemaker. She soon enrolled for the *'Digital Saksharta'* (Digital Literacy) initiative led by Babli *didi* (elder sister), a digital literacy trainer, as part of a programme by Development Alternatives, a civil society organisation. This digital literacy programme is supported through WomenConnect Challenge

India, a joint initiative by Reliance Foundation and USAID."

Development Alternatives has been closely involved in every part of the capacity-building process—including identifying target villages for training, running campaigns on digital literacy, guiding trainees after training workshops, and helping develop sustainable solutions to grassroots challenges.

Her eyes light up as she narrates her experience with her digital literacy classes, which she completed in just 24 days in February-March 2022. During these sessions, Sapna was trained on how to operate a smartphone, including using OTT messaging

platforms, operating e-wallets, search engines, and other applications that she would need for her work as a vidyut sakhi. "Earlier I was scared of roaming around the village as I feared people's judgement, but when I had to travel for my classes and later for work, I forgot all about it. I was focused on my work and that's all that mattered," she recalls. Through these classes, Sapna felt empowered and liberated as she slowly regained a sense of agency in her work, in her mobility, and eventually in other aspects of life.

Sapna describes how she used her newly-acquired skills to help a neighbour order a chair online. This is a significant incident when seen in the context of men's Internet adoption rates rising from 45 percent to 51 percent in 2021[3] while that of women remained steady at 30 percent even during the pandemic when most activities moved online. Indeed, the assistance provided by Sapna (and other vidyut sakhis) can help women reduce their dependence on others for online functions such as video calling, online shopping, and staying connected via messaging applications.

It testifies to the importance of the 'role-model effect'[4] that sets behavioural change into motion. Sapna has encouraged about 70 women to become digitally literate and has been instrumental in encouraging a behavioural shift among them. They are now increasingly forming collectives to share these skills further.

Sapna also fondly recalls the time spent with her friend Seema from the digital literacy classes. They were inseparable during the classes and helped and taught each other through the sessions, demonstrating a strong 'peer effect'[5] that aided their learning.
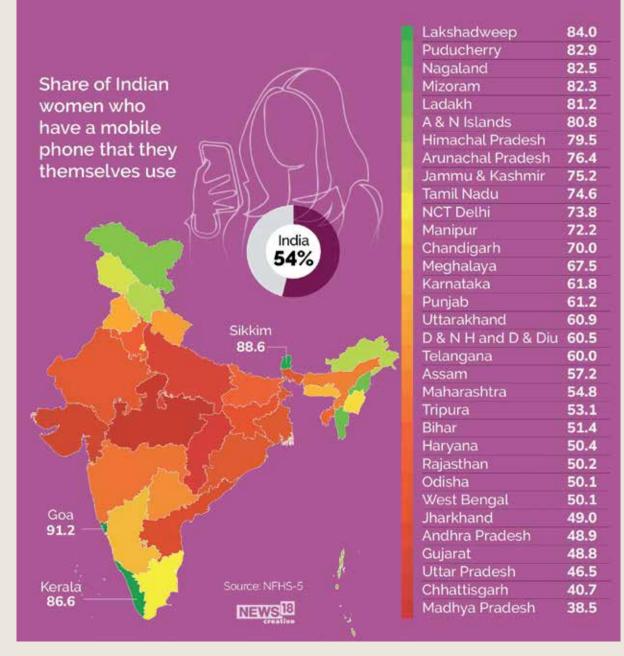
Sapna has also been nominated by Babli *didi* for a vocational course in mobile journalism that records feminist accounts of community development issues. Her first experience as a mobile journalist involved the group highlighting the issue of road and drain construction with the *gram pradhan* (village head). The group also presented evidence on the issue to the block manager of the panchayat samiti. Her role as a mobile journalist has taken Sapna to far-off villages and taught her the ways of professional dialogue, by providing her with the skills and knowledge to document and converse with a wide range of people. The course has encouraged her to have one-on-one conversations with people and arrive at meaningful outcomes. Development Alternatives was even keen to expand the scope of Sapna's work, and found her a role as a part-time stringer for a local radio station.

Becoming tech-friendly has pushed Sapna into unknown situations and unexplored territories, and given her a sense of self-dependence and exposure, while allowing her to shed her inhibitions regarding technology and people. Indeed, she has overcome tangible and personal barriers to become more resilient than what her family deemed her to be.

Through her multifaceted roles and experiences, Sapna has been able to aid a cultural shift in her community by ushering in the digital age for women from all walks of life. Sapna has found it relatively easy to navigate the digital space as she is educated, but the other women in her village who may have not studied as much as her must still tackle many hurdles. In the village that Sapna currently calls home, women head many important posts such as that of the *gram pradhan.*

When asked how her digital literacy has helped solve a social issue, she explains, "Earlier people had to go long distances to pay their electric bills and since it is a primarily agricultural village, people often did not find the time to go at all, leading to exorbitantly high late fees. This has stopped since I have taken up the responsibility of going to each household and getting them to pay their dues every month. It is highly convenient for the families and I feel I am making a difference in the society in my own small way." According to Sapna, it is with the help of technology that she is employed and this has changed the way her village views women's work and their relationships with technology.

Avni Arora

Figure 1: State-wise share of women who have a mobile phone that they themselves use

Source: CNBC[6]

KEY LESSONS

- Peer mentorship is an exemplary concept that could digitally empower women engaged in SHGs.

- Melding public utility schemes with digital skilling initiatives could deliver impactful results, driving a cultural shift towards women's economic agency and mobility.

- Applying the 'role-model effect' to technology-based grassroots initiatives could inspire women to step up and become potential drivers for behavioural change.

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SAPNA SINGH
Breaking Tech Ceilings in the 'Land of Milkmen'

Uttar Pradesh (UP), often known as the land of *dhudiyas* (milkmen), is India's largest milk-producing state, accounting for approximately 18 percent of total production (see Figure 1).[1] From Dalelpur village in UP's Kanpur Nagar district emerges a story of resilience. Sapna Singh, 39, has fought against all odds to set up her own dairy that aggregates milk deposits from about 35 dairy farmers, mostly women. Since March 2022, all monetary transactions at the dairy centre are fully digitised.

India contributes about 23 percent of the global milk production and the sector has grown from 146.31 million tonnes in 2014-15 to 209.96 million tonnes in 2020-21, at a compound annual growth rate of 6.2 percent.[2] Sapna's journey in the dairy industry paints Dalelpur as a white star in the heart of the largest milk-producing country in the world. Her late father, who was one of her biggest sources of strength, was a farmer in rural UP while her mother was a homemaker. While only 58.5 percent of women in Kanpur Nagar district have 10 or more years of schooling,[3] Sapna's family was progressive and knew the importance of educating their daughter. Studying until the postgraduate level, a rarity in Dalelpur, gave Sapna even more confidence to access technology for her business.

Sapna is a survivor of domestic violence. In 2017, while pregnant, she bravely left her marriage to return to her parents' home. In 2019, when milk company *Namaste India* came to survey the area, Sapna was able to convince them to give her an opportunity to run the village-level collection centre (VLCC) for at least six months, despite scepticism over her not having any support from her husband, in-laws, or father.

Sapna had to convince the people in the village to trust her abilities and deposit their milk collections with her dairy. Soon, Sapna impressed them by making timely payments to the dairy farmers and so many in the village also pitched in to help her expand the dairy business. "I had the benefit of an education, and so when I bought the dairy, I began to speak to the women who used to come in to sell milk about themselves and their families. When I heard their stories, I realised that it is

Technological empowerment of women (aged 15-49 years) in Uttar Pradesh	
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Source: National Family Health Survey, 2019-21[4]

my responsibility to empower and free them from their circumstances, just like I did for myself. If something good came out of it, I would feel fulfilled," she says.

When the COVID-19 pandemic hit, everything was shut down, including banks, Sapna turned to technology. "I had to manage the finances of my dairy and would make payments by cash earlier. During the pandemic-induced restrictions on banks and the fear of COVID-19 spread, I was stressed about how to pay people for the milk they sold me. How would people make their necessary payments if they didn't receive the money? It then hit me that if I got acquainted with online transactions, I could send money to someone's bank account and have it withdrawn from an ATM. That is why I shifted to digital banking in the middle of the pandemic."

Sapna recalls how her father was the first in the village to buy a mobile phone in the late 1990s. Mobile phones have helped her immensely since 2011 when she was given a basic keypad phone during her postgraduate studies. It was only in 2017 that she started using her first smartphone. During the pandemic, she learnt to use it for online transactions, and now her phone is crucial for her business. Indeed, COVID-19 was a major enabler of digital payments in India, the value of which has grown from INR 20.71 billion in 2017-18 to INR 55.54 billion in 2020-21.[5] Sapna now works as a community mobiliser for the civil society organisation Solidaridad, whose experts trained her in good dairy practices and financial and digital literacy in 2021. This training was supported through the WomenConnect Challenge India, an initiative by Reliance Foundation and USAID.

While Sapna became adept at using a smartphone after the training, she quickly realised that motivating her community, especially the women, to adopt digital tools posed a challenge. She now supports Solidaridad to train the women associated with her dairy on how to make online transactions, but her efforts to motivate them in gaining digital literacy have been varied. She says that she takes her time teaching each aspect, from downloading payment apps to money transfer via QR codes, as she wants to ensure they understand everything. "To provide more hands-on experience, I often make them transfer INR 1 through the apps such as PhonePe and Google Pay so that they become more confident with the UPI transactions[a]," she says.

"Women in my village are often hesitant to access mobile technology as they feel that it cannot further their lives given the roles that they are expected to adopt daily. They feel like they are incapable of learning something new. They believe their purpose is to raise cattle, look after the family and tend to the field," Sapna says ruefully. She has to often explain to the women that there is much that can be done through mobile phones (such as be used for online classes for their children's online classes during the pandemic) and that being acquainted with mobile technology has many benefits beyond digital banking, from finding cooking recipes on YouTube to comparing market prices for various commodities online. Sapna is also often found explaining to the older people in the village to provide mobile phones to their daughters so that they can be financially aware and progress in their careers.
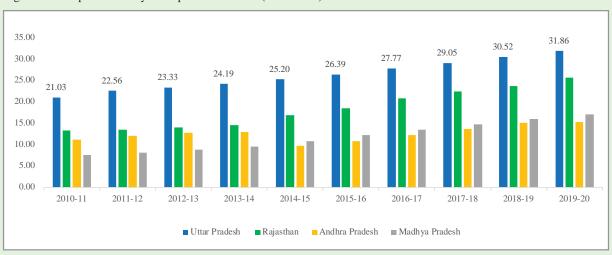
Sapna must also contend with people's scepticism over fraudulent transactions associated with online banking. She says, "Once I received a fraudulent call asking for my personal information in the garb of KYC[b] related to my bank account. But luckily, I was aware, and before divulging any confidential information, I confirmed with the toll-free helpline that it was not a genuine bank call." However, she says, the benefits of digital banking supersede these risks, which can be mitigated through literacy and accurate digital training. She justifies that digital payments have not only enabled the women to receive payments directly into their bank accounts, which gives them the financial freedom to decide how to use their money, but also makes it easier to maintain transactional records.
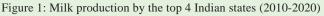
When Sapna started her dairy in 2019, she realised that women are the main assets in the industry and started connecting with them on a personal level. She would enquire about their child's health and provide information regarding cattle treatment and vaccination with support from Solidaridad. Sapna wanted to do something different that empowers the women in her village with financial independence enabled through digital literacy. Technology remains indispensable in the dairy industry, given the use of various machines during production, but

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[a] Unified Payments Interface, or UPI, developed by the National Payments Corporation of India, is a real-time payment system that enables instant inter-bank peer-to-peer and person-to-merchant transactions. It allows for multiple bank accounts to be linked to a single mobile application.

[b] KYC refers to 'Know Your Customer' or 'Know Your Client', a mandatory process in the Indian banking sector of gathering information to identify and verify a client's identity when opening an account, and to be updated periodically.

Sapna says, "Although mobile phones are extremely important, I want to get acquainted with laptops now so that I can provide training to other women on a bigger screen with better clarity."

Sapna believes that self-respect and independence are the most important things in life, values she is keen to pass on to her four-year-old daughter. She is also convinced that technology could help liberate
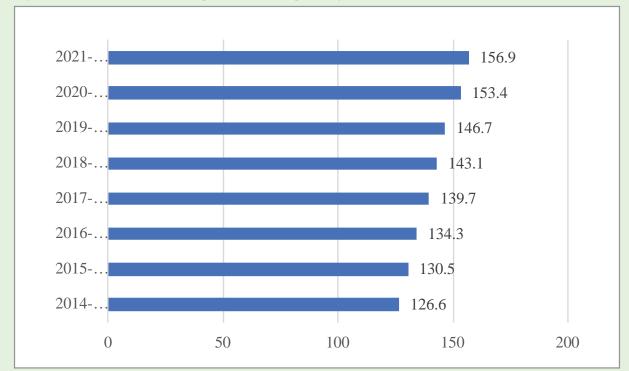
Figure 1: Milk production by the top 4 Indian states (2010-2020)

Source : Author's own, data from "Statewise Milk production," RBI Publications[6]

Figure 2: Index number of wholesale prices for milk (in percentage)

Source : Author's own, data from "Index number for wholesale prices," National Dairy Development Board[7]

women economically. Sapna knows the road ahead will not be seamless—dairy price hikes and probable new charges on UPI payments are likely to impact thousands of dairy workers like her across the country (see Figure 2)—but given the challenges she has already surmounted, Sapna confident that she will forge ahead.

Soumya Bhowmick

KEY LESSONS

- Digital literacy is crucial among women in the dairy sector to search for and use online information effectively, safely, and responsibly to receive payments directly into their accounts, thereby increasing their financial autonomy, confidence, and social status.

- Advancing digital payments will enable timely payments, which is key for the dairy sector's operations, and improve the maintenance of transactional records.

- Access to smartphones with internet connectivity will help women to better penetrate more complex but beneficial forms of technology, such as tablets and laptops, that would technologically upgrade the dairy industry.

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SEETU YADAV
A Community Leader Who Is Leaving No One Behind

Deep in Madhya Pradesh lies a quiet and unassuming village called Changera in Balaghat district, with a population of less than 2,000. It is here that we meet 35-year-old Seetu Yadav.

Seetu is bright and amicable. As one of seven siblings—six sisters and a brother—she grew up in a lively home. "We just studied and lived happily. We used to love playing games. Kabaddi was my favourite," she recalls fondly.

Seetu's education ended after Class 10 because, even though her father believed all the children should study, there were simply too many to educate. She got married at the age of 18, and in 2005 moved to Changera,where she now lives with her husband, two children, and in-laws. It was after her marriage that Seetu got her first phone—a small prepaid cellular device with a keypad, that she would use to check the time and make calls.

In the years that followed, Seetu noticed cracks in Changera's warm and welcoming environment. People, she said, considered women lesser than men, at home and outside. This skewed treatment of men and women in her village drove her to action.

In 2014, she joined hands with Reliance Foundation and began her work in community welfare. As part of Reliance Foundation's Saksham programme (an initiative that aims to generate awareness and health literacy in communities), Seetu worked as a *swaasth sangini* (healthcare volunteer) and would go from door to door to learn about how women in the village would spend their days.

The COVID-19 pandemic brought with it immense devastation and distress, and new challenges, including issues related to educating children. With the virus spreading quickly, strict lockdowns and social distancing was enforced all over the country. Children were pulled out of real-life classrooms and integrated—sometimes successfully, sometimes not—into digital ones instead, to keep them safe from the virus and to ensure that their education did not suffer.

In Changera, a teacher from Seetu's children's school began to offer training on mobile technology and teaching children via e-learning. Intrigued, Seetu joined these sessions. Once she completed the training, she began teaching children in her own area using a mobile phone.

Technological empowerment of women (aged 15-49 years) in Madhya Pradesh	
Women who have a mobile phone that they themselves use	38.5%
Among women who have a mobile phone, those who can read SMS messages	74.3%
Women who use a mobile phone for financial transactions	23.3%
Women who have ever used the Internet	26.9%

Source: National Family Health Survey, 2019-21[1]

In a matter of months, she became the most sought-after person in her locality. With a background in teaching children and the digital world at her fingertips, she began to attract more opportunities. With the help of Reliance Foundation, she began to assist women in Changera on how to do bank-related work like apply for loans, and how to operate mobile phones. Indeed, teaching women, especially in India's rural areas, to leverage mobile phones as a learning tool is a critical and necessary step to help transform powerlessness into empowerment.[2] "We teach them how to progress. We teach them how to grow," Seetu says solemnly.

Reliance Foundation also connected her to the *Krishi Vigyan Kendra* (farm science centre), a part of the National Agricultural Research System, which aims to assess location-specific technology modules in agriculture and allied enterprises through the assessment, refinement, and demonstration of technology. She introduced farmers in Changera to the centre, who then leveraged the opportunities offered by the facilities for their agricultural work.

Seetu also noticed that girls in her village often quit their studies after Class 8, in a telling trend on girls' education across the country. The high dropout-rate of girls at the higher secondary level remains a concern for India to this day. At the elementary school level, 96 girls are enrolled for every 100 boys, but only 50 girls are enrolled per 100 boys at the high school level.[3] Seetu was determined to make a change on this front in Changera. She went from home to home to convince parents to allow their daughters to study further. "I faced a lot of backlash," she admits. "There was a lot of verbal abuse. But I never paid them any heed."

Committed to the responsibility she had undertaken, she pursued each instance until the girls were able to continue their studies, often online.

The digital revolution in India has great potential to improve social and economic conditions for the

poor, women, children, and the marginalised. However, it also poses the risk of exacerbating existing fissures. The move to e-learning caused many poor, young women to fall behind, exacerbating the digital divide in the country.[4] But the work of community helpers like Seetu ensured that this was not the experience of every young girl. For instance, the parents of one girl were hesitant to allow her to study further despite being counseled by Seetu and the girl's teachers multiple times. It was only after Seetu shared her own story that the parents agreed to let their daughter continue her studies. Seetu herself went to get the girl enrolled.

Seetu also helped connect women in the village to the National Rural Livelihood Mission, a poverty alleviation scheme launched by the Ministry of Rural Development to enable skill development and help shape communities. "I knew how important it was that women build communities and earn through them, thereby helping them financially," explained Seetu. The women completed their training via mobile technology, forming learning groups to ensure even those who did not have access to mobile phones could benefit from the training too.

With the growing knowledge of mobile technology in the community, the women in Changera were able to start small businesses, using their mobile phones to advertise products like pickles and *papads*, and soon saw a marked interest from customers. Farmers too used mobile phones to learn more about agricultural practices.

Multiple organisations have acknowledged Seetu's accomplishments in the community and have even sought her assistance. Educate Girls,[a] Krishi Vigyan Kendra, the National Rural Livelihood Mission, *Swachh Bharat Abhiyaan*,[b] and several institutions and programmes have reached out to her to help their cause in Changera and the neighbouring villages. Indeed, Seetu is a sought-after community worker in nearly 40 surrounding villages.

India's post-pandemic reality is one that exists both offline and online. With traditional professions evolving to adapt to the digital space, it is important to make the virtual workspace more inclusive and accessible for rural India to create greater access to opportunities. Mobile phones have helped bridge some gaps for the people of Changera, enabled by Seetu's training.

Seetu's sphere of influence looks even more impressive considering that she also oversees 50 self-help groups, comprising over 500 women. All the women in these groups now use mobile technology, with many even having their own personal handsets. Seetu says she has noticed an increased trust in technology among the community, and people in Changera and the other villages, particularly women, have seen their work become easier with the adoption of mobile technology.

She now feels she has an identity of her own, says Seetu. *Scooty[c]-waali didi*, as she is fondly called—she began her work on foot, walking 15 kilometres every day to help the women in

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[a] Educate Girls is a non-profit organisation established in 2007 that works towards girls' education in rural and backward areas of India through community mobilisation. It operates in 18,000 villages across Rajasthan, Uttar Pradesh, and Madhya Pradesh.

[b] Swachh Bharat Abhiyaan (Clean India Mission) is a country-wide campaign launched by Government of India in 2014 to eliminate open defecation and improve solid waste management.

[c] In India, a motor scooter may sometimes be referred to as a Scooty.

her locality, and then bought a Scooty to enable her work—has in turn helped her community shape their identities. Her work as a community mobiliser who has fostered change in her village has drawn her much acclaim, be it for promoting digital literacy, training women to sew clothes and masks, and helping provide tap water connection in Changera (one of the few villages in the district with tap water supply).

Community-building is a collective undertaking. By introducing and engaging her community with mobile technology and the online world, Seetu is doing her bit to ensure that all are included. "Mobile technology has helped a lot. Nothing I do would have been possible without the mobile phone," she says.

Noyontara Gupta
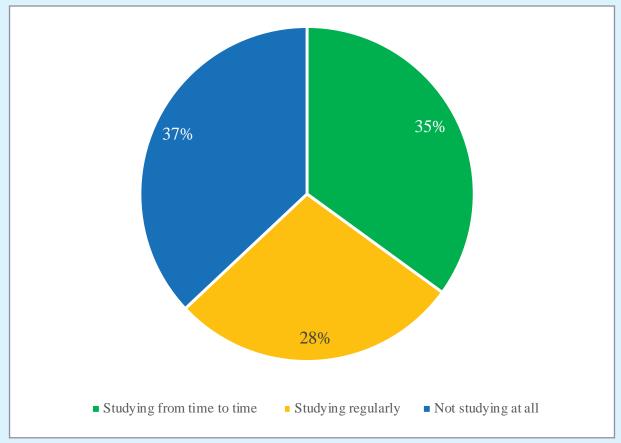
Figure 1: Rural children and online schooling (Classes 1-8)

Source: SCHOOL Survery 2021[5]

KEY LESSONS

- Targeted capacity development initiatives must be supported by public, private, and civil society actors to make mobile technology more accessible to those in traditional sectors like agriculture.

- Prominent community representatives or mobilisers must be trained to raise public awareness about the opportunities afforded by online schooling and e-learning at the community level. Their interventions could have a cascade effect and result in the increased use of information and communication technologies to access education.

NOTES

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SINGMILA KAPAI LANGKAN
Using Social Media to Market Manipur's Herbs

Just as the pink Shirui lily (*Lilium mackliniae*), Manipur's state flower, blooms in the hills of the Ukhrul district, so has Singmila Kapai Langkan with her entrepreneurial venture 'Herbs & Me' based in the district. Locally, such wild species of flora and fauna are just as rare as the extraordinary entrepreneurial journeys of women like Singmila, who are bringing urban India closer to nature through the strategic use of various social media platforms.

The 38-year-old launched her enterprise of handcrafted organic soaps and shampoos using the local herbs of Manipur with a Facebook page in 2019. "I started making my handcrafted soaps because we have a large variety of herbs growing in our village that have healing properties which could be used in aromatherapy. They can be used for a variety of other purposes too. I realised that these handmade soaps can benefit people through their medicinal properties. Hence, once I gained some training in soapmaking, I started my business and began sourcing materials from different parts of Manipur," she says. Singmila's venture is an embodiment of target 5.a within the UN Sustainable Development Goal 5 (Gender Equality), which urges "reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance, and natural resources, in accordance with national laws."[1]

Singmila was born in a small village called Peh (previously known as Paoyi), in the Ukhrul district of Manipur, and brought up in Ukhrul town. She is currently married and settled in Shirui village in the same district. Singmila is the seventh out of 10 children; her father was a farmer while her mother was a homemaker. Despite being educated, many are unemployed in Manipur while others move elsewhere in search of jobs. She remains deeply pained by the state of the youth in this part of the country, which motivated her to access the necessary skilling programmes and start her own venture. She was also part of a local student organisation called Tangkhul Katamnao Saklong (TKS) that imparts training to the local youth in various areas, from leadership abilities to digital literacy.

Singmila's penchant for handmade products was motivated by her mother's love for weaving and embroidery. "Living in a world where artificial

Technological empowerment of women (aged 15-49 years) in Manipur	
Women who have a mobile phone that they themselves use	72.2%
Among women who have a mobile phone, those who can read SMS messages	80.7%
Women who use a mobile phone for financial transactions	10.7%
Women who have ever used the Internet	44.8%

Source: National Family Health Survey, 2019-21[2]

perfumed soaps were readily available, it is sad that everyone including myself would go for such cheap products that often compromise our health.[3] So, I took the initiative of introducing handcrafted soaps and shampoos. A lot of people understood the traditional value of nature in my soaps and shampoos, and then social media made me aware that there is indeed a much bigger market for this," she says.

Technology has been a major enabler in Singmila's life, personally and professionally., A few years back, one of her friends from Manipur introduced Singmila to the Friends of Women's World Banking (FWWB) programme for women's entrepreneurship. FWWB, through its programme 'Enabling Technology for Women Entrepreneurs,' provided capacity building training to Singmila in micro-entrepreneurship. This programme was supported by Reliance Foundation and USAID through the WomenConnect Challenge India initiative. She reminisces how social media has

been useful to her during the nascent stages of her entrepreneurial journey. FWWB had multiple Whatsapp groups, which helped mobilise the schemes in her community, and also bring in more people like her who could benefit from the programme's financial management and digital literacy training modules. Apart from Facebook and Whatsapp, the programme also encouraged the usage of other platforms like Instagram and Pinterest to generate creative ideas for their products.

Although she initially tried to expand her customer base through flyers and word-of-mouth, she soon realised these were not working. "I set up a physical shop for six months. But due to the pandemic, I had no business from the shop for almost a year. As I was not able to afford the shop rent without running the business, I closed the shop permanently," she says. Instead, she used Facebook and WhatsApp to promote the products to friends, family, and a larger audience

across the country. Globally, as of 2021, India is home to the largest number users for Whatsapp (530 million),[4] YouTube (448 million), Facebook (410 million), and Instagram (210 million). Notably, without technology, Singmila's business would not have survived or recovered after the COVID-19 pandemic, nor would she have gained recognition for her work. Singmila plans to open her shop again when the markets are normal without any pandemic restrictions, and her financial situation is more stable.

The pandemic has provided a strong stimulus for various uses of social media in all businesses; social media activity saw a 50x surge between January and March 2020[5] in the early months of the pandemic, and mobile phones were the most preferred device to access such sites (see Figure 1). In fact, only during the first week of lockdown in March 2020, India saw a spike of 87 percent in social media usage.[6] Although 80 percent of merchants in India's Northeast region do not have access to seamless digital payments infrastructure—characterised by rural-urban divergences and prominent gender divides—the retail digitisation opportunity in the region is estimated to be about US$18 billion.[7] At the same time, internet connectivity remains a concern. Singmila laments that since she receives most of her orders through Whatsapp and Facebook, connectivity issues impact her business considerably. "I am not being able to promote my products properly because we are still stuck with the basic problems. I am good with technology and have no issues using various social media platforms. However, whenever there is no electricity in my village I worry about the business.

Our area has no power backup, which often leaves us without any network or charge on our mobile devices," she laments.

Singmila's journey has been arduous, not just in setting up the business from scratch but also in tackling the pandemic-induced restrictions, but she says that the government support has not been enough in tiding over the crises in her business. However, the young entrepreneur is thankful for the support from her family, helping her with soap-making, packaging and delivery. She also acknowledges the support she has received from FWWB and other NGOs in terms of her training and various other business insights.

Despite these challenges, Singmila's draws plenty of satisfaction from the fact that she is able to inspire young people in her community to follow their dreams and choose a path to achieve their entrepreneurial goals. She is often invited by various local organisations to deliver talks on her tech-driven entrepreneurial journey and impart training in different craft forms. "Yes, I have inspired people to become more tech-savvy. My Facebook page has motivated many women in my region to do their product promotions online. Earlier I would use the internet for entertainment, such as watching videos or listening to songs, like most people in my village. But my business taught me what a strong tool social media is in terms of expanding your customer base," she says excitedly. She currently also assists the FWWB in running the programme in Manipur and Nagaland.

As per the Sixth Economic Census (2013-14), Manipur had the lowest percentage of women

owning proprietary establishments among the eight Northeast states, 20 percent to Tripura's 89 percent (the highest in the region), while the national average stood at 78 percent.[8] However, as per the 73rd round of the National Sample Survey (2018), Manipur had 481 women-owned micro, small, and medium enterprises (MSMEs) per 1,000 MSMEs, while the national figure stood at 195 per 1,000 MSMEs, making it the top-performing state (see Figure 2). Undoubtedly, entrepreneurs like
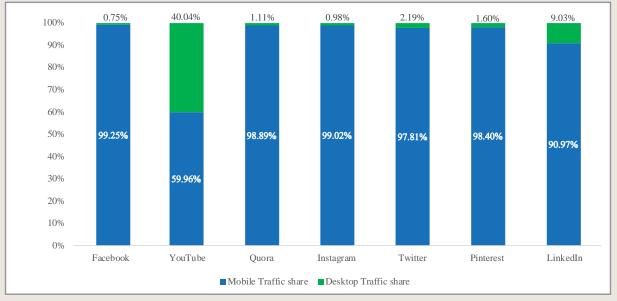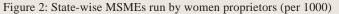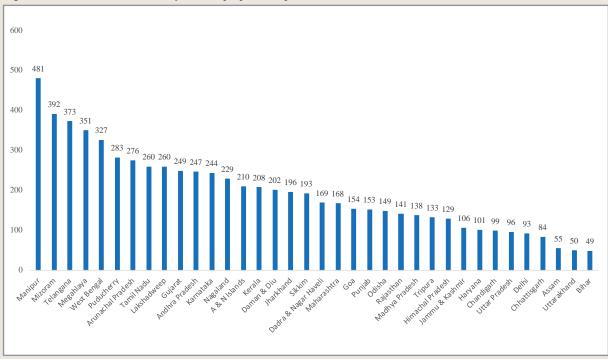
Figure 1: Platform-wise distribution for different social networking sites (2019)

Source : SEMrush statistics[9]

Figure 2: State-wise MSMEs run by women proprietors (per 1000)

Source: Author's own, data from Ministry of MSME, Government of India.[10]

Singmila have made major contributions to these statistics not only by pursuing their own businesses, but also by inspiring other women to do so.

Singmila's message to all youngsters who might become side-tracked into using social media for unproductive purposes is straightforward: "Young people should first identify what they love, and then use technology whole-heartedly to reach their goals. It should upgrade and improve their lives."

Soumya Bhowmick

KEY LESSONS

- Improving access to necessities such as electricity and internet connectivity is key to eliminating some of the constraints that can hinder efficient leveraging of technology to run MSMEs, especially in the remote parts of the country.

- Amplifying and catalysing the efforts of women entrepreneurs seeking to gain digital literacy to systematically expand the scope of their businesses requires a strong ecosystem of support from public and private players, and civil society organisations. For example, women entrepreneurs focused on traditional lifestyle goods are able to reach a larger mass market by using social media and other digital resources, through using these skills to promote their products.

NOTES

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SOMTI GATHIYA
Powered by Tech, Empowered to Lead Change

Situated along the banks of the mighty Narmada River in Madhya Pradesh's Bhopal district is Raipur, a quaint village with a population of 1,855, home to 38-year-old Somti Gathiya.[1] Against the backdrop of the long, winding river, Somti's days are busy with many tasks she must finish before dusk. She manages a Community Information and Resource Centre (CIRC), where she and her colleague Lakshmi *didi* (elder sister) help their community with a range of digital services, including filling online government job application forms, applying for social security schemes, taking printouts, clicking photographs, and creating email IDs.

Raipur village is predominantly populated by the Gond tribe, who are primarily engaged in agriculture and daily labour. Before the CIRC was established, the villagers would travel to Shahpur, the nearest town about 15 km away, for any kind of documentation work for government schemes and job applications. This would invariably result in a loss of a day's wage. Somti and her husband Lakhan were also engaged in manual labour work provided under the government's Mahatma Gandhi National Rural Employment Guarantee scheme,[a] but it did not provide them with a steady income.

In 2010, one of Somti's neighbours insisted she attend a community meeting by the NGO Professional Assistance for Development Action (PRADAN). PRADAN was involved in creating awareness programmes on government rights and entitlements in Raipur. This is when Somti decided to become a community resource person (CRP) for PRADAN, a role that would entail educating and training her fellow community members on ways to access government welfare schemes, while also learning about them herself. "It is important to always keep learning. Education is the only skill that no one can ever take away from you," Somti says, while reminiscing about her own inability to complete her education. With five daughters and four sons, Somti's father did not believe education was important for girls, so she was not allowed to study beyond Class 8. In 2001, she was married at the age of 17 and moved to Raipur.

Technological empowerment of women (aged 15-49 years) in Madhya Pradesh	
Women who have a mobile phone that they themselves use	38.5%
Among women who have a mobile phone, those who can read SMS messages	74.3%
Women who use a mobile phone for financial transactions	23.3%
Women who have ever used the Internet	26.9%

Source: National Family Health Survey, 2019-21[2]

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[a] The scheme guarantees 100 days of paid work for unskilled manual labour in a financial year.

Alongside her work with PRADAN, Somti was also part of Narmada Women's Association, a self-help group (SHG).[b] Somti bought her first feature mobile phone once she started working as a CRP in 2010 as she had to travel to neighbouring villages for field visits and could easily coordinate her visits using the phone. As part of the SHG, during meetings arranged by PRADAN, women started discussing the need to educate youth in the village in digital skills so that they can find gainful employment after completing their school education.

In response to this, in 2015, PRADAN, in collaboration with Digital Empowerment Foundation (DEF) and Tata Trusts, opened computer centres in Raipur and some neighbouring villages. Somti and several other CRPs underwent five days of training in basic digital and technical literacy, including using digital devices like laptops and cameras, saving files, and maintaining records. "The first time I touched the laptop, my hands were shaking with nervousness, thinking what if I press something and it goes wrong," she remembers.

PRADAN was already conducting programmes on governance services, and included these under the digital literacy project. With DEF and Tata Trusts, it set up CIRCs in four villages (Raipur, Pawarjhanda, Jamnagri, and Mudha) to provide such services and programmes at a centre with strong internet connectivity. "Government services were now available online, so we were also given tablets to use to make people aware of the schemes and help them file applications," said Somti. The CRPs were also

trained on how to use these devices to reach the last mile customers who may not have been able to access the CIRCs.

Each CIRC is equipped with a laptop, printer, biometric device, and a digital camera, which are essential for community members to access government schemes. In addition to providing online services, such as video calling, applying for PAN cards and government welfare schemes, Somti and the other women who manage these centres are now also using Google Translate services to understand those parts of some government forms that are only in English.

DEF conducted digital literacy sessions twice every month for 36 women over a period of three years, where they taught them how to operate the equipment and navigate online services. "The DEF trainers were very patient with us, even though it took some of us multiple attempts to learn the easiest functions," Somti says.

The next task was to equip the women and youth in the community with these skills. Somti has conducted classes for 200 school children and other youth who would have otherwise had to travel to the nearest city to learn to use the computer. In sessions with women, she has taught them basic skills, such as switching a computer on and off, using MS Paint, writing their names in Hindi on MS Word and MS Paint, as well as shopping online and using social media (including Facebook and Skype for video calling). Notably, DEF provided completion certificates to all who were trained in social media use.

"There is a certain excitement among the people of my community to learn these new skills. Earlier, I would have to go to them to sensitise them about learning digital ways of doing things, but now they come to me to understand how to use their smartphones and what all they can do with it," she says.
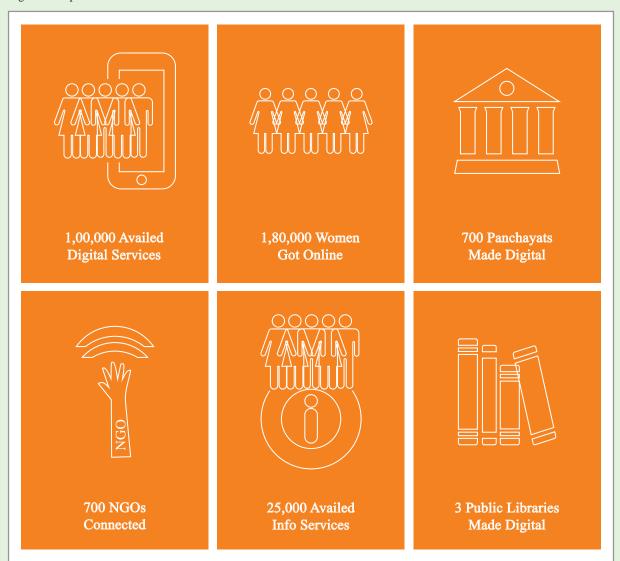
Somti earns a livelihood from her work as a CRP and gets a portion of the earnings from the Raipur CIRC as well. The CIRC charges a nominal fee for each service, which amounts to about INR 6,000 a month. Once the centre's expenses are paid, Somti and Lakshmi share the rest of the money as their monthly income. In 2020, Somti bought her first smartphone from her earnings from the CIRC.

But Somti's journey was not without challenges. The CIRCs were to be aligned with the Indian government's Common Service Centres (CSCs) 2.0 scheme under the Digital India Programme. CSCs are access points for delivering utility services, such as social welfare schemes, healthcare, and education and financial services in rural India.[3] To be aligned to this programme and deliver a bouquet of such services, those operating the CIRCs need to receive a CSC ID. As per the CSC scheme, women are encouraged to become village-level entrepreneurs (VLEs) to run the CIRC, but only those who had studied at least until Class 10 could qualify as a VLE.

"This is when I felt disheartened that I could not complete my education. Even though I know everything, and I am self-learning new things, I cannot hold a certified CSC ID," Somti says. However, Lakshmi was able to acquire a CSC ID and Somti is helping her to run the centre.

In 2018, the Pradan, DEF, and Tata Trusts project concluded, forcing Somti to embrace her entrepreneurial qualities and learn to run the CIRC herself. "I was nervous but very confident as they had provided us skills and qualities that only increases with time and practice," she says.

She soon set out to encourage the women in Raipur to earn a living and make them more aware of their rights. "It is common notion in my immediate community that women are only meant to perform household chores. I want to break this notion by training as many women as possible to become independent and skilled."

She recalls one instance when two elderly widows approached her for help to access their pensions after their applications were repeatedly denied for unknown reasons. On checking the state government's *Samagra* portal,[c] Somti realised that

Figure 1: Impact of CIRC models in rural India

1,00,000 Availed Digital Services	1,80,000 Women Got Online	700 Panchayats Made Digital
700 NGOs Connected	25,000 Availed Info Services	3 Public Libraries Made Digital

Source: Data representation from Community Information Resource Centres[4]

their pensions were being rejected due to incorrect information related to names and age. "I filled a correction form on the website, took them to the panchayat[d] to get their records corrected," she says, and they soon began to receive their pensions.

Technology has enabled Somti to move beyond her days as an unskilled manual labourer, to provide a multitude of services to her community. In addition to running the CIRC, Somti now sensitises families about providing mobile phones and laptops to their daughters and let them complete their education, "Technology can help women be on par with men, boost their confidence and earn a livelihood for themselves," she says, even as she hopes to keep learning as technology advances.

Antara Sengupta

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KEY LESSONS

- Digital literacy training modules should be combined with capacity building trainings in entrepreneurship to create better avenues of livelihood for rural women.

- Digital literacy modules should also consider training women in social networks so that they can use these skills to identify and explore business opportunities.

- Certification courses in digital and social networking skills can help women (especially those who have not completed formal education) access jobs that require basic digital skills.

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[d] Village-level governing bodies.

NOTES

[1] Census of India, 2011: https://censusindia.gov.in/census.website/data/census-tables

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SUSHILA DEVI
Kujti Village's Menstrual Health Advocate

From being considered impure to being believed to be possessed by evil spirits, women have been taught to associate menstruation with secrecy at best, and shame at worst. Across the world, women have been subject to various myths and superstitions revolving around menstruation. There is an increasing awareness on the need to open up on discussions on the subject. This is important, especially for enabling women's access to menstrual hygiene.

Sushila Devi, 33, lives in Kujti village in Rajasthan, which has a population of less than 2,500. With many still shying away from speaking of menstruation, the subject is something of a taboo and has led to the perpetuation of myths, superstitions, and discrimination. In some parts of India, women are often excluded from social and religious events, denied entry into places of worship, and even kept out of kitchens. According to one study, 71 percent of adolescent girls in India are unaware of menstruation until they get it themselves.[1]

Sushila admits that she grew up believing in many myths related to menstruation. "My grandmother used to tell me that as per religious stories, menstruation is a curse. I was told the body of a woman is supposedly vulnerable to evil spirits during this time," She recalls. Sushila's journey of growth, breaking away from misconceptions, and leading her community towards better days, is a long and interesting one.

The story begins in her childhood. Her mother, she says, was a community leader and a huge source of inspiration for young Sushila. She remembers growing up happy and blissful for the most part. Her amicable persona shines through even now; she breaks into peals of joyful, albeit shy, laughter as she shares her story. Watching her mother work closely with their community and flourish as a leader sparked the same desire in Sushila.

She was married at a young age, and received her first phone once she started living with her husband. She grew familiar with the device, quickly learning her way around it. It was when she got her first smartphone that the opportunity to create change came. Sushila had always had an interest in sewing, and with her smartphone, she could pick up even more stitching techniques from the Internet. The Internet was a gold mine of information for her. From sewing to cooking, Sushila—whose formal education ended after Class 8—found a virtual classroom where she could learn new things with just one click.

Technological empowerment of women (aged 15-49 years) in Rajasthan	
Women who have a mobile phone that they themselves use	50.2%
Among women who have a mobile phone, those who can read SMS messages	69.4%
Women who use a mobile phone for financial transactions	20.1%
Women who have ever used the Internet	36.9%

Source: National Family Health Survey (NFHS-5), 2019-21[2]

The internet can also be a vehicle of teaching, and Sushila realised this almost instantly.

She began to teach the women in her community how to use the phone. From basic tasks like calling and messaging, to accessing the Internet and downloading apps that could enable work and education, Sushila began her own masterclass in mobile technology in Kujti. Encouraged by her, many women began to buy their own mobile phones, an important step forward in many of their lives.

Through her training on menstrual health management, enabled by TechnoServe—a non-profit organisation that promotes business solutions to poverty in the developing world, and recognised her potential and interest in working with the community, and who designated her an 'Internet *didi*'[a] (sister)—Sushila learned about the biological factors behind menstruation and the non-biodegradable nature of plastic-based sanitary pads. Using her sewing skills and learning the

techniques online, she soon became an expert at stitching cloth pads. Next, she trained other women in the village to sew cloth pads and encouraged them to look up tutorials on the Internet, and then promoted its adoption among beneficiaries in and around her village. Through this, Sushila was able to intertwine her work as a menstrual health community leader and a digital trainer.

She has worked on tackling two complicated issues simultaneously: encouraging women to have access to mobile phones and leveraging them to their full potential, and increasing menstrual health awareness across her community and ensuring access to appropriate menstrual hygiene tools and items.

Menstrual health management and hygiene are critical to the well-being and empowerment of women and girls. Effectively enabling this will require regular access to water, sanitation and hygiene (WASH) facilities, affordable hygiene materials, proper guidance on good practices and
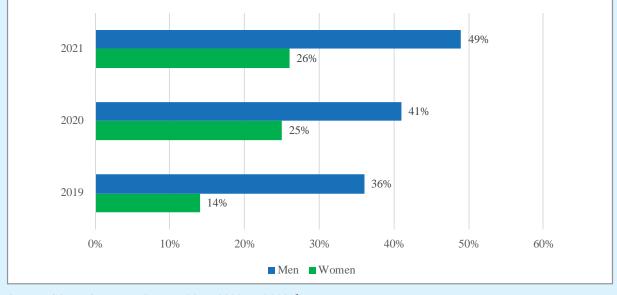
Figure 1: Smartphone ownership in India (2019-21) (Percentage of total adult population)

Source: GSMA Consumer Surveys 2019, 2020, and 2021[3]

[a] A term used by TechnoServe for volunteers who help the community through digital training.

routines, and dismantling the stigma that surrounds menstruation. In addition to this, it is important to make affordable and sustainable hygiene materials.

Her work has not been without challenges. Unsure of how a mobile phone would help them, some women were resistant to learning about it. But Sushila would patiently explain to them the different ways a mobile phone could help their personal growth, in their chores and domestic tasks, and the work their families undertook. For instance, by having information available at the click of a button, farmers could improve their produce and yields, and also connect with prospective markets and consumers. She introduced the women to various apps on different occupations that link creators to consumers so their small businesses could be marketed to more people; taught them the ins and outs of YouTube and how to search tutorials on what they wished to learn; and coached them through video calls and building digital connections. When older women would say

they did not understand how technology could help them, Sushila would simply ask: "If you're alone, and in an emergency, wouldn't you want to reach your family?"

Sushila is now a well-respected figure in her village. She is firm in her beliefs: there is a lot for women to learn on the Internet, and there is nothing that should stop them from gaining that knowledge. Indeed, she says she has seen a change in the women around her. The more they learn about and on the Internet, the more confident they become. With new skills at their fingertips, they are more invigorated and enthusiastic.

Sushila has embodied the spirit of the Internet—she learns, and she teaches. And just like the Internet, she does not stop. "I am, after all, an Internet didi," Sushila says with a laugh.

Noyontara Gupta

KEY LESSONS

- Mobile phones can be used as advocacy tools by community workers and leaders as valuable channels of awareness on issues such as menstrual health and the need for well-functioning WASH facilities.

- The use of mobile phones can be integrated into behaviour change campaigns that aim to dismantle negative attitudes and myths around menstruation, and related stigmas and taboos.

NOTES

[1] Azera Praveen Rehman, "Changing the future with lessons from the past," UNICEF India, May 27, 2022, https://www.unicef.org/india/stories/changing-future-lessons-past#:~:text=A%20UNICEF%20report%20had%20found,lives%20during%20the%20menstrual%20cycle.

[2] International Institute for Population Sciences, National Family Health Survey (NFHS-5), 2019–21: India: Volume 1, March 2022

[3] Ashutosh Kumar and Ananya Gupta, "India's progress on closing mobile gender gap stalled in last one year", Economic Times, June 27, 2022, https://telecom.economictimes.indiatimes.com/news/indias-progress-on-closing-mobile-gender-gap-stalled-in-last-one-year-gsma-study/92494076

TANUSHREE DAS
Leading West Bengal's Majher Char Village into a Digital Future

As morning breaks, a little river of humanity flows out from the village of Majher Char in West Bengal's Nadia district towards the city of Kalyani three kilometres away. The women form colourful clusters as they hoist themselves on to the open vans that ferry them to the city where they work as domestic helps. The men, mostly daily wage labourers, cycle to construction sites and factories, or take an early train from Kalyani to other worksites scattered across the district.

A lull settles over much of Majher Char as the day wears on. Tanushree Das's house, though, is thronged by a stream of visitors who arrive with their mobile phones, a bewildering array of documents, and a palpable sense of urgency. For an ever-growing number of villagers, Tanushree, 27, is the first—and often only—port of call as they learn to use their smartphones to operate bank accounts, make digital payments, avail of public services, and much more.

"Education has always mattered a great deal to me, and even today I try to learn everything I can," says Tanushree, the daughter of an agricultural labourer and a domestic help. Her family would not allow her to continue her studies beyond Class 10, however, and she quit formal education after her board examinations. This is not uncommon. Less than 30 percent of women between 15 and 49 years of age in Nadia have completed 10 or more years of schooling.[1] Submitting to her family's demands, Tanushree married Manoranjan Das, a daily wager, in 2016. But she did not give up on her efforts to become financially independent. The following year, she joined a self-help group (SHG)[a] and purchased a sewing machine with which she set up a home-based business. Impressed by her entrepreneurial zeal, her peers asked her to lead the SHG within a year of her joining.

Tanushree's daughter, Kritika, was born in 2018, but the discovery four months later that the child had thalassemia changed everything. A five-month-long period of hospitalisation and treatment across Kalyani and Kolkata followed. "All the while, my husband and I were trying to understand what thalassemia was, what all these blood transfusions meant, and what the future might hold for our daughter," she says.

Technological empowerment of women (aged 15-49 years) in West Bengal	
Women who have a mobile phone that they themselves use	50.1%
Among women who have a mobile phone, those who can read SMS messages	64.0%
Women who use a mobile phone for financial transactions	12.8%
Women who have ever used the Internet	25.5%

Source: National Family Health Survey, 2019-21[2]

[a] A self-help group is an affinity-based group of 10-20 people, usually women from similar social and economic backgrounds, who collect money from those who can contribute and give the funds to members in need. Members may also save contributions and begin lending funds back to the group's members or to others in a village for a particular purpose. Many self-help groups are linked with banks and can deliver micro-credit.

That frantic period had an unexpected consequence. "For the first time, I realised how indispensable our mobile phone was. I would make appointments with doctors and hospitals, schedule teleconsultations, and sometimes even speak directly to blood donors. Without a mobile, all of this would have been infinitely more difficult," Tanushree says. At the time, her family owned a conventional mobile phone with a keypad, with which one could make calls and send text messages but do little else. Tanushree would use it when there was an urgent need to do so, but otherwise had limited access to it.

Once Kritika's condition stabilised, Tanushree increasingly began to use her family phone to coordinate the activities of her SHG, and encouraged her peers to utilise their mobile phones as well. "There was a marked rise in our SHG's productivity. Earlier, we had to move as a group or visit each other to provide updates. But now we could work from different locations, compare notes, and cover a much wider area. As a result, we were being able to provide loans to many more people who needed them."

Her phone proved invaluable in other ways too. "The local administration would periodically ask us to conduct door-to-door surveys as a part of district-wide initiatives. I would assign the members of my SHG to different localities. Through the day, I ensured that we used our phones to share information about households surveyed and targets met. Our phones were clearly boosting our efficiency," Tanushree says. Additionally, she was very active in helping community members open bank accounts, particularly to facilitate the direct transfer of benefits under the *Pradhan Mantri Jan-Dhan Yojana*, a flagship financial inclusion scheme.[3] Throughout 2020, when the pandemic made it impossible for community members to visit the local bank, Tanushree liaised tirelessly on her mobile between the bank and residents of Majher Char, helping the latter open new accounts. "Almost all these people were dealing with a bank for the first time. It could have been intimidating. I am glad I could support them," she adds.

By late 2021, Tanushree was ready to invest in a smartphone.[b] But she wondered who would teach her to use it optimally. "Taking a loan from my SHG

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[b]A smartphone refers to a phone that is similar to a mini-computer and offers a variety of functions besides being able to make calls and send messages. These include using Internet-based apps, surfing and visiting websites, conducting online transactions, and using a phone camera, media players, and GPS navigation systems.

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to buy a smartphone was a turning point," she says. Fortuitously, in early 2022, Anudip Foundation, a civil society organisation, launched a programme to train women community leaders to use Android smartphones. The training programme was supported by a grant from Reliance Foundation and USAID under their joint initiative, the WomenConnect Challenge India, which aims to close the 'gender digital divide' and boost women's economic empowerment in India. The training from Anudip included a focus on digital financial literacy, the use of mobile apps for online banking and other services, and the use of social media platforms. This was the opportunity Tanushree had been waiting for.

The impact of Tanushree's newly acquired skills has been immediate and profound. Among her first actions was to encourage some of her SHG members to purchase smartphones as well. She then created a Whatsapp group for the SHG. "This has transformed our operations. When our ward office circulates information about new projects, we can respond instantly. This is allowing us to take up many more community development projects than before." Following Tanushree's example, other local SHGs too have begun using Whatsapp to engage with stakeholders.

Tanushree has emerged as a strong advocate of digital identity, and the use of government-issued ID cards to access benefits. She uses her smartphone to register community members for digital ration cards so that they can claim their entitlements.[4] She has also helped nearly 200 villagers obtain Aayushman Bharat e-cards that will offer access to an array of

health benefits,[5] and e-Shram cards that will bring informal workers under the ambit of social and digital welfare.[6] "I also constantly guide people to link their Aadhaar cards to their mobile phones, and explain the benefits of doing so," she adds.

Perhaps Tanushree's most impactful contribution has been to popularise mobile banking and digital payments. "This has been a natural extension of helping people open bank accounts. I train community members to operate their bank accounts through mobile apps, and people have responded enthusiastically," she says. She observes with a laugh that there is great excitement about checking bank balances to see if benefits and cash subsidies have come through on time. Tanushree has also helped community members link their accounts to payment platforms such as GPay, PhonePe, and Bharat Interface for Money, and taught them to make digital payments. Thanks to her efforts, online payment systems have become very popular and many of Majher Char's inhabitants now routinely use them to pay electric bills, recharge their mobile phones, and transfer money. A large number of other villagers who do not have phones themselves ask Tanushree to make payments on their behalf, and reimburse her in cash.

Tanushree has grown adept at using the social media. To arrange for her daughter's monthly blood transfusion, she has created a Facebook group dedicated to Kritika that includes her pictures and information about her condition. "I use the group to engage with potential blood donors, and to line up donors for the months ahead," she says. She recently discovered that another inhabitant of her village is

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[c] Bharat Interface for Money, or BHIM, is a mobile payment app that lets users make simple and quick transactions (direct bank payments and requests for money) using India's Unified Payments Interface. Developed by the National Payments Corporation of India, BHIM was launched in 2016 as a tool for enabling digital empowerment and financial inclusion.

thalassemic, and has involved in the task of finding donors for him too. Notably, through all her trials, she has kept up her work making dresses with her trusty old sewing machine. In fact, her business has expanded, and she now uses YouTube to learn new designs and embroidery techniques.

Today, Tanushree's reputation as a leader has spread far beyond Majher Char. There is a surge of interest in her digital skills. She is flooded with requests from across the district to train other SHGs. "Here again, technology comes to my rescue," she chuckles. "When I have to visit remote, unfamiliar villages, I use Google Maps to get there."

In her village, Tanushree is an icon. "What is most important is to be patient with people, to be generous with your time, and never to turn away someone who needs you," she believes. It is not surprising that villagers crowd her house at all hours

when she is at home, and depend on her to help them navigate a new digital world. From registering people for COVID-19 inoculations on the CoWIN platform,[d] to booking their train tickets through an app, she is making the life of people in her community easier.

Tanushree's position in her own family has changed too. She is perceived as an equal and accorded a level of respect that was not always present previously. As she watches Kritika, now a bright-eyed four-year-old, scamper about the house with an oversized teddy bear, she says quietly: "Independence is the basis of empowerment. That is what I want for my daughter. That is what I want for all women."
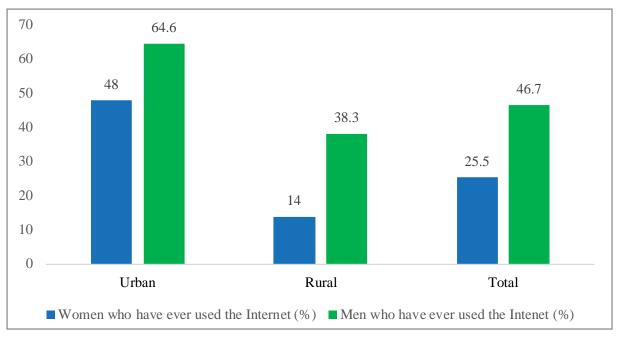
Anirban Sarma
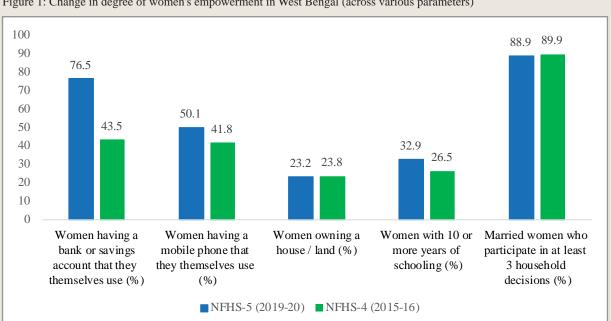
Figure 1: Change in degree of women's empowerment in West Bengal (across various parameters)

Source: National Family Health Surveys 4 and 5,[7]

[d]An online platform set up by the Indian government for citizens to register for their COVID-19 inoculations.

Figure 2: Internet use in West Bengal, 2019-20
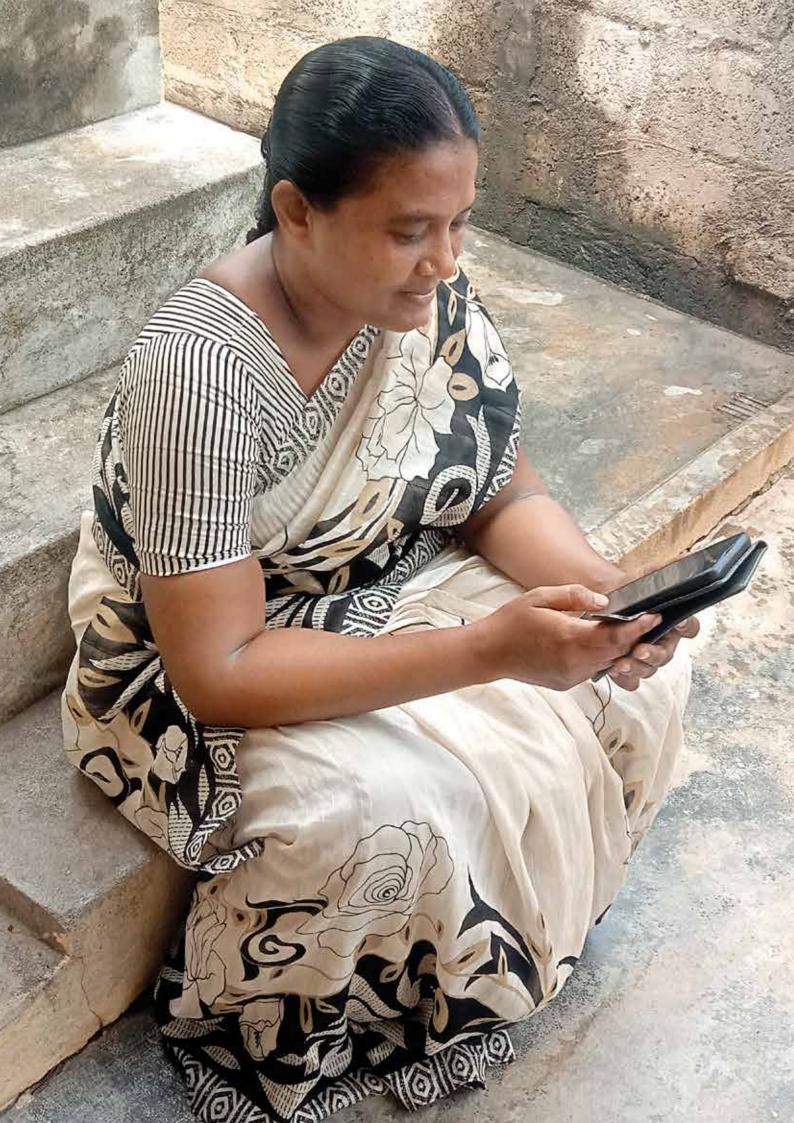

Source: National Family Health Survey 5,[8]

KEY LESSONS

- There is a high demand for mobile banking, digital payments, and e-services in rural areas. Cadres of grassroots technology evangelists could be trained to build excitement about these services, and introduce communities to the devices and applications needed to access them to help expand the reach to the last mile.

- Basic smartphones can help SHGs to greatly expand the scope, depth, and income-generating potential of the groups' interventions.

NOTES

[1] National Family Health Survey 5 (2019-20), "District Fact Sheet: Nadia, West Bengal", http://rchiips.org/nfhs/NFHS-5_FCTS/WB/Nadia.pdf http://rchiips.org/nfhs/NFHS-5Reports/NFHS-5_INDIA_REPORT.pdf

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TULASI YERAVEDA
The Farmers' Teacher

Small farms dot the rocky landscape of Andhra Pradesh's Kothapalem, a hamlet of around 1,000 people that leapfrogged the broadband revolution to join the mobile internet bandwagon. As Kothapalem was charting a new course about a decade ago, one of its inhabitants, a marginal farmer named Tulasi Yeraveda, 38, was on the cusp of her own transformative journey.

One of four daughters born to a well-respected farmer couple, Tulasi took to education with zest. To continue schooling beyond Class 5, she walked the dusty paths to the next village four kilometres away as the school in Kothapalem only offered primary education. In the 1990s, when Tulasi finished schooling, she had beaten the odds as many girls in her community at that time did not have that same opportunity. Tulasi was keen to become a teacher but instead, she was married at 15. Her marriage ended in about two years, and at 18, she was a single mother of two children.

Undeterred and mindful of her family's growing needs, Tulasi returned to her parents' home to work on their two-acre farm. As a child, Tulasi had helped out on the family farm after school and was accustomed to the work involved and the bountiful yields in a region that is known for its fertile lands. What she was not prepared for, however, was the decline in yields due to the changing climate and, more surprisingly, the reactions of the villagers to her attempts at farming sustainably.

"I used to receive advice to adopt sustainable ways of farming in the wake of environmental changes in the village, but I did not pay heed until 2016. That is when my chilli crop was affected by excess rainfall and subsequent pest infestation. A few community resource persons [CRPs] had come to help me salvage the crop even as I was being advised by other farmers to discard and sow afresh. That year, I made organic preparations to control and minimise the damage as suggested by the CRPs and was able to harvest two quintals from what was considered a lost cause by the village," she says.

Indeed, the Indian Council of Agricultural Research projected a decline in rice yields between 2.5 percent and 7 percent by 2050, while wheat yields were projected to fall by 6 percent to 25 percent by 2100.[1]

Technological empowerment of women (aged 15-49 years) in Andhra Pradesh	
Women who have a mobile phone that they themselves use	48.9%
Among women who have a mobile phone, those who can read SMS messages	61.4%
Women who use a mobile phone for financial transactions	21.4%
Women who have ever used the Internet	21%

Source: National Family Health Survey, 2019–21[2]

The climate-induced changes that Tulasi saw across her village strengthened her resolve to fully embrace organic farming. But the more experienced farmers in the village ridiculed her for this. To them, a lone woman attempting what Tulasi described as the hardest version of farming seemed preposterous when those investing more resources were seeing declining yields.

"In the market square of the village, I was taunted and challenged. I was asked if I would be able to produce as much as one bag of paddy or one quintal of chilli. I did not get much support," says Tulasi.

Though hurt, she refused to give in to the taunts and continued learning and following the CRPs, mainly through videos they showed on pico projectors and mobile phones. Over the next three years, she had worked harder on her farm to get the land accustomed to organic farming.

"I produced 15 bags of rice and 17 quintals of chilli in the first year after I went organic. This was about half of what other farmers produced. I was very proud of this. After three years of making the shift to organic farming, I began producing as much as other farmers. It takes time for the land to get used to new ways of farming," she says.

After getting trained as a CRP in 2016 by Digital Green, an organisation that helps smallholder farmers leverage technology, Tulasi began promoting organic farming among other farmers. Becoming a CRP also helped her continue her advocacy work with women's groups.

"When I was growing up, it was not easy for girls to venture out of their homes and meet people beyond their circle of friends. In 2012, I made a conscious effort to become socially active and help other people. So, I joined the village organisation.[a] Since I was among the few members who were educated, my services were helpful," she says.

That year was also the first time Tulasi used a mobile phone. For someone who hailed from a home that was a 'communications hub' of sorts for the village—the first home in Kothapalem to have a television and a landline—Tulasi made a late shift to mobile technology, but was able to quickly taketo it. She used it for bookkeeping activities, internet banking and bill payments for the village organisation, and began to avail of government schemes such as social security pension, fee reimbursement for her son's higher education, and Rythu Bharosa, the Andhra Pradesh government's monetary farmer assistance programme. As a CRP, she also used her phone to disseminate farming related videos, including a few which featured Tulasi sharing her experiences with organic farming.

"Convincing farmers is easier said than done. They tend to look to someone prescribing expensive remedies and are sceptical of free sources of knowledge. They were not aware of the root cause of problems, like lack of pest resistance in their crops," Tulasi says.

In 2017, the chilli crop in Kothapalem was destroyed by the Geminivirus spread by white mites.

The virus is known to lay waste to entire fields. But this turned out to be Tulasi's moment to shine.

"We reached far and wide to show videos that demonstrated preparation and application of natural substances to protect the plant by curbing infestation and by building pest resistance. I also showed the farmers my farm. That year, the total crop loss was prevented and nearly half the village's crop was saved," she says. It was easier to connect with farmers through video demonstrations as video consumption on the internet remains among the top five uses of the internet and the bigger chunk of video consumers, 54 percent of the approximately 440 million internet users who watch videos on the internet, are in rural India.[3]

Tulasi's reach in the village continued to grow as new ways to communicate emerged and internet coverage improved. She began using chatbots on WhatsApp and also taught many other farmers to use it. Digital Green had introduced chatbots on WhatsApp to several CRPs and farmers in Andhra Pradesh to help them get information on multiple crops at varying stages of the crop lifecycle, and information on pest related issues and improved farming practices. The uptake in chatbot use in the village came just ahead of the COVID-19 pandemic and related lockdowns.

"The smartphone was a lifeline during lockdowns. Advisories reached farmers and their queries were addressed through chatbots. The use of smartphones, internet, and other apps grew manifold after the pandemic struck. I now market my produce

[a] The village organisation is a collection of self-help groups.

through WhatsApp," she says, adding that the voicebot should be the next big thing in agricultural extension as farmers who are not literate can easily use it.

The village is now fully acquainted with Tulasi, her work and the accolades she has received, including being given the opportunity to showcase the organic produce from her district at the Kisan Unnati Mela of 2018 in New Delhi that was attended by Prime Minister Narendra Modi. She has been instrumental in encouraging nearly all women in Kothapalem to enroll in self-help groups, and teaching them skills needed to function effectively as a collective, thus fulfilling her childhood ambition of becoming a teacher. Her journey to teaching may not be conventional, but it has been highly impactful, with more than half of the village benefitting from it.

"Kothapalem has sampled the benefits of organic farming and continues to learn more about it, but not all farmers have taken to it fully. First, it takes a lot more effort than what farming normally demands. Second, it takes time for the land to get accustomed to it. Third, many farmers are not landlords and lease land for one or two seasons. It is not guaranteed that they will till the same land in the coming year. Finally, there is a need for a market that recognises the value of organic produce to encourage farmers," she says, outlining the many challenges confronting organic farming.

But armed with her smartphone, Tulasi is geared up to take them on.

Rohit Pillandi
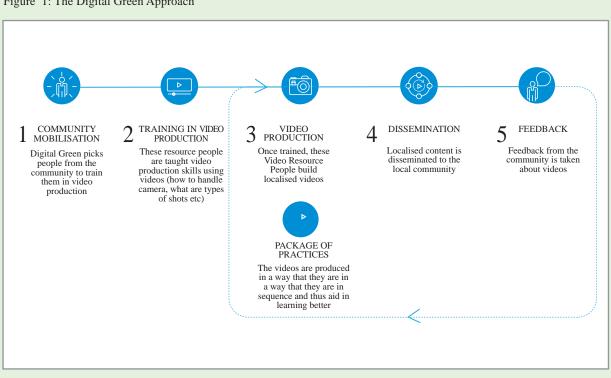
Figure 1: The Digital Green Approach

1 COMMUNITY MOBILISATION
Digital Green picks people from the community to train them in video production

2 TRAINING IN VIDEO PRODUCTION
These resource people are taught video production skills using videos (how to handle camera, what are types of shots etc)

3 VIDEO PRODUCTION
Once trained, these Video Resource People build localised videos

PACKAGE OF PRACTICES
The videos are produced in a way that they are in a way that they are in sequence and thus aid in learning better

4 DISSEMINATION
Localised content is disseminated to the local community

5 FEEDBACK
Feedback from the community is taken about videos

Source: Digital Green

KEY LESSONS

- The mobile phone is helping fill a great void in agriculture knowledge in rural farming communities, especially where levels of literacy are low.

- For farming communities, seeing the success of fellow farmers is crucial in their decision to learn and implement new techniques and interventions. Therefore, efforts at creating awareness regarding sustainable practices should be demonstrative and digital can help to expand the reach to the last mile.

- Digitally accessible market avenues that reward sustainable ways of farming may also encourage farmers, especially women, who may own or till small landholdings, to adopt new techniques.

NOTES

[1] Ministry of Agriculture & Farmers Welfare, Government of India, "Effect of Climate Change on Agriculture," February 9, 2021, https://pib.gov.in/PressReleasePage.aspx?PRID=1696468

[2] International Institute for Population Sciences, National Family Health Survey (NFHS-5), 2019–21: India: Volume 1, March 2022, http://rchiips.org/nfhs/NFHS-5Reports/NFHS-5_INDIA_REPORT.pdf

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OUR APPROACH

Aspirations, Access & Agency: *Women Transforming Lives with Technology* is the second publication in a series by Reliance Foundation and Observer Research Foundation about women who have traversed the path of self-empowerment and gone on to transform their communities.

When we started on this book in July 2022, our aim was to cover, as far as possible, India's geographical span, and to present the stories of the women profiled in their own voices. These stories come from the country's north and south, east to west, its northeast and its very centre.

Diving into the lives of a group of extraordinary women in just two months was an ambitious undertaking. In July and August 2022, we held discussions with civil society organisations (CSOs) to identify women changemakers from around India. Technology came to our rescue at this point and, aided by our CSO partners, we connected with the women through extensive video interviews. We are grateful to them for trusting us with their stories.

In a few cases, such as that of Singmila Kapai, an entrepreneur from Manipur, the interview took place over the phone as Internet connectivity can be sporadic in parts of the Ukhrul district in Northeast India. We also conducted a detailed telephonic interview to get to know Somti Gathiya from Bhopal in Madhya Pradesh, in central India, as her Internet package could not be renewed in time for the interview.

Each interview was supplemented with secondary data gathered from government sources, academic studies, CSO surveys, and media reports.

ACKNOWLEDGEMENTS