



DEF COVID-19 GROUND REPORT SERIES

## SMARTPHONES & DIGITAL SCRIPTS: Overcoming Literacy Barriers







DEF COVID-19 GROUND REPORT SERIES

## SMARTPHONES & DIGITAL SCRIPTS: Overcoming Literacy Barriers

## RURAL ORAL SMARTPHONE USE: Overcoming Literacy Barriers

This article is a part of DEF's Research and Advocacy paper series.

This work is licensed under a creative commons Attribution 4.0 International License.



You can modify and build upon document non-commercially, as long as you give credit to the original authors and license your new creation under the identical terms.

Cover pictures: Digital Empowerment Foundation

Author: Osama Manzar and Kriti Singh  
Design and Layout: Shaifali Chikermame  
Year of Publication: 2020

Re-published and Distributed by:  
Digital Empowerment Foundation  
House no. 44, 2nd and 3rd Floor (next to Naraina IIT Academy)  
Kalu Sarai (near IIT Flyover)  
New Delhi – 110016  
Tel: 91-11-42233100 / Fax: 91-11-26532787  
Email: [def@defindia.net](mailto:def@defindia.net) | URL: [www.defindia.org](http://www.defindia.org)

# Smartphone as a tool for functional literacy in rural India

***With the penetration of mobile phones standing at 30 percent in India with over 200 million users in rural India alone, the flow of information has become seamless. Being digitally connected with more than 400 million users of Facebook alone and over 450 million WhatsApp users, people are increasingly consuming information through such platforms. Therefore, interpreting the numbers that 200 million owning a mobile in villages equals 200 million households.***

It is interesting to note because the literacy level in rural India is comparatively low. Despite this, the accessibility and usage of smartphones are higher and is increasing at a steady pace each year. The GSMA report on mobile connectivity stated, “There were notable increases in mobile broadband coverage in Pakistan and India; in fact, almost half the population covered by mobile broadband networks in 2019 was driven by the expansion of 4G coverage in India to almost 99% of the country’s population.” This is largely because India is a mobile-first country. People skipped laptops, televisions, tablets and came to directly use personal screens- mobile phones. It emerged as the most connected country, although there are still parts which still remain unconnected.

## DEF COVID-19 GROUND REPORT SERIES

*Despite the Internet increasingly becoming the medium for facilitating access to social protection and thereby the basic need, the preference ordering potentially indicates the discernment between Internet as a medium versus Internet as an end use.*

To further gauge the usage of smartphones in Rural India, Digital Empowerment Foundation conducted a survey - Roti, Kapda, Makan (trans. Food, Clothing, and Shelter)-covering 14 states and 51 rural and underserved districts. The respondents were asked to rank Roti, Kapda, Makan, Employment, Mobile and Internet in the order of preference. The results showed that Roti, Kapda, and Makan occupied the first, second, and third positions, followed by Employment, Mobile and Internet.

Despite the Internet increasingly becoming the medium for facilitating access to social protection and thereby the basic need, the preference ordering potentially indicates the discernment between Internet as a medium versus Internet as an end use. The results also indicate the indispensability of physiological needs and the need for progressive meeting of those needs in moving towards mobile and Internet as end use that expands social and economic equities for an individual.

Interestingly, the Internet has wedged its way right after Food, followed by Employment, House, Clothing, and Mobile. Nearly 70% of the respondents ranking the Internet as their first preference were below 30 years of age. Digital Empowerment Foundation's substantial experience and learning in leveraging digital technologies to drive change in and through access to infrastructure, education, governance, and citizen services, and markets and social enterprises shows how individual ownership and usage have accelerated outcomes in adoption.

Another important reason for the pervasive use of smartphones and other ICT tools is the acceptance of symbols by the masses across ethnic and linguistic diversity, indicating that symbols are the powerful tool of expression and the creation of narratives.

## DEF COVID-19 GROUND REPORT SERIES

These symbols have empowered 200 million smartphone owners in rural India, despite many of them not receiving formal education, to share content that moves or influences them. The use of symbols and oral language thus creates an inclusive environment and helps in overcoming learning barriers. More importantly, it has been able to transcend the English-dominated virtual world, and now the users can identify apps using symbols. The point being that symbols and oral communication together helps develop visualisation, which has its own pros and cons.

Today, the scope of digital opportunities is more diverse and plenty than it was before. We've come to a point where our dependency on digital infrastructure, digital content and the digital economy has increased due to pandemic induced remote working and social distancing norms.

The Rural Oral Smartphone compendium attempts to establish the fact that the rapidly emerging Digital India is moving beyond the Census definition of literacy as more and more people are not just owning a smartphone but deploying it for basic necessities and access to information through symbols as identifiers. Here are a few “illiterate” people who are using smartphones to become community journalists; learning English to become cricket match commentators; sharing their folk music on YouTube; using WhatsApp to find buyers for their handloom and handicraft or just simply using emojis and audio notes to communicate with their loved ones. It is interesting to see how people in rural, remote and tribal locations with no formal education and lack of knowledge of a script are engaging in fluent conversations in real time through audio notes, video calls and a bucket full of emojis to express an entire thought without any letter at all.

*The Rural Oral Smartphone compendium attempts to establish the fact that the rapidly emerging Digital India is moving beyond the Census definition of literacy as more and more people are not just owning a smartphone but deploying it for basic necessities and access to information through symbols as identifiers.*

## DEF COVID-19 GROUND REPORT SERIES

*It is interesting to see how people in rural, remote and tribal locations with no formal education and lack of knowledge of a script are engaging in fluent conversations in real time through audio notes, video calls and a bucket full of emojis to express an entire thought without any letter at all.*

As Osama Manzar, founder-director of Digital Empowerment Foundation rightly said, “Breaking the barriers of languages - symbols, sounds gestures have been a part of human communication from time immemorial. In the contemporary Digital Era, we have gone a full circle and returned to the use of symbols in a more developed pattern.”

*Here are examples of a few individuals who mastered the art of using smartphones to become community journalists, learning English to become cricket match commentators, sharing folk music on YouTube, and using WhatsApp to find buyers for their handloom and handicraft materials, and all of them jumped into becoming digitally literate and skilled without being comprehensively literate, educated, schooled or qualified. All the 20 examples shared are diversely selected from across the country to prove a point that access to digital device or access to smartphone enables the users to use their natural instincts to use all possible oral functionalities like voice, images, signs and symbols, illustrations, graphics, cartoons, videos, and emojis to access any kind of content and also produce creative content. In most of the cases, it has been learnt that the modern abilities of a smartphone, being a multimedia device overcomes the barrier of being written literate and empowers communities and masses who converse orally and without written scripts. In fact the following examples ascertain that digital device like a mobile is an audio visual tool that also proagates digital as a language, a script, a medium, a communication, a listener and a speaker to enable complete functionality that a human wants to do in their daily lives.*



## Returning to symbols

Baleshwari Bhoi got to experience a smartphone for the first time in 2015. This is true for a country like India, which is although the second most connected in the world, it is still far from it, given the huge population. Women in India are 20 per cent less likely to use mobile Internet than men. This gap is even higher in rural India where there are only 200 million smartphone users. But with increasing penetration, even though women do not usually own a smartphone, like Baleshwari, they are learning to operate it. She had just attained education till 7th grade before she got married. With time with the help of her husband she learnt how to receive calls, take photos, search videos on Youtube- all by identifying and recalling the icons of these apps. In the contemporary Digital Era, we have gone a full circle and returned to the use of symbols in a more developed pattern shattering the barrier of language.

---

*“Now, I feel more empowered as a woman.”*





## Road towards independence with a smartphone

Shibani Mohapatra is a differently-abled person from Nua-patna in Odisha. Nuapatna, located in the Cuttack district, is a cluster of some of the most talented weavers and national awardees. It is home to more than 5,000 weavers who make the most intricate ikat designs on silk and Tassar, many using natural dye on sarees, stoles and dupattas — sometimes taking years at a stretch to be made. Shibani, after getting married into a weaver family learnt the art. But due to marital problems, she came back and started working with her father in handloom production. Soon she had enough money to buy a smartphone proving that for a woman nowadays owning a smartphone symbolises a step towards becoming independent. Her sister, who is a class 10 student, also borrows it for her studies.

---

*“Today, I believe in myself. This small device has boosted my confidence and transformed me into a financially independent woman”.*

## Howzzthat...!

Rabu Khan from Barmer, Rajasthan, has become a household name for his cricket commentary in fluent English. Interestingly, Rabu has not received a formal education but his love for cricket made him learn English through the radio in his smartphone. While listening to cricket commentaries on radio he eventually picked it up and began commentating for local matches. Although he still cannot read or write in Hindi or English, his spoken skills have bowled over the whole district.

---

*I started learning English because of my passion for cricket. Now, I have become a local star, as people call me “Gaon ka Navjot Singh Sidhu”.*





## Making a Brand

Balaji is a young weaver from Chirala near Vijayawada, Andhra Pradesh. Kuppadam Pattu and Kanchi Kuppadaalu are specialties of local handloom weaving, but due to health concerns, people over 50 years of age are unable to continue those traditional weaving techniques and very few youngsters are adapting to the skills. Balaji is one such weaver who showed keen interest in learning traditional weaving skills and has been able to continue the tradition. Being young, although illiterate, he uses smartphones and by continuously exploring, he has been able to find ways to use various features and tools in the smartphone to expand his weaving business.

---

*“I am a weaver. I love to weave the fabric of my culture, and it is my responsibility to keep it alive, which now I am doing it through my smartphone”.*

## Oral power of smartphone and Internet

“Because of my smartphone, I forget I am blind,” said Arjun Kele from Kelewadi village in the Marathwada region of Maharashtra. Kele is 100% blind but his smartphone with ‘talkback’ feature has made his life easier. A graduate, he is currently looking for a job, using his smartphone. Apart from this he uses it to access WhatsApp, Facebook, YouTube and even rides a bike using Google Maps. Interestingly, he has an impressive memory and remembers all the 250-300 contacts on his phone. He hopes that Google comes up with more efficient technology specifically to aid a blind person in his day-to-day activities.

---

*“Who says I cannot see the world? I see it through this mobile”.*





## English-Vinglish

Just the 10th standard pass that too from a Hindi-medium school, Deepika Pradhan of Remta Village in Bargarh district, Odisha, ensured that her kid studies in an English-medium school. While the area is rich in history and is known for Sambalpuri design, it still lacks digital inclusion. A weaving cluster, the penetration of smartphones is in its initial phase. For Pradhan, the main purpose of using a smartphone is to be able to help her kid be fluent in English. Although she does not speak the language, through the smartphone she plays educational videos on YouTube to help in her studies.

---

*I am a happy mother as now my kid will be able to learn English easily.*

*“Google wale babu mera gaana chala do”*

Kiran Yadav could not complete her formal education. But this did not deter her from confidently using a smartphone with initial help from her husband. Google Assistant and the smartphone's microphone have been saviours for her. With its help in her language (Hindi), she helps her kids in their school work, be it calculations, math tables or just educational stories sometimes. For her entertainment as well, she just speaks into the microphone and watches her favourite daily soaps, movies or video calls her relatives.



---

*“I am no more an uneducated woman. I know everything as now the information is just a touch away”.*



## Staying connected to the heritage

Sanjukta Pradhan lives in Remta Village of Bargarh district, Odisha. It is one of the illustrious districts of Odisha and has been named after the headquarter town Bargarh situated on the left bank of the Jira river. Sanjukta has been a house wife but has also been involved in traditional work of handloom weaving. Bargarh is famous for Ikkat type of handloom weaving, extremely intricate form and well known for its tie and dye techniques. Sanjukta does not have her own phone but she has the liberty to use her husband's phone. Her husband has a smartphone. Both Sanjukta and her husband are illiterate and uneducated. Their form of conversation is oral and their language is colloquial Odiya. Their pattern of content consumption on a mobile phone is based on audio-visual and oral. They like watching videos and listening to music and gradually they have figured out what applications on the smartphone to use without having to write. Lately Sanjukta is specialising in traditional dance form using YouTube. Besides, she uses the smartphone to enhance her designs and creativity of Ikkat design.

---

*“This small device has transformed me into an informed citizen”.*



## Sustaining Art through WhatsApp Business

Ravi R is a weaver from Kollegal, Karnataka, working to preserve his community's art of intricately designed silk sarees with zari work. An illiterate, Ravi with his son is now trying to expand his customer base through digital training received by Digital Empowerment Foundation. A bit hesitant initially but, with the right push from his son, he recently started using digital payments. After the training, he immediately downloaded WhatsApp Business to create a catalogue to send to his customers living in Karnataka and Tamil Nadu. He is now realising how much easier it is through WhatsApp business to reach out rather than physically travelling to cities to sell. He had opened the WhatsApp business account from the same number as WhatsApp but will soon buy a second number.





## Ok Google!

Jagdish Pal, 34, is from Fatehabad, Chanderi, Madhya Pradesh and works as a waiter. Chanderi is famous for heritage and history and also for the silk sarees known as Chanderi Sarees. Therefore Chanderi attracts a lot of tourists both national and international. Jagdish usually has a busy life serving diverse visitors and always felt deprived as he was unable to communicate properly with them. As soon as he got hold of smartphone he realised that he can learn and do many things through mobile without being able to read and write. Although not formally educated, he gives voice commands to fire up his smartphone and uses applications like WhatsApp and Facebook, watches movies, listens to songs and stay connected to his near and dear ones. He tries to read Hindi but he mostly is able to navigate his way through voice command. He is now learning English to be able to converse with tourists.

---

*“I am illiterate and cannot read and write, but because of my mobile I am no more handicapped. I can do everything that I was unable to do earlier.”*

## My smartphone, my mentor

No formal education, no idea how to read or write but his companion - the smartphone has not only been just an assistance but has led him to live a more financially comfortable life. Kishan Ahirwar is a driver in the famous silk saree handloom cluster - Chanderi in Madhya Pradesh. His story is interesting because he searches for anything by just speaking to his smartphone. For instance, Bhopal, he remembers the place and whenever he goes on that road from Chanderi, he recognizes that he is walking on the path. His phone has indeed made him 'smarter' so much so that you take him on any new route, he will be able to reach the destination. Kishan, by using the oral command, can navigate the route, save folk songs, photos, numbers and whatnot. He regularly upgrades his gadget as well like now he owns a Bluetooth to use while driving a car. His smartphone is his assistant, friend and even a mentor to access learning which he could not otherwise.

---

*“I have never been to school and had no mentors who could guide me through the right things or provide me with knowledge, but now I have found one. This device is my mentor. It keeps me informed and shows me the path”.*





## Connecting Hearts

Manisha, a resident of Barabanki, Uttar Pradesh, was compelled to buy a smartphone out of need to stay in touch with her husband. Her husband is a daily wage labourer who has to travel to other cities for work. Newly married, it was becoming increasingly difficult to stay in touch or to see each other. Both of them managed to buy smartphones two years ago, but Manisha had to face another obstacle before she could get connected to her husband - she did not know how to read or write. Since her parents could not afford education, she was deprived of its access, and the use of technology was overwhelming for her. Her brother-in-law, living in the same area, came to her rescue and taught her how to use the smartphone and the first thing she learnt was how to use the camera and video call feature to talk to her husband. Now Manisha knows how to run applications like YouTube and WhatsApp and she is able to locate apps just by identifying their icons.

## Freedom to create and sell directly

Abhir, a 38-year-old weaver from Nuapatna, has been weaving sarees and handloom-based materials for the past 20 years. But financial constraints and the responsibility to look after his family at an early age debarred him to complete his formal education. Lack of formal education and inability to register with any of the cooperative societies brought severe exploitation and economic instability for his family.

But he was eager to work with the freedom to create his own design. Access and ownership of a smartphone boosted his proactiveness and creativity. He figured out the digital world to learn and enhance his designs, product diversification and also use of various tools to explore markets online. Despite all odds, now he can check the prices of various designs online and is confident to negotiate with the master weaver for getting the right value for his work. Abhir is now learning to sell his products directly through online platforms to receive the desired price for his products.



---

*“Mobile empowered and informed me about the rights I have as a weaver”.*

## Promoting women's economic empowerment through digital literacy



54-year-old Malliga is from Kadambadi village of Nagapattinam, Tamil Nadu. Nagapattinam is one of the most backward districts and one of the worst affected districts during the 2004 Tsunami. Her financially poor background meant she couldn't receive formal education. However, with some help she started learning how to use a smartphone. During this time, she picked up skills like tailoring and embroidery through YouTube videos that helped her to become financially independent after her husband's demise. Now, she is extending her knowledge by organising orientations for over 50 members of the Self Help Groups and actively engages in imparting digital literacy to such women.

---

*“Mobile is a blessing in disguise for me. It is like a genie that helped me become financially independent”.*

## Going Online As Leaders (GOAL)

Navti is a 42-year-old Warli artist from Village Sawroli of Palgarh District in Maharashtra. She has been supporting her family financially since the age of 10 at the cost of formal education. She started as a next-door babysitter and earned bare minimum wages, but soon her capabilities attracted better opportunities, and she moved to Mumbai to be an in-house babysitter. She travelled internationally but missed her family, village and her Warli art. She has always had an interest in Warli art which is famous in Palghar.

Her passion to help popularise her traditional Warli art led her to learn various life skills through her smartphone and online classes. Now, Navti has become a leader and is sharing her skills by teaching other women in her community. She also joined the GOAL program of DEF and Facebook for online mentorship and is benefiting tremendously to become a digital leader.



## Self-learning, Self-defense, self-confidence



Agomani Pal is a respected and well-informed woman in Agna village in West Bengal. She always wanted to contribute to the betterment of society since she could not access opportunities due to a lack of education. Agomani came across a video that inspired her to work towards digital empowerment and creating a safe society for women. She started watching videos on various subjects ranging from health, education, finance to self-defence after learning how to operate a smartphone. She formed a group of women from four nearby villages who together started organising interactive sessions. Probably, the first in her community, now she plans to start self-defence classes for women through YouTube videos.



## From tailor to Covid Warrior

D. Laxmi, a 45-year-old tailor and sole earner in a family of four, had no food to feed her family. She belongs to the fishing community in Vishakhapatnam. Due to COVID-19 and lockdown, there was a prohibition on going out in the sea, this left her husband without any scope to earn a living. Laxmi then sought training on how to make masks and managed to procure basic raw materials. She was quick to learn how to make a mask, which helped her availing an alternate livelihood opportunity. It was also the start of her journey to transform from a simple tailor into a digital entrepreneur with a simple digital intervention. She was approached by DEF based on her entrepreneurial skills, got digital entrepreneurship training and is now working as a Soochnapreneur (Information Entrepreneur).



---

*“Now, I am a tailor, a Digital Entrepreneur and a COVID Warrior”*



## Unlocking potential with Google Assistant

A grocery store owner and tailor, Raveena Kumari is the sole earner in her family with huge responsibilities. Resident of Belahwa village in Bihar's Champaran district, she would sometimes struggle with calculation and stock counting at the store and coming up with new designs while stitching clothes.

Then she came across Google Assistant, the oral search engine, which Raveena was able to fit around almost everything in her life. From using it for billing, pricing strategies, learning about business, stitching techniques and designs to listening to music and other entertainment purposes, she was able to understand and utilize Google Assistant to her benefit. She also learnt how to stitch masks using digital tools.

---

*“It was astonishing that a voice was teaching me about the techniques of design and business strategies”.*

## Digital Literacy through oral commands

Lal Kumar Mahto is a hardworking farmer living with his family in Ramgarh district of Jharkhand. He also works as a crane operator to earn extra money to take care of his old parents and sister.

Mahto dropped out of school at a very young age but aims to sponsor his sister's education. A smartphone user, he only knew how to make calls due to lack of digital literacy. He came across Google Assistant and the feature not only helped him get relevant information regarding farming but also acted as a source of entertainment for him. He started listening to music which reignited his childhood hobby of writing poems. His sister also uses the feature to learn English and explore the Internet for education. The smartphone has made him more confident and also increased his knowledge which is helping him both personally and professionally. To top it all, they both use the smartphone through oral commands.

---

*Mobile has made me confident and helped me to grow at a personal and professional level.*



## Smartphone: Guiding the way in times of adversity

“We want to go back home now. We have waited long enough” said Bharat Yadav, one of the thousands of migrant workers who were affected by the Covid-19 induced lockdown and were struggling to go back home. A father of two kids, due to financial constraints, could not afford a train or a bus ticket. Originally from Gaya (Bihar), for the past few years this group of people were working as construction workers in Gurugram, Haryana. Even though they just had a few biscuits and water bottles with them, their spirits were high to cycle till Gaya which is about 1100 kilometres from Gurugram. When asked how they know which way to take, one of them immediately opened Google



Maps and showed, “Sir this is the way. Wherever we are confused we will open this and check.” He had also installed an app that charges the phone using solar energy as, most of the times they are unable to find charging points along the way. Several weeks later, Bharat Yadav also informed back to DEF team how he reached using Smartphone, Google Map, Google Assistant and solar enabled charging tools.





DEF COVID-19 GROUND REPORT SERIES

---

# SMARTPHONES & DIGITAL SCRIPTS: Overcoming Literacy Barriers



Email: [def@defindia.net](mailto:def@defindia.net)  
URL: [www.defindia.org](http://www.defindia.org)