

Understanding the Role and
Potential of M-Health during
Covid-19 Crisis in India

PART

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PART 2 The Great Indian Digital Divide

°INDIA HAS OVER 560 MILLION INTERNET USERS making it the second largest online market in the world after China¹. It is being estimated that by 2023 it would increase upto 650 million users². Despite such a huge user base, the internet penetration stood at around 50% in 2020³. This clearly means that half of India doesn't have access to internet while we boast about our huge internet user base. This gap in access and usage of information and communication technology is referred to as a digital divide⁴. This uneven distribution of internet facility is a result of multifarious social, economic, geographical and geopolitical issues.

Indian society is plagued with infinite hierarchical divisions which run through caste, class, gender, religion etc. where the population at the periphery⁵ is deprived of every basic provision required for leading a healthy, dignified life. The geographical division can be seen in terms of wealth distribution across states and then between the urban and rural areas of these states. The degree of internet penetration is higher in the Southern states of India as compared to the North while Jammu and Kashmir and the North East region remain out of assessment radar due to the paucity of data⁶. Internet penetration remains high down South not only because they are healthier financially but also more literate while maintaining low gender disparity in literacy⁷. In fact, Kerala is at the forefront in modernizing governance by implementing e-governance capacity building enterprises⁸. This could happen because Kerala leads in literacy, infrastructure, human development and quality of life⁹.

As for the rural urban divide, the rural areas or peripheries of the country face infrastructural and societal disadvantages which hinder the digital penetration.¹⁰ Infrastructural shortcomings include low access to electricity, low network connectivity and poor provisions for literacy. The gender and caste structures are quite rigid which further aggravate the problems. Besides, the rural areas are less attractive business spaces for telecom operators as the potential customers are small in number due to low population density and income level¹¹.

Literacy, as has been suggested earlier, should reach to people without gender, religion or caste disparity. It is a fundamental right of every person in this country. Sadly, these disparities exist nevertheless and affect the economic growth of people lying on the margins.

India has an ever increasing digital gender divide which curtails the female

¹ Keelery, S. (2020). Internet usage in India - statistics & facts. Statista. Retrieved from <https://www.statista.com/topics/2157/internet-usage-in-india/>

² Keelery, S. (2020). Internet usage in India - statistics & facts. Statista. Retrieved from <https://www.statista.com/topics/2157/internet-usage-in-india/>

³ Keelery, S. (2020). Internet usage in India - statistics & facts. Statista. Retrieved from <https://www.statista.com/topics/2157/internet-usage-in-india/>

⁴ Caves, R. W. (2004). Encyclopedia of the City. Routledge. p. 179.

⁵ Marginalized section of the country, for eg. Rural India.

⁶ Bassi, A., John, O., Praveen, D., Maulik, P.K., Jha, V (2016)., Mhealth Interventions for Health System Strengthening in India, A Scoping Study Report; The George Institute for Global Health India. Retrieved from https://www.georgeinstitute.org.in/sites/default/files/scoping_health_report_final_uploaded.pdf.

⁷ Literacy in South India (PDF) (Report) (2011). Government of India format=pdf. p. 14. Retrieved from https://censusindia.gov.in/2011-prov-results/data_files/india/Final_PT_2011_chapter6.pdf.

⁸ E-governance implies the usage IT in delivering government services and exchanging information between citizens and government.

⁹ Prasad, K(2012)., E-Governance Policy for Modernizing Government through Digital Democracy in India, Journal of Information Policy, Vol. 2, pp. 183-203, Penn State University Press. Retrieved from <https://pdfs.semanticscholar.org/a8b3/ca2e893db594649d507872923cc37d79e1b0.pdf>

¹⁰ A Rural Broadband Policy Framework providing guidance to address the 'Digital Divide', Rural Broadband Policy Framework: Connecting The Unconnected, Alliance for Affordable Internet (2020), Retrieved from <https://a4ai.org/rural-broadband-policy-framework/>.

¹¹ A Rural Broadband Policy Framework providing guidance to address the 'Digital Divide', Rural Broadband Policy Framework: Connecting The Unconnected, Alliance for Affordable Internet (2020), Retrieved from <https://a4ai.org/rural-broadband-policy-framework/>.

gender from enjoying the benefits of ICT (Information and Communication Technology). Hurdles to access not only involve low literacy but also affordability, conservative socio cultural norms and inherent biases. We often see a boy's education being prioritized as opposed to that of a girl. This most naturally widens the gap in higher education, research and job market where the men dominate. They are confronted with "glass ceiling"¹² which hinders them from achieving their professional ambitions. An example could be taken of the Digital Industry {Information and Communication Technology (ICT) and Science, Technology, Engineering and Mathematics (STEM)} where the scarcity of women are presumed to be associated with their poor understanding of subjects whereas the problem is inherently societal.

Girls from a very young age are fed the thought that science might be the subject more preferable for boys since the job profile might become arduous later in life. Their divergence from what is expected out of them is not eagerly supported in the family emotionally or financially. Besides this, they are discouraged to use the digital platforms without supervision as it might lead to harassment.^{13,14} A woman is time and again reminded that men are their saviors so they should not venture into a new field without men guarding their backs. This mentality is deeply rooted in patriarchy where the society wants men to retain the power and hierarchy by making the field less accessible to women. In India women are also busy with household chores for a substantial chunk of their time because of the assigned gender role by society¹⁵. This leaves them with lesser time to indulge in the digital world.

Another reason why women lag behind in the usage of digital tools and medium is their lack of awareness with regard to the potential benefits they might bring. Women are more likely than men to consider Internet as being irrelevant and useless in one's life¹⁶. The socio-cultural belief that internet is an exploitative and unsafe medium especially for women, contributes to the digital gender divide. There is a general lack of trust in digital devices or internet as it has the reputation of looting gullible poor through complex algorithmic traps. The digital illiteracy is a major cause behind such a line of thought, which is even more pronounced in case of women.

Inequality in literacy has a spiraling effect on women's ability to use ICT facilities. The inequality further deepens with disproportionate wealth distribution, rural-urban divide and caste based disadvantages. People with alternate gender face discrimination all their life which reflects in their severely low literacy and employment rate¹⁷. As a result they too have less accessibility to ICT facilities. Thus, digital gender inequalities act in combination with pre-existing social divisions to further marginalize the population that has already been suffering¹⁸.

There is also a linguistic divide in the medium of dissemination of internet facilities. Most of the web content and applications are in English while a large chunk of our population has been educated in their vernacular language¹⁹.

¹² Glass Ceiling represents an unacknowledged barrier to advancement in a profession, especially affecting women and members of minorities.

¹⁵ Banaji, S., Livingstone, S., Nandi, A., Stoilova, M., Instrumentalising the digital: adolescents' engagement with ICTs in low- and middle-income countries, *Development in Practice*, 28:3, 432-443, Retrieved from <https://www.tandfonline.com/doi/full/10.1080/09614524.2018.1438366>.

¹⁴ A 2014 Pew Research Centre Survey suggests that women in the age of 18-24 experience severe types of cyber harassment including cyber stalking and online sexual harassment. However, instead of training them to tackle cyber harassment, women in India are put under strict patriarchal supervision.

¹⁵ Bridging the Digital Gender Divide PDF, OECD. Retrieved from: <http://www.oecd.org/internet/bridging-the-digital-gender-divide.pdf>.

¹⁶ Bridging the Digital Gender Divide PDF, OECD. Retrieved from: <http://www.oecd.org/internet/bridging-the-digital-gender-divide.pdf>.

¹⁷ About 96% of transgenders are denied jobs, 60% have never attended schools: Study, *moneycontrol.com*(2018), Retrieved from: <https://www.moneycontrol.com/news/india/about-96-of-transgenders-are-denied-jobs-60-have-never-attended-schools-study-2836281.html>.

¹⁸ Livingston, S., Nandi, A., Banaji, S., Stoilova, M. (2017), Young adolescents and digital media; Uses, risks and opportunities in low and middle-income countries: a rapid evidence review, *Gender & Adolescence: Global Evidence*. Retrieved from: <https://www.gage.odi.org/publication/digital-media-risks-opportunities/>.

¹⁹ Prasad, K (2012), E-Governance Policy for Modernizing Government through Digital Democracy in India, *Journal of Information Policy*, Vol. 2, pp. 183-203, Penn State University Press. Retrieved from: https://www.jstor.org/stable/10.5325/jinfopoli.2.2012.0183#metadata_info_tab_contents.

Language is a fundamental barrier in accessing web content especially in the rural areas as the translation software is still in its nascent stage²⁰.

It is surprising that technology which helps in inclusion of communities are themselves exclusionary in practice. The computers and cellphones claim to be “user friendly” but they cater to the needs of certain category of users only. The world of ICT is not friendly to people who are differently abled. The newly enacted Rights of Persons with Disabilities Act, 2016 talks about making India more accessible for people who are differently abled but that is mostly in terms of altering the physical environment such as building ramps or toilets, but the issue of digital inclusion has not found much attention. Similarly older adults face several barriers in operating digital gadgets and their internet services. They are termed as “digital immigrants²¹” since they have spent most of their lives without an exposure to digital media²². The low usage could be motivated by security issues, lack of support at the time of failing physical and mental health, financial insecurity coupled with aforementioned disadvantages in terms of caste, creed, sex, religion etc²³. These barriers keep older adults from making use of digital health facilities, online shopping or banking and even connecting with friends and family through social media or email²⁴.

Digital divide in social context can be equated with William F. Ogburn’s term “cultural lag” which refers to an unequal rate of change between material and non-material culture²⁵. To simply put it, one can say that cultural values take time to catch up with rapidly evolving technological and environmental changes and this lag contributes to social change. We can therefore say that bridging digital divide might indicate a reduction in inequalities based on caste, gender, age, physical disability etc. to some extent, since societal hierarchies contribute to the gap in access to digital resources.

The outreach of ICT based devices is limited also because of low affordability which is a direct consequence of low income levels in developing countries. The non-competitive market and poor infrastructure supporting ICT facilities adds to the problem. There is an urgent need to create a more competitive environment in our domestic market to attract foreign and domestic investments alike for infrastructural development. The competition will lead to a cut in the cost of production with regard to ICT goods and services, elimination of inefficient players and encourage efficient ones to create availability of affordable products. However in most developing countries, governments have meager budgets and limited private investments. The government policies are outdated and often block newer investments²⁶.

The Information Technology Agreement was therefore brought about to lower taxes and tariffs on ICT products by signatories to zero. This step in trade liberalization was anticipating huge boom in imports of ICT products

²⁰ Prasad, K (2012), E-Governance Policy for Modernizing Government through Digital Democracy in India, *Journal of Information Policy*, Vol. 2, pp. 192, Penn State University Press. Retrieved from: https://www.jstor.org/stable/10.5325/jinfopoli.2.2012.0183#metadata_info_tab_contents.

²¹ Digital Immigrant is the one who has acquired familiarity with digital systems; "You are terrified of your own children, since they are natives in a world where you will always be immigrants" Archived 2013-10-23 at the Wayback Machine.

²² Vidal, Elizabeth (October 2019). "Digital Literacy Program: Reducing the Digital Gap of the Elderly: Experiences and Lessons Learned". 2019 International Conference on Inclusive Technologies and Education (CONTIE). San Jose del Cabo, Mexico: IEEE: 117–1173. Retrieved from <https://ieeexplore.ieee.org/document/8971415>.

²³ Friemel, Thomas N (February 2016). "The digital divide has grown old: Determinants of a digital divide among seniors". *New Media & Society*. 18 (2): 313–331. Retrieved from <https://journals.sagepub.com/doi/10.1177/1461444814638648>.

²⁴ Choi, Namkee G; DiNitto, Diana M (May 2, 2013). "The Digital Divide Among Low-Income Homebound Older Adults: Internet Use Patterns, eHealth Literacy, and Attitudes Toward Computer/Internet Use". *Journal of Medical Internet Research*. 15 (5): e93. Retrieved from: <https://www.jmir.org/2013/5/e93/>.

²⁵ Ogburn, W.(1922), *Social Change with respect to Nature and Original Nature*, Retrieved from: <https://archive.org/details/socialchangewit00ogbugoog/page/n12/mode/2up>

²⁶ Pant, Manoj (September 2019). Opinion | India should rid its trade policy of outdated priorities. *Livemint*. Retrieved from: www.livemint.com/opinion/online-views/india-should-rid-its-trade-policy-of-outdated-priorities-1568224695445.html.

There is a technological arms race amongst countries and developing countries suffer the most when faced with acute necessity to import technologies. Low affordability, non-competitive business environment and limited ICT infrastructure has made these countries dependent on the west

round the world, especially in developing countries. But the results were disappointing. ITA could not enable the member countries to overcome the limits set by their per capita income to promote use of ICT²⁷.

This has exposed the necessity of boosting local manufacturing units for increasing the production ICT products. There is a technological arms race amongst countries and developing countries suffer the most when faced with acute necessity to import technologies. Low affordability, non-competitive business environment and limited ICT infrastructure has made these countries dependent on the west. Going by the dependency theory this would mean a further drain of resources to enrich the coffers of the core^{28,29}.

The world today is more reliant on digital medium than it ever was. In India we are being suggested to go cashless^{30,31}, fill online forms for education or employment and involve actively in online learning³², use apps for health related advises (m-health)³³, even the government is planning to go paperless and conduct all the administrative procedures online for record keeping and efficient management³⁴, more so in the times of COVID-19 where contactless services are need of the hour. However we must realize that such a rapid transformation with the huge digital divide that we have is going to exacerbate the pre-existing inequality. Many economically vulnerable sections of people depend wholly on the government for their basic sustenance, in such a case if we immediately adopt digital mode of functioning it would tear up their economic security net. ICT was being touted as the ultimate solution to fill all infrastructural gaps that are there, but we need to first solve the problem of inaccessibility to ICT³⁵.

Increasing digital literacy, making the digital space gender sensitive, removing the barriers of internet access for differently abled, making policy level changes for bettering internet security and penetration, promoting local manufacturing of ICT products can be some of the solutions to tackle inaccessibility to ICT. Local level governments can be roped in to disseminate internet in the interiors of the country.

In fact, the state government of Madhya Pradesh in the year 2000 started an e-governance project called Gyandoot which aimed to register complain and deliver information on crops, forest fields, water resources etc. through computer centres or “soochnalayas” situated at prominent market places or on road sides in more than 600 villages of Dhar district³⁶. Previously, villagers had to travel long distances for accomplishing these goals³⁷. However, the lack of electricity and poor connectivity adversely impacted the project³⁸. The

²⁷ Joseph, L.K., Parayil, G.((Jan. 5 - 11, 2008), “Can Trade Liberalisation Bridge the Digital Divide? Assessing the Information Technology Agreement”, *Economic and Political Weekly*. Vol. 43, No. 1, pp. 46-53 (8 pages). Retrieved from: <https://www.jstor.org/stable/40276444?seq=1>.

²⁸ According to the dependency theory, resources from a “periphery” of poor and underdeveloped states travel to a “core” of wealthy states, enriching the latter at the expense of the former.

²⁹ Wade, H.R.(Oct.–Dec. 2002), *Bridging the Digital Divide: New Route to Development or New Form of Dependency?*, *Global Governance* Vol. 8, No. 4, pp. 443-466 (24 pages). Retrieved from: <https://www.jstor.org/stable/27800358?seq=1>.

³⁰ Qazi, M.(2017), Why we can't hurry into Digital India, leaving the poor behind, *DailyO*, Retrieved from: <https://www.dailyo.in/business/digital-india-demonetisation-cashless-economy/story/1/18782.html>

³¹ http://cashlessindia.gov.in/promoting_digital_payments.html

³² McKenzie, L.(2020), India Opens the Door Wide for Online Learning, *Inside Higher Ed*, Retrieved from: <https://www.insidehighered.com/news/2020/02/17/indian-government-opens-market-online-higher-education>.

³³ Gupta, P.R.(2016), India to become the world leader in Digital Health, *The Economic Times*, Retrieved from: <https://health.economictimes.indiatimes.com/news/health-it/india-to-become-the-world-leader-in-digital-health/55154100>.

³⁴ Go paperless, get PM's award: Government to departments, *The Economic Times*, Retrieved from: <https://economictimes.indiatimes.com/news/economy/policy/go-paperless-get-pms-award-government-to-departments/articleshow/52278049.cms?from=mdr>.

³⁵ Wade, H.R. (Oct.–Dec. 2002), *Bridging the Digital Divide: New Route to Development or New Form of Dependency?*, *Global Governance* Vol. 8, No. 4, pp. 443-466 (24 pages). Retrieved from: <https://www.jstor.org/stable/27800358?seq=1>.

³⁶ Bansode, S., Patil, S. (Jan, 2011), *Bridging Digital Divide in India: Some Initiatives*, *Asia Pacific Journal of Library and Information Science*. Vol.1, No.1, Retrieved from: https://www.researchgate.net/publication/236141535_Bridging_Digital_Divide_in_India_Some_Initiatives

³⁷ Malhotra, R.(Jan, 2018), Gyandoot: E-Governance Project in India, *Medium*, Retrieved from: <https://medium.com/@rridhee/gyandoot-e-governance-project-in-india-9664acf38e9d>

³⁸ Malhotra, R.(Jan, 2018), Gyandoot: E-Governance Project in India, *Medium*, Retrieved from: <https://medium.com/@rridhee/gyandoot-e-governance-project-in-india-9664acf38e9d>

Our ambition to transform into Digital India at the earliest will only be possible if the digital technology is made accessible, inclusive and relevant to our social-economic realities

utmost vulnerable population of the villages did not participate in the project due to socio-economic reasons³⁹ which may have ranged from cultural and linguistic barriers, to low literacy and fear of losing privacy and security. Moreover the project was not marketed well to be able to become a well-known facility⁴⁰. Similar problems could be seen while analyzing Department of Agriculture & Cooperation (DAC)'s initiative of Kisan Call Centre (KCC) where queries related to agriculture and allied sectors were to be addressed by experts on agricultural sciences⁴¹. Variables of digital divide and temporal awareness on KCC plagued a well-intentioned initiative yet again⁴². It is sad that the very projects which were brought about to bridge digital divide suffered because of it.

The central government has proposed yet another ambitious project called BharatNet which promises to provide 100Mbps Internet connectivity to all panchayats through the fiber optical network of Central utilities - BSNL, Rail-Tel and Power Grid⁴³. It aims to help the farmers (by credit extension through digital channels, real time advice on new crops, online price discovery and access to marketing platforms for better returns on crop sale)⁴⁴ and small businesses/MSMEs (through availability of digital tools for business processes, payments and online sales)⁴⁵ by digitally enabling them. However from our past experiences we can understand that to make any flagship program successful, we have to overcome the socio-economic barriers at the grassroots. Our ambition to transform into Digital India at the earliest will only be possible if the digital technology is made accessible, inclusive and relevant to our social-economic realities.

³⁹ Malhotra, R.(Jan, 2018), Gyandoot: E-Governance Project in India, Medium, Retrieved from: <https://medium.com/@rridhee/gyandoot-e-governance-project-in-india-9664acf38e9d>

⁴⁰ Malhotra, R.(Jan, 2018), Gyandoot: E-Governance Project in India, Medium, Retrieved from: <https://medium.com/@rridhee/gyandoot-e-governance-project-in-india-9664acf38e9d>

⁴¹ Bansode, S., Patil, S. (Jan, 2011), Bridging Digital Divide in India: Some Initiatives, Asia Pacific Journal of Library and Information Science. Vol.1, No.1, Retrieved from: https://www.researchgate.net/publication/236141535_Bridging_Digital_Divide_in_India_Some_Initiatives

⁴² Koshy, M. S., Kumar, K. N.(2016), Attitude of Farmers towards Kisan Call Centres, Journal of Extension Education Vol. 28, No. 4, Retrieved from: https://www.researchgate.net/publication/319959802_Attitude_of_Farmers_towards_Kisan_Call_Centres

⁴³ "National Optical Fibre Network Rollout: Centre's nod to some states going solo, bid to push rollout" (Jan, 2016), The Indian Express, Retrieved from : <https://indianexpress.com/article/india/india-news-india/national-optical-fibre-network-rollout-centres-nod-to-some-states-going-solo-bid-to-push-rollout/>.

⁴⁴ Bouton.M.M.(January, 2019),The digital route to transforming farm sector, The Hindu, Retrieved from: <https://www.thehindubusinessline.com/opinion/the-digital-route-to-transforming-farm-sector/article26006290.ece>

⁴⁵ Ganesh, U.(2020), Covid crisis: Why it's time for Indian MSMEs to embrace digital transformation – Four Reasons, Financial Express, Retrieved from: <https://www.financial-express.com/industry/sme/covid-crisis-why-its-time-for-indian-msmes-to-embrace-digital-transformation-four-reasons/1965564/>

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