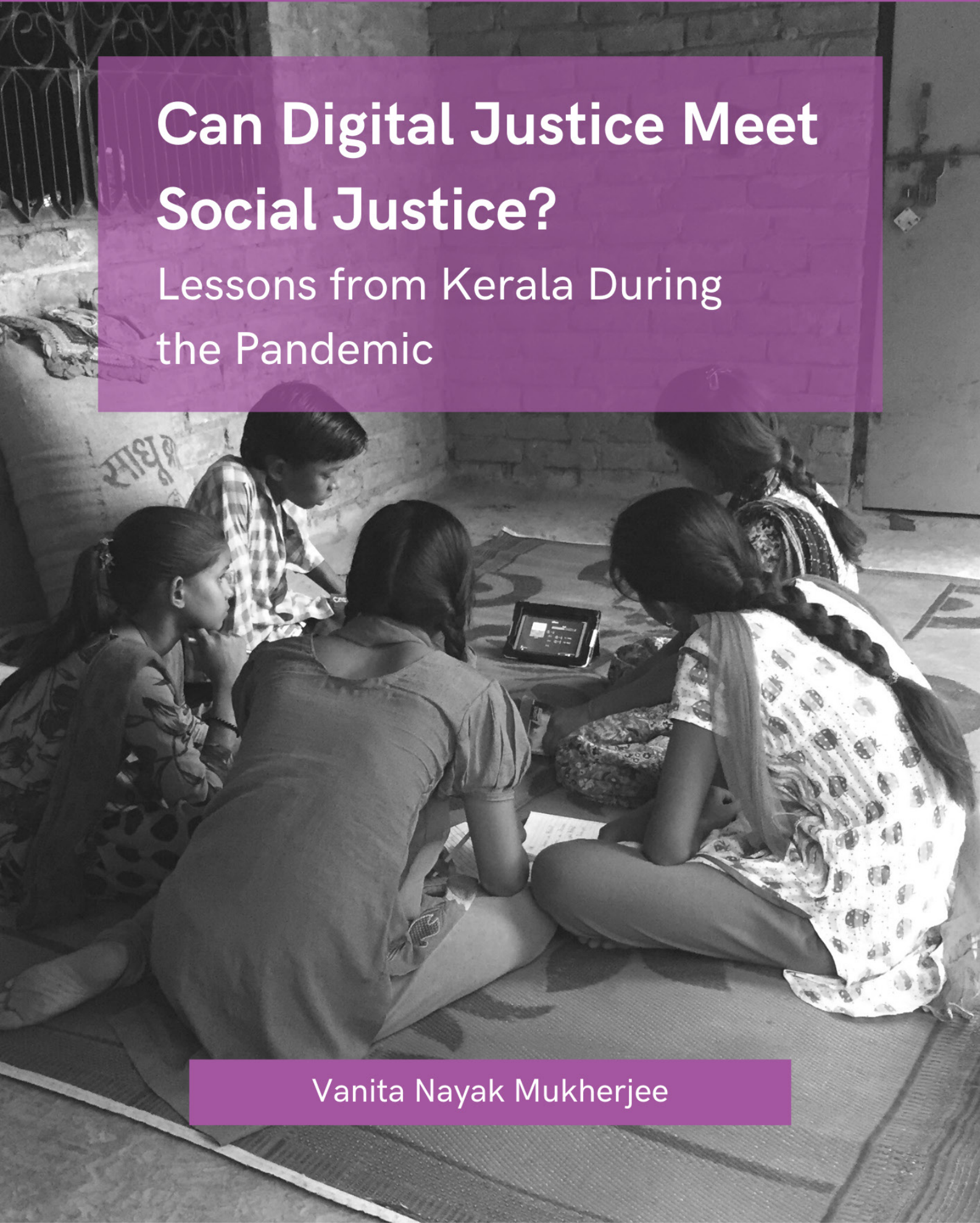


Can Digital Justice Meet Social Justice?

Lessons from Kerala During
the Pandemic



Vanita Nayak Mukherjee



Feminist Digital Justice is a collaborative research and advocacy initiative of IT for Change and DAWN (Development Alternatives with Women for a New Era). We aim to reinterpret the emerging techno-social paradigm from a Southern feminist standpoint. The project foregrounds debates at the intersection of enduring feminist concerns about gender justice and women's human rights on the one hand, and emerging issues at the digital frontier on the other. It responds to the urgent need for Southern visions of transformative change in these times of paradigmatic shift, exhorting feminists from the South to engage with the political economy of data, and to use their knowledge and experience to reframe the debates. In doing this, we seek to support and strengthen informed and cutting edge feminist analysis and action.

This is the fourth piece in a series of issue papers that traces the contours of a feminist development agenda for the digital economy.



IT for Change is a Bengaluru based not-for-profit organisation engaged in research, policy advocacy and field practice at the intersections of digital technologies and social change, with a specific focus on social justice and gender equality.

See www.itforchange.net for more



Development Alternatives with Women for a New Era (DAWN) is a network of feminist scholars, researchers and activists from the economic South working for economic and gender justice and sustainable and democratic development.

See <http://dawnnet.org/about/> for more.

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The Covid-19 pandemic has exposed and deepened multiple layers of social and economic inequalities in India and around the world. Prolonged or partial lockdowns, and the ensuing restriction of movement, have given rise to new and multiple forms of exclusion. Preventive health protocols of distancing and keeping physical interactions to a minimum have transformed work, home, and social lives in many ways. Online ways of living and being have become the norm, and spatial boundaries between the public and private have reduced. The internet has emerged as a primary cord connecting the home to school and work, and owning laptops and smartphones has become essential for day-to-day functioning. The lack of access to the internet, smart cards, and gadgets is exacerbating an existing digital divide, creating new forms of exclusion, and leaving behind whole swathes of disadvantaged populations.

What stands out during the pandemic is that access to food, work, education, and health – resources key for human survival and development – is increasingly dependent on access to the digital world.

The digital divide between the haves and have-nots is as old as the advent of digital technology itself. What stands out during the pandemic is that access to food, work, education, and health – resources key for human survival and development – is increasingly dependent on access to the digital world. For instance, even before the pandemic, access to social security benefits depended on having a biometric card – Aadhaar. Since 2017, possession of this identity card began determining access to subsidized food, the state-sponsored jobs program, MGNREGA,¹ and other services. Covering 1.25 billion people and 95 percent of the total estimated population,² the Aadhaar program in India is a good example of how linking a physical card to a digital one can become a life and death situation for the poor. For instance, in 2018, the state of Jharkhand alone recorded anywhere between 12 to 14 starvation deaths – a majority of them women and girls – after the government replaced paper-based ration cards with the biometric Aadhaar card.³ A Right to Food campaign which investigated these deaths, found that a majority of them were Aadhaar-related,⁴ linked to poor or non-existent internet connectivity or failures in the biometric authentication system.

In the immediate aftermath of the pandemic, a stringent, nationwide lockdown and related job losses led to a precarious situation for the poor and the disadvantaged. The cascading effects of the lockdown are lingering long after the relaxation of its rules. Ground reports indicate an intensification of hunger and malnutrition in India.⁵ School education has moved online and laptops and smartphones have become essential gateways for accessing education. There is evidence of poor people swapping meagre livelihood assets to buy cheap smartphones for their children, or withdrawing girls from school, increasing gendered exclusion.⁶ With digitalization deepening such inequalities, the role of the state in assuring social protection has come into sharper focus and needs to be scrutinized.

The southern Indian state of Kerala, with a population of 35 million, is a strong welfare state with a long history of delivering on social justice, in contrast to much of the rest of the country. During the pandemic and the resultant lockdown, the state stood out for its implementation of a set of robust social protection measures including ‘food for all’ as a right, access to education, and universal healthcare with a focus on vulnerable populations, especially the elderly, among others.⁷ As the pandemic worsened, Kerala progressively digitalized some of its public services. This paper explores digital justice in Kerala and its overlaps with social justice, with a special focus on online education. I argue that pre-existing and ongoing social justice approaches and initiatives have provided a critical underpinning for digital justice in the state.

The unpredictable nature of the Covid-19 pandemic requires state policies and programs to adapt to an emerging situation in short time-periods. From all accounts, over the last 11 months, since March 2020, Kerala’s response has been quick and nimble on several fronts.⁸ Policies and programs have been revised or adjusted as the situation changed. Keeping track of the changes made, in an evolving situation, was a challenge for the purposes of this paper. Evidence for this paper was gathered through published materials, webinars, and interviews. Senior government officials shared information, data, and materials in a changing context, while activists working in Kerala were key informants, providing valuable insights and observations from the ground.⁹ Several newspaper and journal articles highlighted developments in the state during the pandemic. The information from these sources were pieced together and triangulated.

Social Justice and Digital Justice: The Connections

Embracing principles of equality, access, participation, human rights, and diversity as a normative guide, this paper takes an approach to social justice that acknowledges inequalities within societies, and the systemic and structural obstacles that perpetuate them. As an element of this broad idea of social justice, digital justice is also based on the same principles. However, the unique characteristics of the internet and the digital world bring in distinct dimensions to the concept of digital justice.

As in the case of social justice more broadly, a recognition of the varied needs for access and participation across diverse social groups, and the intersectionality of class, caste, gender, ethnicity, age, ability, religious affiliation, and sexual orientation are key in understanding digital justice.

First, digital technology is a Janus-faced entity that can empower by advancing life opportunities and opening up new ways of engaging, or disempower as a tool of surveillance, violence, and oppression. *Second*, unlike public goods like water, electricity, or roads where common infrastructure and points of distribution translate into access for all members of a household, access to the internet is ‘atomized’. It is routed through smart gadgets like phones and laptops that are, by and large, individually owned/

used. *Third*, even where smart gadgets are shared, access and use are unequal, with gender power and hierarchies marking digital deprivations within households. More men and boys own smartphones (and laptops) compared to women and girls.¹⁰ The usual age hierarchy, however, gets reversed as younger men have greater access to gadgets than the older generation.¹¹ Being tech-savvy and having digital literacy gives the youth an edge but the same skills do not always translate into access for girls. In some communities of North India, elders and men have banned mobile phones for girls to prevent them from accessing the digitally-facilitated world outside of strict patriarchal controls.¹² *Fourth*, despite the decentralized nature of the internet, there is a huge gap in access between the privileged and non-privileged, and rural and urban areas. Cheap smartphones imported from China and competition among telecom companies have 'leveled' the playing field to some extent, as has access to open-source software. Yet, deprivations due to digital exclusion continue to plague access to this key resource – across geographies, populations, and the socio-economic spectrum.

As in the case of social justice more broadly, a recognition of the varied needs for access and participation across diverse social groups, and the intersectionality of class, caste, gender, ethnicity, age, ability, religious affiliation, and sexual orientation are key in understanding digital justice. In that sense, both social and digital justice draw heavily on the idea of 'substantive equality' which acknowledges that access and opportunities to knowledge, power, and resources for different social groups is mediated through their socio-economic, political, and cultural locations. Substantive equality also means that a one-size-fits-all approach to laws, policies, and programs does not work.¹³ There are varying structural and systemic barriers that need to be specifically considered.

Non-discriminatory access to the internet – with a right to dignity and safety, and freedom from online-violence and cybercrimes – is key to digital justice.

Digital justice includes not only fair access but also the ability to leverage digital means and methods to demand justice. Campaigns and protests for various causes can be launched by engaging with digital spaces and using online tools and methods. When combined with offline mobilization and protests, this is a powerful weapon for ensuring justice and accountability. Digital justice can also include access to justice using online dispute resolution (ODR) mechanisms.¹⁴ Moving justice delivery systems from physical to virtual courts may be more efficient and cost-effective, and can ensure speedy access to dispute resolution, provided there is fair access to the digital medium and technologies.

Non-discriminatory access to the internet – with a right to dignity and safety, and freedom from online-violence and cybercrimes – is key to digital justice. The increasing online presence of women, children, and transgender people has coincided with various forms of violence, harm, and bigotry against them in the virtual world that mimics the real world. The 'male gaze' and violence in the online domain is as toxic, if not more vicious and destructive, than in the offline space. The cover of relative 'anonymity' for a perpetrator, and a perverse use of the creative potential of digital tools have given rise to new forms

of gender-based violence. Among others, this includes online stalking, trolling, sharing pornographic materials, morphing images, blackmailing, and online sexual coercion. Extending the concept of the *Panopticon*,¹⁵ a scholar from Kerala has developed the concept of “*Omni-opticon*”.¹⁶ She argues that surveillance is omnipresent in the digital space – ‘anyone can surveil anyone, many can surveil many’, given the nature of the medium. During the pandemic, for instance, governments across the world latched on to digital technologies to enforce mandatory quarantines and monitor people’s movement through health and geo-fencing apps, extending the state’s surveillance capacities, and bringing into sharp focus its ‘panoptic’ power and the erosion of the democratic agency of citizens.

Social and Digital Justice in Kerala During the Pandemic¹⁷

Kerala’s history of redistributive justice is well-documented.¹⁸ With more than a century of progressive social movements behind them, its citizens have a strong political consciousness of their rights. Demands from below have democratized the public sphere, shaped public action, and resulted in a progressive, rights-based social contract. The state, however, remains a paradox when it comes to women’s rights. On some socio-economic development indicators, including education and access to health, women do well. On other indicators like violence against women in the private and public sphere, the unequal burden of care work, and women’s low work participation rate, shortcomings persist.¹⁹ On a positive note, however, Kerala’s Transgender Policy,²⁰ introduced in 2018 to address the rights of the community, is a first in India.

Social justice initiatives in Kerala include effective health and education policies and a bulwark of strong, decentralized institutions – panchayats.

Social justice initiatives in Kerala include effective health and education policies and a bulwark of strong, decentralized institutions (panchayats). These local self-governance institutions are by no means perfect. Yet, they have become robust after 25 years of deepening democracy, maturing into a strong scaffolding for governance. With a series of interventions in capacity-building and technical support by the state,²¹ decision-making has been decentralized. A network of 4.5 million women-led neighborhood groups, called Kudumbashree,²² enables and supports the panchayats. During a spate of recent crises, including recurrent and devastating floods, the panchayats, along with Kudumbashree and front-line workers, have risen to the occasion and demonstrated creative leadership, resilience, and innovations in action and solutions. A set of social protection measures initiated by the state were operationalized by the panchayats at the grassroots to reach the most vulnerable. During the ongoing pandemic, a strong, rights-based universal public healthcare system²³ has provided accessible and affordable health services. In 2016, Kerala launched a Nava Keralam (New Kerala) Mission for a renewed thrust on social justice to address ‘second-generation’ challenges faced by the panchayats on health, education, housing, agriculture, and sustainable environment.

Kerala successfully managed the first wave of the pandemic (February-June 2020) on both health care and social protection fronts. Despite having the largest number of Covid-19 cases in the country in February 2020 (due to large numbers of returning migrants), the state managed to flatten the curve of the infection, and ensured the lowest fatality rate in the country (0.58 percent) by deploying a large number of volunteers through the panchayats for tracking, contact tracing, testing, and treatment.²⁴

However, the second wave, from July 2020 onwards, has proven more difficult to control, with the lifting of the national lockdown and easing of curbs on travel. Cross-border economic transactions with neighboring states has led to community transmission. By October, the return of close to a million non-resident Keralites and the arrival of the harvest festival, Onam, led to a spike in the infection rate. In a span of six months, from end-July 2020 till end-February 2021, Kerala moved up the Covid-19 ladder in the number of cases from the 16th to the 2nd position within the country.²⁵ The exponential increase in Covid-19 cases, though challenging, has been matched by an increase in care-giving facilities, while adding innovations through a three-tier Covid-care system, resulting in the lowest case-fatality rates in India (0.3 percent).²⁶ In addition, Kerala's USD 270 million (INR 20,000 crore) relief package has provided food security, job-guarantee, pensions, interest-free loans, and support for laborers and migrant workers.

Digital Services, Investments, and Infrastructure

As the pandemic has continued unabated, Kerala has gone the digital way to provide select services at scale. These include, among others, the creation of a wide network of telemedicine services as one option for non-Covid healthcare and emergency care for senior citizens, especially single women. A disability-friendly online portal, accessible through smartphones and laptops, provides consultations for general medicine and specialist healthcare services, free of charge.²⁷ For senior citizens,²⁸ especially single women, weekly team visits by healthcare workers are backed by an emergency care system that alerts the local police through a radio-frequency technology. A specialized patrol is sent and ambulance service alerted shortly after the call.²⁹

A new IT policy was unveiled in 2017 that recognizes the internet as a basic right of citizens. The policy vision on digital empowerment of citizens emphasizes principles of “Freedom, Ubiquity, Inclusion, Transparency, and Safety and Security for all”.

The IT policy of 1998 aimed to turn the state into a knowledge hub with world-class infrastructure and corresponding human capacity and skills.³⁰ A new IT policy was unveiled in 2017³¹ that recognizes the internet as a basic right of citizens. The policy vision on digital empowerment of citizens emphasizes principles of “Freedom, Ubiquity [read Universality], Inclusion, Transparency, and Safety and Security for all”. A network of supportive institutions under the IT ministry promotes research and development,

and oversees the strengthening of human resources, skill-building and digital literacy as a priority. Free and Open-Source Software (FOSS) is leveraged, along with an emphasis on cyber security to ensure privacy and freedom.

Supporting the process of digital empowerment is the Kerala State Information Technology Infrastructure Limited (KSITIL),³² an apex institution for infrastructure development. One of the initiatives under KSITIL is the recently inaugurated³³ Kerala Fibre Optic Network (K-Fon) project.³⁴ Costing USD 209 million (INR 15.78 billion/1,578 crore) and stretching over 40,000 kilometers, it is designed to provide high-speed internet access to all, with free access to over 2 million BPL (below poverty line) families. In addition, internet connectivity is to be provided at affordable rates for families that do not fall within the BPL bracket. KFON's network coverage also includes faster wireless mobile internet services through its linkage to mobile tower. Supported by the Kerala Infrastructure and Investment Board (KIIFB),³⁵ a government-managed financial institution, the funding target is USD 675 million (INR 50 billion/5,000 crore) to be accessed from the international bond market.

Kerala has the second-highest penetration of broadband internet in India after the national capital Delhi, and the proportion of women with access to mobile phones is the highest in rural areas and second highest in urban areas in India.

Kerala has the second-highest penetration of broadband internet (56 percent) in India after the national capital Delhi (69 percent).³⁶ The proportion of women with access to mobile phones is the highest in rural areas (about 91 percent), and second highest in urban areas (91 percent) in India. Across the state, 65 percent of women have access to smartphones and wireless broadband. In addition, among women without personal ownership of a digital device, women in Kerala lead the country in shared access to mobile phones in their households, both in rural and urban areas.³⁷ This contrasts with a wide gender gap in mobile ownership in India vis-à-vis Kerala (33 vs 18 in percentage points) and patriarchal control over women's access to mobile phones in North India.³⁸ In June this year, the monthly growth rate of wireless broadband subscription in Kerala (0.80 percent) topped the country as virtual school education was launched in the state.³⁹

Digital Initiatives in Public Education

There are 4.3 million students enrolled in public schools across Kerala. The state has a history of gender parity in enrollment and retention. In 2017, girls outnumbered boys in higher secondary school enrollment (51.8 percent vs 48.2 percent for boys).⁴⁰ Kerala's first experiment with IT in public education goes back to 2002, when an IT@School program made IT and computer studies a compulsory subject for secondary schools. While teachers enhanced their capacities, limited computers in school labs in the initial stages led to a digital divide among students. Students with access to computers at home performed well, while those without access fell behind in computer literacy, comprehension, and class-

assignments.⁴¹ Typically, students from scheduled castes (Dalit), tribal,⁴² and coastal fishing communities were impacted by this. In some villages from the poorer coastal areas, students were provided after-school computer classes in community centers run by civil society organizations.⁴³

Fifteen years later, the IT@School initiative morphed in 2017 into KITE⁴⁴ – Kerala Infrastructure and Technology for Education – a nodal agency in charge of transforming public education into a digital system.⁴⁵ In January 2018, an ambitious project to convert all public schools in Kerala into high-tech schools with IT-enabled learning was launched. Unlike the 2002 initiative where the focus was on IT as a subject, the 2018 initiative aimed to mainstream education through IT applications and methods. Initially, ‘smart classes’ were set up in high schools, and incrementally expanded to include secondary and primary schools. By February 2020, the process of 100-percent digital education was successfully completed in the state.

The digital education system in Kerala covers all 4.3 million students in 16,000 public schools, across 45,000 classrooms from Grades 1-12. In the classrooms, a large digital screen stands side by side with a blackboard. Teachers and students move seamlessly from one to the other, depending on the subject and content. All classrooms are networked to high-speed broadband internet for streaming content from laptops. To enhance and upgrade their skills, 1,83,440 teachers have undergone intensive training to handle IT equipment and create digital content.

High-tech schools, reportedly, have revolutionized teaching and learning with creative digital pedagogy. The feedback from students is positive, especially with regards to the use of digital applications to understand difficult concepts.

An online resource portal for diversity inclusion called Samagra Shiksha Kerala (SSK), translated as Inclusive Education Kerala, enables pedagogy and content.⁴⁶ SSK is designed to meet the special needs of students from the economic margins or with disabilities, including those with learning challenges. A special initiative for tribal students in the portal, called Namath Basai, has 28 tribal dialects/languages to aid teaching. The preference of tribal students, especially in primary school, is to learn in their mother tongue. For students with disabilities, the resources on digital pedagogy and content in SSK are adapted to include six categories of disabilities – students with hearing and visual impairments, those with intellectual disabilities, those on the autism spectrum, those with specific learning disabilities, and those with cerebral palsy. Content is driven by tested software applications and study materials are uploaded in a program called White Board.

High-tech schools, reportedly, have revolutionized teaching and learning with creative digital pedagogy. The feedback from students is positive, especially with regards to the use of digital applications to understand difficult concepts.⁴⁷ An interesting consequence of the introduction of smart classes, is a large-scale migration of half a million students from private to public schools.⁴⁸ The infrastructure for

digital schools is financed by KIIFB, the Kerala Infrastructure and Investment Fund Board. Panchayats, Members of Parliament and Legislative Assembly also contribute from Development Funds in their districts and constituencies.⁴⁹

Several reports have highlighted the success of Kerala's digital education system. One question, however, still remains: has universal digital education translated into equal opportunities for students from disadvantaged communities and bridged the digital divide in Kerala? Available material indicates a commitment by the state, along with a key strategy to be inclusive of marginal groups. Of the 16,000 public schools, 400 (3 percent) are located in difficult geographies where internet infrastructure is either patchy or challenging. The back-up is to use Y-MAC and 3G mobile sim-based networks. In these and other areas, teachers carry laptops with pre-recorded content. By early 2020, Kerala achieved the unique distinction of being the first state in the country to achieve 100-percent coverage of digital education in all public schools.⁵⁰ And then, the pandemic broke out.

A Pandemic Challenge: From Digital Education in Schools to Virtual Education at Home

As the crisis intensified, a big challenge was to open schools virtually on the first day of the academic year, June 1, as scheduled, covering 4.3 million students. The state launched the First Bell program to roll out virtual classes on a trial basis for two weeks. With only 56 percent of Kerala's population being able to access the internet, and smartphone ownership still far from universal, the state adopted a mixed-medium digital strategy. Satellite television, which has a 94 percent penetration in Kerala, became the primary medium for streaming classes, thereby ensuring near universal access. This was supplemented by social media platforms like Facebook, WhatsApp, and YouTube, where the same classes were streamed.

TV outreach was facilitated by a state government-owned satellite channel called VICTERS (Versatile ICT Enabled Resource for Students) that was launched in 2005 to reach students in remote geographies. Currently, classes are streamed from Monday to Friday for Grade 1-12⁵¹ and positioned as 'supplementary' school. VICTERS is facilitated by direct-to-home (DTH) and cable TV operators who provide the service free of cost, as part of community service.

However, on the very second day of First Bell trial period, a girl student died by suicide because the TV in her home was not working, and the family could not afford to repair it. The government responded quickly. During this period, a detailed survey was being undertaken by teachers to assess the number of students without access to online facilities⁵² and examine the special needs of tribal communities/pockets, and students with disabilities. Every teacher in Kerala was charged with assessing the needs of students in their care (35 students per teacher). The aggregated results indicated that 2,60,000 students (6 percent) from disadvantaged households and living in remote areas did not have access to a TV, laptop, or a smartphone or the necessary infrastructure to operate them.

A massive resource mobilization drive, spearheaded by the panchayats in their respective areas, was undertaken to allow these 2,60,000 students to access the First Bell classes. The response was positive, with corporate houses, youth organizations, political parties, film stars, and philanthropic institutions cobbling together public-private partnerships with the panchayats. TVs, smartphones, or laptops were distributed to students as needed. In addition, KITE harnessed available resources and gadgets from the digitalized public schools for the panchayats to hold neighborhood First Bell classes in small groups of students, following Covid-19 protocols. Teachers created WhatsApp groups for every class, to help students with assignments and post alerts on any learning challenges that were encountered. Parent-teacher associations, which are an integral part of schools, participated actively. By June-end, there was near-universal coverage of online education as local panchayats and teachers worked hand-in-hand to make sure that every student had access to the VICTERS channel, either in their homes or in the neighborhood community centers. This included students living in coastal areas.⁵³

The introduction of digital education in public schools since 2018 has given Kerala a head start in adapting available digital technologies to design curriculums that can meet the needs of students with disabilities.

There are approximately 12,500 students with disabilities in the public-school education system; 90,902 students in the tribal communities of Kerala are concentrated in remote pockets. Online education at home for students with the six broad disability types identified by the state, both physical and mental, brings in challenges. Lessons have to be tailored for content and pedagogy to meet the specific needs of students with each disability type. This, in turn, needs to be prepared for each grade and subject, while contending with the lack of academic consensus on lip reading or sign language.⁵⁴ Nonetheless, the introduction of digital education in public schools since 2018 has given Kerala a head start in adapting available digital technologies to design curriculums that can meet the needs of students with disabilities, including individually-tailored lessons for those with hearing impairments.⁵⁵ For students from tribal communities, considerable effort has gone into improving access through community centers with TVs or laptops set up by the panchayats, adapting pedagogy, and surmounting language barriers.

Conclusion

Kerala's strategy for online education during the pandemic attempted to be inclusive across the diversity board. This was made possible as digital justice is built on a long legacy of commitment to social justice, where public policy is designed to serve and include marginalized populations. In its current tenure, the ruling Left Democratic Front (LDF) government's bold and innovative New Kerala vision ushered in policies with investments in a second generation of reforms in health and education. This yielded unanticipated and positive results during the pandemic. An upgraded and strengthened public healthcare system prepared and buffered Kerala to deal with the Covid-19 pandemic swiftly, efficiently,

and effectively. A 100-percent digitalization of public education enabled the state to be ready and leverage tools, technology, and TVs to achieve near-universal coverage of online education. As a result, challenges of access for poorer students, and inclusion of students with disabilities and those from tribal communities in forested enclaves were surmounted effectively.

The deep roots of decentralized governance in more than 1,000 panchayats is a second critical element of Kerala's success. Equipped with the power and financial resources to prioritize local issues, panchayats have developed strategies for institutionalizing substantive equality aimed at universal inclusion, especially during crises. Detailed surveys are undertaken on a regular basis to gauge the specific needs and requirements of every household, especially those on the margins. This sensitizes panchayats and front-line workers on the barriers to access and lays a strong foundation for substantive equality. It also enables the tailoring of unique interventions and outreach programs for diverse groups on health, education, food, and other issues. In these long-standing measures, Kerala unequivocally demonstrates that, beyond investments in infrastructure and technology, ensuring fair and equal access for all is key to digital justice.

Endnotes

1. Aadhaar is based on residency in India, not citizenship. MGNREGA, (Mahatma Gandhi National Rural Employment Guarantee Act) is a state-supported justiciable act that guarantees work for 100-days per year, per family, in rural areas, for public-works undertaken by the state. Payments are linked to Aadhaar and biometric authentication that increase hardships for timely wages. <https://scroll.in/article/978862/jean-dreze-last-mile-hurdles-in-nrega-payments-puncture-indias-techno-utopian-delusions>
2. <https://www.ndtv.com/india-news/centre-says-125-crore-aadhaar-cards-issued-till-date-2155184>
3. <https://www.financialexpress.com/economy/matter-of-life-and-death-14-people-die-due-to-lack-of-aadhaar-in-jharkhand-say-activists/1310514/>; <https://thewire.in/rights/aadhaar-welfare-scheme-jharkhand>
4. <https://scroll.in/article/854225/denied-food-because-she-did-not-have-aadhaar-linked-ration-card-jharkhand-girl-dies-of-starvation>; <https://twitter.com/HemantSorenJMM/status/1010065432601153536/photo/1>
5. <https://indianexpress.com/article/opinion/columns/india-hunger-index-poor-pds-welfare-programme-coronavirus-lockdown-narendra-modi-7061645/>
6. <https://theprint.in/world/girls-are-quitting-school-to-work-in-covid-hit-rural-india-nepal-other-asian-countries/506619/>; <https://www.deccanherald.com/opinion/panorama/covid-19-has-hit-poor-children-and-their-education-very-hard-860464.html>
7. <https://www.thehindu.com/opinion/lead/a-virus-social-democracy-and-dividends-for-kerala/article31370554.ece>; See also DAWN Talks on "COVID-19 and Rights: The case of Kerala" www.dawnnet.org; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7510531/>
8. These fronts include crafting and adjusting policies on health services and systems design, online access to education, migrant workers, food security, and services for seniors, single women and those with disabilities, among others.
9. I am very grateful to Dr. Rajeev Sadanandan, IAS, Ex-Principal Secretary, Health to Govt. of Kerala (GOK), Covid-19 Advisor to Kerala's Chief Minister; Mr. S M Vijayanand, IAS, Ex-Chief Secretary and Panchayati Raj Secretary, GOK and GOI; Mr. Manoj Abraham, IPS, Assistant Director General of Police (ADGP), Kerala; Mr. K Anvar Sadath, CEO, KITE, nodal agency for GOK's Digital Education for Public Schools; Mr. Jeevan Babu, IAS, Director of General Education, GOK; Dr. Dhivya, Dept. of Health Services, GOK, State and Nodal Training Officer on Mental Health; Dr. A K Jayasree, Community Medicine Head, Calicut

Medical College. In addition, I had conversations with Dr. Mridul Eapen, State Planning Board member, Dr. Anandi Krishnan, Gender Advisor to GOK, Dr. Meera Velayudhan, Aleyamma Vijayan, Mercy Alexander, and Nalini Nayak, social and feminist activists who shared their observations and analyses from the ground. The IAWS and Dept. of Women's Studies' month-long webinar series on "Covid 19 and its impacts on Women" (15 Sept-14 Oct 2020), Gulati Institute of Finance and Trade (GIFT) and Kerala Institute of Local Development (KILA) organized a series of webinars on Kerala's Local Self Governance Institutions (LSGIs) and their role during Covid-19 – all useful sources for the paper.

10. <https://www.youthkiawaaz.com/2019/10/the-modern-discrimination/>; "Understanding barriers to and impacts of women's mobile phone adoption in India" by Giorgia Barboni et al., 2018, Harvard Kennedy School study; <https://www.indiaspend.com/wide-gender-gap-in-mobile-phone-access-is-hurting-indias-women/>

11. <https://www.statista.com/statistics/751005/india-share-of-internet-users-by-age-group/>

12. Kovacs, A., 'Chupke, Chupke': Going Behind the Mobile Phone Bans in North India, 2017, https://genderingsurveillance.internetdemocracy.in/phone_ban/

13. Substantive equality is unlike 'formal equality' that assumes that the state ensures equality through laws, policies and programs with equal impact for all citizens regardless of their location, condition or position.

14. See Katsh M. E. & Rabinovich-Einy O., 'Digital Justice: Reshaping Boundaries on Online Dispute Resolution' OUP, 2017.

15. Panopticon is a metaphor for surveillance and 'central inspection'. Named by Jeremy Bentham after an architectural design, the metaphor is derived from a circular structure that facilitates observation of occupants by a watchman sitting in the center, leading to self-disciplining by the occupants. Michel Foucault, the French Philosopher, describes the prisoner of a panopticon as being at the receiving end of asymmetrical surveillance: "He is seen, but he does not see; he is an object of information, never a subject in communication." Discipline and Punish, 1975. Quoted in <https://www.theguardian.com/technology/2015/jul/23/panopticon-digital-surveillance-jeremy-bentham>; https://www.researchgate.net/publication/335208381_Surveillance_Society_Panopticon_in_the_Age_of_Digital_Media

16. Dr. Meena T. Pillai, "Women, Surveillance and Tyranny: Pandemization of the Digital" on 15th October, 2020, Webinar series on "Covid 19 and its Impacts on Women", organized jointly by the Indian Association of Women's Studies, and Calicut University Dept. of Women's Studies, Kerala.

17. For a more detailed analysis of Kerala's social justice initiatives, a longer version of this paper will be made available on www.dawnnet.org; DAWN Discussion Papers, Mukherjee V N (2021), 'Can Social Justice meet Digital Justice? Exploring Kerala State during the Pandemic'.

18. Oomen, M A, Capabilities, Reform and the Kerala 'Model', 2008, Paper presented at the Conference of Human Development and Capability Association; Kabir, M. & Krishnan T.N. 1992 "Social Intermediation and Health Transition: Lessons from Kerala, CDS Working Paper 251; check www.cds.edu for more on 'Kerala Model'.

19. <https://www.financialexpress.com/archive/high-status-of-women-in-kerala/83775/>

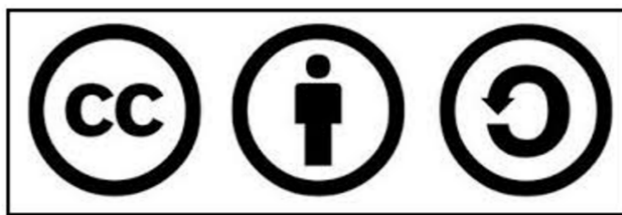
20. Kerala is the first state to have a Transgender Policy with affirmative measures and institutional mechanisms, <https://www.thebetterindia.com/38398/kerala-writes-history-with-indias-first-transgender-policy/>; <https://kerala.gov.in/documents/10180/46696/State%20Policy%20for%20Transgender%20in%20Kerala%202015>; http://sjd.kerala.gov.in/scheme-info.php?scheme_id=IDE1M3NWOHVxUiN2eQ==; <http://queerala.org/cds-triggers-sexual-minority-workplace-inclusion/>

21. KILA – the Kerala Institute for Local Administration – provides institutional support to panchayats through rigorous capacity-building on leadership, gender issues in governance and so on.

22. The Kudumbashree women play a critical role in the panchayats doing all the leg-work with front-line workers – the ASHAs, Anganwadi teachers and helpers. During crises they take on multiple responsibilities beyond their job description. Mask, PPE production and food-preparation of 3,00,000 meals per day in the 1243 community kitchens was managed by Kudumbashree.

23. Issac, Thomas T. M., Sadanandan R, "COVID-19, Public Health System and Local Governance in Kerala" in Economic and Political Weekly, Vol LV No. 21, May 23, 2020; Sundararaman, T., Muraleedharan, V. R. & Ranjan, A. (2021) Pandemic resilience and health systems preparedness: lessons from COVID-19 for the twenty-first century. *J. Soc. Econ. Dev.* <https://doi.org/10.1007/s40847-020-00133-x>; <https://indianexpress.com/article/opinion/covid-19-pandemic-kerala-model-nipah-virus-coronavirus-6393517/>
24. <https://www.livemint.com/news/india/stories-from-kerala-s-spirited-virus-fight-11587399214349.html>; https://www.huffingtonpost.in/entry/kerala-people-centric-health-system-coronavirus_in_5e875d55c5b6a9491835cb9e
25. Total number of Covid-19 cases since January 2020 – 1 million in Kerala out of the 11 million cases in India. <https://www.covid19india.org/#MapExplorer>
26. Three-level integrated dedicated Covid care includes the Domiciliary care centers managed by Nurses for asymptomatic care, First-Line Covid treatment Centers at the Panchayat for symptomatic cases, and the Covid treatment hospitals for critical cases, pregnant women and senior care. <https://www.newindianexpress.com/states/kerala/2020/oct/07/nurse-managed-domiciliary-covid-centres-set-up-in-kerala-2206809.html>; <https://www.thehindu.com/news/national/kerala/home-care-for-covid-patients-gets-acceptable/article32507150.ece>; <https://www.newindianexpress.com/states/kerala/2020/oct/15/dont-go-by-case-count-fatality-rate-in-kerala-one-of-lowest-say-experts-2210351.html>
27. See first link on how the e-Sanjeevani app works for people with visual impairments in Kerala. <https://www.youtube.com/watch?v=UdEOwSaOg&feature=youtu.be>; <https://economictimes.indiatimes.com/industry/healthcare/biotech/healthcare/kerala-govt-to-use-telemedicine-service-e-sanjeevani-for-non-covid-patient-care/articleshow/76370573.cms?from=mdr>
28. <https://www.deccanherald.com/national/south/kerala-police-and-other-govt-agencies-reaching-out-to-the-elderly-amid-lockdown-817250.html>; With 7 million seniors above age 65, services for those living alone are provided at their doorsteps with weekly visits by health-care workers and counsellors and a regular stock of groceries, medicines and essentials.
29. Conversation with Nalini Nayak on 1/8/2020 and information shared by Mr. Manoj Abraham, ADGP, Kerala, IPS.
30. The Akshaya Kerala mission on e-Governance and digital literacy was the world's largest rural wireless broadband network, in 2002, to synergize digital and social inclusion. It was replicated at scale in the rest of the country as the CSCs – Common Service Centers.
31. https://icfoss.in/doc/IT_Policy_2017/ITPolicy_english.pdf
32. KSITIL is a public limited company. https://ksitil.kerala.gov.in/telecom_infrastructure; For a detailed plan of digital infrastructure and other related IT initiatives See "Digital Kerala" Report by the Kerala State IT Mission, 2016.
33. KFON was inaugurated on February 16, 2021. <https://thelogicalindian.com/good-governance/kerala-cm-inaugurates-kfon-project-to-provide-free-internet-connectivity-to-bpl-families-aims-to-end-digital-divide-26872>
34. <https://www.fonearena.com/blog/297415/kerala-government-kfon-project-fiber-connection-december-2020.html>; KFON is a joint venture between Kerala State Electricity Board and the Bharat Electronics Limited (BEL).
35. <https://kiifb.org/actvtis.jsp?vdl>; KIIFB established an INR 50 billion Guaranteed Medium Term Note (MTN) program that is dual listed on the International Securities Market of the London and Singapore Stock Exchange. This enables KIIFB to access the international bond market through the issuance of "Masala Bonds".
36. <https://www.onmanorama.com/business/news/2020/05/14/internet-penetration-in-india-iamai-report.html>
37. <https://doi.org/10.1371/journal.pone.0236078>; Does having a mobile phone matter? Linking phone access among women to health in India: An exploratory analysis of the National Family Health Survey.
38. "Understanding barriers to and impacts of women's mobile phone adoption in India", by Giorgia Barboni et al., 2018, Harvard Kennedy School, <https://www.indiaspend.com/wide-gender-gap-in-mobile-phone-access-is-hurting-indias-women/>; The gender gap in mobile ownership in India is 71 percent of men vs 38 percent of women.

39. The Telecom Regulatory Authority of India (TRAI) June 2020 report card <https://www.keralatelecom.info/2020/09/trai-report-card-june-2020-wired-broadband-growth-rate-increasing.html>; After Kerala, Himachal Pradesh is a far second at 0.45 percent.
40. Source: Directorate of Higher Secondary Education, 2017-18 as reported in Kerala Economic Review, 2017. The total school enrollment of girls is approx. 49 percent. They outnumber boys in the higher secondary stage indicating dropout rates of boys is higher compared at this level.
41. Impact Evaluation of IT@School in July 2010, http://www.itschool.gov.in/pdf/impact_study_rpt_TAPMI21072010.pdf
42. 'Tribal', a term going back to the colonial period, is the term used in India for original indigenous people (*adivasis*). In India's caste-system, Dalits are categorised as 'low-castes' in the ladder of caste-hierarchy and are discriminated, structurally and systemically, in the economic, political, socio-culture spheres based on their caste-status.
43. There is no data on how widespread this was. An example is the "Sr. Rose Memorial Centre" in Valiyathura, Trivandrum district, where after-school study centers were set up with donated computers for students from the fishing community (field observation by the author, 2003).
44. <https://kerala.gov.in/it-school>; Kerala IT Policy, 2017.
45. Digital Education initiative is a part of the 'Public Education Rejuvenation Mission' of the 2016 "Nava Keralam" or 'New Kerala' Mission.
46. The Samagra Shiksha Kerala is a repository and portal for integrated education from kindergarten to high school to ensure inclusive and equitable quality education, including gender parity. Created by the Govt. of India, the repository is best leveraged by Kerala.
47. <https://timesofindia.indiatimes.com/india/what-kerala-did-that-others-could-not/articleshow/78783667.cms?from=mdr>; Digital education has made understanding concepts, especially in Maths, Physics and Science subjects easier.
48. <https://scroll.in/article/884082/why-keralas-public-schools-have-seen-a-rise-in-student-strength-for-the-first-time-in-25-years>; 500,000 is the latest figure.
49. The cost for implementation is INR 42.36 crores (USD 6.51 million approx.) with KIIFB contributing INR 34.75 crores (USD 5.34 million approx).
50. A milestone celebrating 100-percent digital education was postponed due to the pandemic, and launched virtually on October 12, 2020.
51. VICTERS Classes are held for a short duration in a sequential manner. For Grade 1-7: half an hour each, Grade 8-9: one hour, Grade 10-11: 1.5 hours and Grade 12 for 2 hours on one TV channel. To help students keep in touch with lessons post classes, assignments are given.
52. The girl who died by suicide, ironically, was one of the students listed by her teachers for assistance to access the First Bell online classes.
53. Interview with Mercy Alexander, activist working among coastal communities.
54. Anvar Sadath, CEO, KITE interview on November 3, 2020.
55. For the 2000 students with hearing impairments, teaching is managed physically by resource-teachers who develop a common language and expression with the students. Students with visual impairments use a screen-reading software, ORCA.



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