

Information And Communication Technology And Government During Covid-19.

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Abstract:

Information and Communications Technology (ICT) has emerged as one of the key players in Fighting the COVID-19 situation in India. The unprecedented crisis due to COVID-19 has Accelerated the process of digitalization of many services and businesses including healthcare Services, education, online delivery of goods and services, online payments, and work from Home. The study also try to find out how the digital technologies are playing a key role in keeping our societies functional in this time of lockdowns and quarantines. The COVID-19 pandemic has compelled everyone to take a Digital approach to being an employee, friend, or family member. The paper also examine how government play an important role for the people during the global crisis. The study also focus on how government still continue to work during pandemic through virtual meet.

Keywords: ICT, Covid-19, government and people.

Introduction:

Information and communication technology are playing a critical role in all this pandemic. On the one hand the pandemic could be aggravating one of ICTs most troubling side-effects namely the enabling and promotion of increasing polarized, radicalized and even extremist viewpoints. On the other hand, ICTs have emerged as the saviours and ameliorators of the pandemics. Many disruption to almost every dimensions of daily life. Many pandemic related disruption to essential dimensions of our lives(healthcare, education, livelihoods etc.) have been overcome thanks to ICTs and new Information System (IS) artifacts. During the pandemic, industry reports show that digital media use tremendously increased as people spent more time at home, due to coronavirus lockdown(Kemp, 2020).Such increases were specially prevalent for social media and messaging apps, but particularly remarkable was the unprecedented uptake in video conferencing apps and programs. Given people's widespread reliance on information and communications technologies(ICTs) for social interaction under such stay-at-home circumstances. Digital health technology can facilitate pandemic strategy and response in ways that are difficult to achieve manually. Countries such as South Korea have integrated digital technology into governments coordinated containment and mitigation process – including surveillance, testing, contact tracing, and strict quarantine which could be associated with the early flattening of their incidence curves. India also initiated Aarogya Setu app. It is a contact tracing app available in 11 languages. This app uses Bluetooth and location data to track movement of the user. Big data artificial intelligence (AI) have helped facilitate COVID preparedness and the tracing of people and so the spread of infection in several countries. Tools such as migration maps which use mobile phones, mobile payments application and social media to collect real time data on the location of people, allowed Chinese authorities to track the movement of people who had visited the Wuhan market, the pandemic's epicentre. With these data machine learning models were developed to forecast the regional transmission dynamics of SARS-CoV-2 and guide border checks and surveillance.

Coronavirus disease 2019 (Covid -19) also known as the coronavirus or Covid-19 is a contagious disease caused by severe acute respiratory syndrome coronavirus 2(SARS-CoV-2). The first known case was identified in Wuhan, China in December 2019. The disease has then since spread worldwide leading to an ongoing pandemic. Government and public health institutions across the globe have set social distancing and stay-at-home guidelines to battle the Covid-19 pandemic (World Health Organization, 2020) which specific restrictions vary between countries, government policies to handle the coronavirus outbreak often involve closing schools, non-essential physical shops and business and limiting public transportation and spaces as well as social gatherings.

Role of Information and Communication Technology:

Information and Communication Technology have a significant role in Education, Healthcare, Workplace and others. Due to the sudden outbreak of Coronavirus across the globe the importance of ICT in every field has become more noticeable. ICT play an important role in supporting teaching and learning during the epidemic. The majority of the technology users distribute into four domains which are Education, Healthcare, Work and others. When we talked about technology used we found two types of users involved in it – The providers and the receivers. For instance, in the

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Healthcare domain, medical professionals such as radiologists, surgeons and nurses are the provider's who use electronic technology to provide services and patients with chronic disease and infected patients are the Healthcare receivers. And when we talked about education, work and other domains, the providers and receivers maybe teachers and students or employees and employers. Even if they have different users for technology in their daily life, they are using the same type.

Literature Review:

Abhinav., Arfin, John & Vivekananda.(2020). *An Overview of mobile application (apps) to support the Coronavirus disease 2019 response in India*. In the study the authors highlight the potential benefits of mobile health (mHealth) initiatives to manage the Coronavirus disease in 2019(covid19) pandemic have been explored. The Government of India, state governments and healthcare organizations have developed various mobile apps for the containment of Covid19. The article mainly aimed to systematically review Covid 19 related mobile apps and also highlights gaps to inform the development of future mHealth initiatives. The study also highlights the current emphasis on the development of self-testing, quarantine monitoring and contact tracing applications. The study suggests that India's response to Covid19 can be strengthened by developing comprehensive mHealth solutions for frontline healthcare workers, rapid response teams and public health authorities.

Nirupam Bajpai, John Biberam and Manisha Wadhwa(july 2020) , "ICT Initiatives in India to Combat COVID-19".In the study the authors examine, Information and Communications Technology (ICT) has emerged as a key means of both resolving challenges caused by the pandemic and responding to the new reality of the everyday. Government at the central and state levels has actively engaged with the private sector to develop ICT solutions, particularly identification, isolation, Contact tracing, and treatment, to deal with the evolving situation in the country. Of particular benefit have been the growing number of mobile applications and Artificial Intelligence (AI) based tools which have emerged during this time. However, the use of ICT involves its own set of challenges, especially concerning privacy safeguards. ICT acts as a catalyst to facilitate the processes involved in combating COVID-19. The central and state governments in India have launched various new mobile apps to deal with the COVID-19 situation in the country.

Lee, Malcein and Claire.(2020). *Information and Communications Technology (ICT) usages during COVID19:Motivating Factors and Implications* . This study was designed to investigate the roles of information and communications Technology (ICT) played during the current COVID 19 pandemic. Specially they focused on the relationship between ICT use and perceived importance of social connectedness and future anxiety, while considering relevant personality and psychosocial factors. The authors also highlights the effects of adults and children for taking online classes for long hours which effects them physically. They argue that ICTs played multiple roles during the pandemic. Notably, ICTs are broadly defined in this study as the focus is on digital communications Technology. Their results suggest that users interact with ICTs for the purpose of information seeking and staying socially connected with their families, friends and social networks.

Ngugen, Gruber, Fuchs, Marler, Hunsaker and Hargittai. (2020). *Changes in Digital Communication During the COVID-19 Global Pandemic: Implications for Digital Inequality and Future Research*. In the paper, the authors addresses how the pandemic has changed people's use of digital communication methods, and How inequalities in the use of these methods may arise. The authors first address whether people changed their digital media use to reach out to friends and family, looking into voice calls, video calls, text messaging, social media, and online games. This paper show how age, gender, living alone, concerns about Internet Access, and Internet skills relate to changes in social contact during the pandemic. The paper also discuss how the use of digital media for Social connection during a global public health crisis may be unequally distributed among citizens and may continue to shape Inequalities even after the pandemic is over. Such insights are important considering the possible impact of the COVID-19 Pandemic on people's social wellbeing. They also discuss how changes in digital media use might outlast the pandemic, and What this means for future communication and media research.

Parra, Gupta , Mikalef.(2020). *Information and communication technologies (ICT)-enabled severe moral Communities and how the (Covid19) pandemic might bring new ones*. In this study the authors present an autopoietic social systems model based on Collectively Prevalent Interpretants (CPIs). They adapt this model to represent and exemplify how Information and Communication Technologies (ICTs) may Enable the emergence of severe moral communities. In particular, we argue that ICTs may help severe moral Communities promote increasingly polarized, radicalized and even extremist viewpoints. In an effort to help understand and manage the enabling role of ICTs the study also presents recommendations for theory and practice, which may prove useful in advancing Digital resiliency. Most Importantly, they have strived to outline the role of ICTs in helping Advance economic evolution and human development.

Whitelaw, Mamas, Eric Topol, Harriette G. C. Van spall. (2020). *Applications of digital technology in COVID 19 pandemic planning and response*. In the study the authors examine the countries that have maintained low COVID-19 per-capita mortality rates appear to share strategies that include early surveillance, testing, contact tracing, and strict quarantine. The DOI: 10.53555/V24I9/400221

scale of coordination and data management required for effective implementation of these strategies has—in most successful countries—relied on adopting digital technology and integrating it into policy and health care. The integration of digital technology into pandemic policy and response could be one of several characteristic Features of countries that have flattened their COVID-19 Incidence curves and maintained low mortality rates. In The race to contain the spread of a highly transmissible Virus, countries that have quickly deployed digital technologies to facilitate planning, surveillance, testing, contact tracing, quarantine, and clinical management have remained front-runners in managing disease burden.

Research discussions:

Government of India: The Ministry of Health and Family Welfare website provides authentic information about India's COVID-19 situation.⁸ MyGov Portal and National Health Portal of India also provide updates and authentic information related to COVID-19 in India (National Informatics Centre, Ministry of Electronics & Information Technology, Government of India 2020)(Ministry of Health & Family Welfare, Government of India 2020). The Government of India and WhatsApp has launched a WhatsApp bot called MyGov Helpdesk (WhatsApp Number: +919013151515) where citizens can send their queries related to COVID-19 and receive instant authoritative answers. MyGov Social Media Hub also provides a wide range of information channels concerning COVID-19. Whatsapp +91-9013151515, +19-9013353535, Facebook Messenger-My Gov Indian, Facebook Page-@MyGovIndia, Twitter-@mygovindia, Instagram-@MyGovIndia, Telegram My Gov Corona Newsdesk, LinkedIn -@My Gov India, YouTube- @MyGovIndia, Tiktok-@mygovindia, Helo-@MyGovIndia, Likee-MyGovIndia, VMate- MyGovIndia, Pinterest-MyGovIndia. MyGov App is launched by Indian Government. This app provides a platform for citizens to share their suggestions, ideas and comments to the Government of India and provides an opportunity for them to get involved in governance and the formulation of policy. The app also provides users the latest information on the COVID 19 situation in India and relevant government advisories.

Government has initiated different apps. The Aarogya Setu App has been developed by National Informatics Centre (NIC), Ministry of Electronics and Information Technology, Government of India(Wikipedia 2020; National Informatics Centre, Ministry of Electronics & Information Technology, Government of India 2020a; Mitter 2020). It is a contact tracing app available in 11 languages. The app uses Bluetooth and location data to track movement of the user. An alert is generated whenever a User has been within six feet of a COVID-19 patient by cross-referencing the pan-India Government database of COVID-19 patients. The alert is accompanied by instructions from the Ministry of Health on self-isolation and the course of action to be taken in case the user Develops COVID-19 symptoms. The app's user interface displays current status of user locality (the zone: red, orange, green), risk of the user getting infected with COVID-19 and updates on COVID-19. The app is somewhat similar to the community tracing app "Trace Together" used by Singapore

COWIN (Covid-19 vaccine registration):

The registrations for the Covid-19 vaccine are now open to all citizens in India. The Indian government has opened the next phase of Covid-19 vaccination. All citizens above the age of 18 can get vaccinated now. To help citizens register and book their appointment is uploaded on the websites of the Union Ministry of Health & Family Welfare and the National Health Authority (NHA).People can go to <http://www.cowin.gov.in> to register themselves or via the Aarogya Setu app, which has CoWIN app integration. There is no CoWIN app available on Play Store for registration because the app is only for administrators . Slots nearby to get vaccinated are subject to availability, which is proving to be a challenge at the moment. After doing registration page will appear where you will need to enter the photo ID type, number and your full name on it. You also need to enter the gender and age of the person. For example, you can use a Driving License, Aadhaar Card as photo ID proof.

Role of ICT in Education and Healthcare sectors:

Information and Communication Technology have a significant role in Education, Healthcare, Workplace and others. Due to the sudden outbreak of Coronavirus across the globe the importance of ICT in every field has become more noticeable. ICT play an important role in supporting teaching and learning during the epidemic. The majority of the technology users distribute into four domains which are Education, Healthcare, Work and others. When we talked about technology used we found two types of users involved in it – The providers and the receivers. For instance, in the Healthcare domain, medical professionals such as radiologists, surgeons and nurses are the provider's who use electronic technology to provide services and patients with chronic disease and infected patients are the Healthcare receivers. And when we talked about education, work and other domains, the providers and receivers maybe teachers and students or employees and employers. Even if they have different users for technology in their daily life, they are using the same type.

To continue the learning process, Educational communities have been using various Platforms like Google Classrooms, Microsoft Team, Zoom, and many others to continue the Process of learning for students during pandemic situations. It is believing that in the Potential ICT tools hold to reshape the education sector for the better. All over the countries, The most common approach was digital instruction, which was used by 42 percent of Countries for pre-primary education, 74 percent of countries for primary education, and 77 Percent of countries for upper secondary education. Many countries
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have also developed Broadcast curricula (television- and radio-based), especially for primary and lower secondary Students. India has been consistently endorsing the digital revolution in the education sector for the last few years and the ongoing pandemic became a major catalyst in accelerating the use of technology tools and digital platforms to facilitate the learning process. The recently launched National Education Policy 2020, also envisages the creation of a dedicated unit to devise the development of digital infrastructure, digital content, and capacity building to supervise the e-education needs. It also talks about eliminating the digital divide and expanding ICT- based educational initiatives. To address the challenges of remote learning, MHRD has undertaken various initiatives to Support students, educators, and lifelong learners in pursuing of their education. These Initiatives cover wide educational requirements, ranging from learners in schools to Postgraduates. This online platforms like DIKSHA, E- Pathshala, and Shagun (e-content), and many more are already existed before pandemic but during pandemic it was being optimized to their full potential to increase the Connectivity and accessibility to content. During pandemic, there are several new initiatives have been taken like Manodarpan – a platform to provide psychological Support to students, iGOT portal for training module for management of COVID-19 were launched. ICT tools like Radio and Television (TV) have been also used exponentially by almost all the states due to their vast potential to reach the highest number of students. Indian educational communities have been tapping into the Opportunity to leverage TV as a platform to reach a wider range of students equipped with or Without internet facilities. Some states are already running education programs on the Government-owned Doordarshan television channel. The federal government, too, is running Educational channels for senior classes. State governments and individual educational Organizations are understanding the existing gaps in accessibility to e-learning resources and are contributing to bringing the reach of digital platforms closer to everyone.

Healthcare:

The role of ICT has made a large impact on healthcare. It increases the quality of care improve the patient security and data protection and decrease operating and administrative cost. The devices of telecommunications are more friendly and used by a large number of population across the globe which have decreased the communications gaps to a zero level. Because of ICT information has become easy for all and people also find themselves more comfort while using in healthcare service. There are many challenges faced by the healthcare sector which are storing the medical records of the patients, maintaining hospital management system, maintenance of medical equipment, medication errors and many more. Now the Hospitals depend on ICT to renovate the whole process of the healthcare sector. Testing and Diagnosis, Before any successful containment strategy can begin to take shape, medical staffs must gain an accurate image of who is infected and who they, in turn, have potentially infected. The beginning step in this process, and the step which had provided the most difficulty so far for nations dealing with this global crisis, has been the delivery of testing at a large enough scale to paint this portrait. ICT can address directly to the material shortage in testing, which has more to do with shortages of swabs and chemical reagents. If, however, enough tests can be manufactured to meet the demand of all population, ICT can play a vital role in addressing both human resources constraints and geographical challenges. For instance, testing for COVID-19 involves conducting a simple genetic sequencing of the residue from a nasal swab, which seeks to identify the well-documented, telltale RNA patterns of the coronavirus. There is no need of particular specialized medical knowledge, batches of tests can easily be processed en masse at scale and on site with the help of technology to identify these sequences.

Workplace:

Work professionals have become a very unique group of technology users during the pandemic. Researchers, scientists, and employees from all walks of life continue working remotely by using digital technologies during COVID-19. Different from the healthcare and education domain, it is not obvious to identify the providers and receivers of technology used in telework. From the work perspective, most of the time, no matter what kind of technology is being used, the work professionals are acting as both providers and receivers. For example, an employee could get direction from their supervisor while also needing to report their works by using Zoom.

Major Finding and Suggestions:

The centre and state governments have initiated various mobile applications to combat COVID 19, but the people of India irrespective of uneducated and educated man who used the applications is very few. There are many concerns around the Government of India mobile app 'Aarogya Setu' being used for contact tracing purposes (George 2020). First, the app collects a lot of personal information about the user but there is no information on how online privacy of the users is protected. Clear legislation on how the personal information of the user will be used can help resolve this issue. Second, the unique digital identity number in the app assigned to the user is a static number which again creates user privacy issues. A constantly changing digital identification number could be a better approach. Third, there is no clear documentation available publicly on the inner workings of the app. If the government intends to make this app permanent then there are concerns that it can be used for iniquitous and nefarious means. Not only 'Aarogya Setu' but all other apps that track real-time movement of people raise privacy concerns. ICT brings inequality in the society. If a society relies on ICT as the primary means of outreach during a pandemic, then its response is likely to leave out the poor and elderly, coincidentally the two groups which have been the most exposed to danger during the COVID-19 outbreak. Children and oldman people do not have much about how to use mobile and accessing internet. So these groups of people face

problems specially during lockdown because face -to- face communication is not possible. It also differentiate between the poor and rich. To use ICT it requires electronic devices like mobile but the poor people can not bought electronic devices because of financial problems and thrown out from their job due to Covid19 or lockdown. Like other countries, India also adopted virtual platform to continue the learning process as this is the only alternative way to keep the learning process not to stop. Students belongs to poor family background could not purchase smart phone to attain online classes. Role of ICT has a great negative impact on this sector. So the government as well as NGOs need to look on this matter.

For reasons both similar and disparate, the poor and the elderly have proven themselves to be the most vulnerable populations to COVID-19. The coronavirus has an estimated lethality rate of 13.4% for patients 80 and older, more than ten times higher than the rate for the rest of the population. The working poor, on the other hand, are vulnerable because they have neither the means nor the physical space to practice the social distancing which would otherwise shield them from exposure. The poor and lower classes are disproportionately in employment which requires them to show up in person, often via means of transport which put them in close proximity with others. Due to their poverty, they often lack the financial security to leave these jobs in order to protect their health. If they have the means to shelter in place, they often must do so in crowded conditions with multiple family members or roommates – who themselves may need to continue risking exposure to support themselves. Recent moves by certain American states to cut unemployment benefit eligibility for blue-collar workers who remain at home after stay at home orders are lifted, likely prematurely, will heighten the stakes of this impossible choice between health and sustenance, exposing the poor to even more danger. Finally, the coronavirus has exhibited an affinity for victims with pre-existing conditions disproportionately represented among the poor and elderly alike. Digital health initiatives can amplify socioeconomic inequalities and contribute to health-care disparities. Digital technology typically involves the use of the internet and mobile phones. Increase people used the internet across country in 2019, usage was disproportionately higher in high-income areas than in low-income and middle-income areas. Even within high-income states in India, susceptible groups, such as those in low-income neighbourhoods or remote regions, might not have access to broadband signals, smartphones, or wearable technology such as smartwatches. To effectively implement digital technology globally, interventions should be tailored to the target regions; broadband access requires federal and private sector investment in technology and infrastructure. At a regional level, subsidised mobile phone plans, loaner devices, free Wi-Fi hotspots, and training programmes could provide temporary solutions to these disparities. In regions without infrastructure or sufficient funds to support cellular and data coverage, automated applications and devices that do not require continuous network access should be considered.

Conclusions

This paper reviewed the ICT based events, health care, online education, and innovation in the ongoing COVID-19 pandemic particularly in India. The lockdown has for the first time pushed vast swaths of the working population into being isolated. The rapid surge in staff, students, teachers, and many other home working professionals is driving a huge increase in demand for video conferencing, online networking devices, and chat systems only received a big boost from the latest global coronavirus pandemic to the work-from-home job community. The centre government and state governments have various steps to stop the spread of Coronavirus and track the covid infected person. Unexpected global crisis of COVID-19 has made every sector face many challenges specially in government sector. These challenges have made the world to find out possible solutions to overcome the obstacles due to the crisis. India's government sector has been impacted tremendously when so many leaders and workers had to sit at home. Technological innovations in the sector have made it possible to navigate through such difficult times. The sector has been using technology to come up with various possible solutions. These initiatives made sure to provide the platforms to have access to various government and non- government resources and guiding tools to be able to continue their working virtually.

Now everyone remembers and appreciate doctors, nurses, pharmacists, and all other health officials. Without any doubt, they are frontline warriors throughout COVID-19 pandemic. However, no one cares about ICT professionals who work 24/7 to keep everyone connected and run smoothly. The whole world is in a Coronavirus crisis but ICT people are working in an office or from home. All banking systems continue to function, all hospitals websites and software's are functioning seamlessly, ATM machines and software works 24 hours a day to keep it working efficiently, Internet and mobile phone services are running continuously people get uninterrupted updates on all the news channels, all entertainment channels are functional, Facebook WhatsApp, etc. Social media is functioning well today. Salute to ICT people are working from home so as to ensure everything continues to run smoothly.

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