

Digital Divide in India

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Abstract

This paper attempts to concentrate on the various facets of the digital divide and measure its impact, primarily on the education sector. First, causes leading to such a divide are identified. Then, based on the data obtained by the NSSO, the figures of different Indian states are compared. The urban-rural divide and the loopholes in their implementation are discussed. The paper reveals that obstacles such as illiteracy, lack of infrastructure, and investment in rural areas must be tackled if India is to diminish the gap of the digital divide.

Keywords:

Digital Divide, Regional Disparity, Information, and Communication Technology (ICT).

1. Introduction

In recent years, the notion of the 'digital divide' has been widely researched and has attracted much debate and speculation for its social, economic, and political consequences. Here in the paper, the primary aim is to understand and measure the impact of the Digital Divide on India's education sector and the subsequent impact it will have on the labour force in the future. A digital divide can be referred to as any uneven distribution in the access to, use of, or impact of information and communications technologies between

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any number of distinct groups, which can be defined based on social, geographical, or geopolitical criteria, or otherwise.

India, the largest democracy and the second-most populous nation in the world having a population of more than 1.3 billion people, out of which approximately 313 million people are uneducated and only a paltry percentage of the people have access to the internet. But surprisingly, despite such demoralizing numbers, India presently serves as one of the worlds' leading IT hubs. Though superficially, this might seem to be paradoxical, in reality, there is a lot more to it. Digitalization and Information and Communication Technology (ICT) serve as the basis of modern society. The development of ICTs and the rapid pace of digitalization have necessitated multiple social, economic, and environmental changes globally.

Though to a developing economy like India, this process of shift is tedious and troublesome, it can be safely said that it is necessary and the only way forward. The digital divide, if not checked for, in its nascent stages, will have large-scale economic implications. It will widen the gap between the rich and the poor, the educated and the uneducated, and shall drastically deteriorate the productivity and the efficiency of the labour force in the future.

Moreover, with the outbreak of the Covid-19 pandemic in 2020, the digital divide, especially in the Indian education sector has deepened to a great extent. This came at a time when the country was expected to take off to its next phase in the digitalization process. India has the world's second-largest schooling system, after China. A total of 320 million learners in India have been adversely affected and transitioned to the e-learning industry. Though educational institutions had to shut down to avoid community transmission of the virus, the prolonged closure and the subsequent shift in the mode of teaching has had a detrimental effect on the students - especially the most vulnerable ones - belonging to the socially and economically downtrodden class (World Economic Forum - UNICEF).

2. Literature Review

Amidst the given circumstances, technology has turned out to be the most feasible and one of the best possible solutions to most of the sectors across the world. Its efficacy and efficient nature has always proven to make the world easier for everyone. We believe that we are not wrong when we say that this was the only market whose demand surged to more than double its size and found the urgent need to increase its capacity. However, not exactly everyone was fortunate enough to reap the benefit of technology. This is where the digital divide came into play. Amongst all the sectors, we believe that education flow was majorly distorted due to the digital divide. As per the Indian Student Exclusive QS IGAUGE's Report (titled 'Covid-19: A Wake-up Call for Telecom Service Providers'), the infrastructure in terms of technology in India has not achieved a state of quality to ensure sound delivery of online classes to students across the country. According to the World Bank (2020), the pre-existing learning crisis with the crisis of school closures in more than 160 countries as of March 2020 is expected to have short-term losses of learning and long-term losses in human capital, and diminished economic opportunities.

With educational institutions getting shutdown orders to prevent the spread of the coronavirus and shifting of the education culture to a digital platform, the urgency to eradicate this digital accessibility gap grew even more. However, our efforts towards this concern were not satisfactory. A report by Oxfam India (September 2020) states that around 27 crores students were badly affected by the closure of schools and almost 84% of teachers reported facing challenges in delivering education digitally (concerns ranging from internet connectivity, data expenses to the impairment of health of the teachers). Estimates show that continued dependence on education on digital platforms will lead digitally deprived students (mainly from disadvantaged backgrounds) to lose almost 40 % of their previous year's teaching (Quinn & Polikoff, 2017). According to India's National Sample Survey Organization (NSSO), there is a need

for investment in transportation, power, and internet access to create more employment for an estimated population of 156 million Indian rural households.

Synoptically our paper strives to critically examine the impact of the measures already taken to minimize this issue (like Digital India 2016, eNAM, Digital India Land Records Modernisation Programme) and we have also laid our point of view towards the same mission.

3. Causes Of The Digital Divide

Information and communication technologies (ICTs) are turning out to be the new normal. With situations getting worse day by day, ICTs are making their way into being our next best alternative. However, countries across the world are finding it difficult to reap equal benefits of ICTs. Moreover, the problem of the intra-national digital divide (which refers to inequality across the regions, sectors and sections of the society in terms of their ICTs access) is also leaping over the past couple of years (NSSO, 2018). In the case of India, there persists a huge urban-rural digital divide which is shown by the indicators of mobile users and internet users. Some of the major causes of the divide are:

- (a) **Internet Divide:** It refers to the gap in access to internet usability for any given population. In India, almost 70% of the total internet users come from top cities (like Mumbai, Delhi, Bangalore, Kolkata, and Pune) and the rest 30% access comes from other areas. The disparity between urban and rural areas is very high.
- (b) **Poverty:** This is one of the major reasons for such an enormous gap between urban and rural internet users. People in the rural areas find themselves trapped into a vicious circle of poverty and hence they cannot afford technology even if they have access to internet connectivity.

- (c) **Electrification:** Electricity is one of the major resources in creating a seamless environment of internet connectivity and usage. Rural India has low coverage of electricity as compared to the urban areas (Government of India (2017-18), Statistical Yearbook of India).
- (d) **Education:** Majorly affected area when it comes to the digital divide. Not to mention, but COVID-19 and lockdowns all across the world led to a steep surge in demand for electronics and the internet. However, the vulnerable section of our society continues to find itself in a deeper hole. Lack of proper connectivity, inability to afford data (due to price increase), and having no internet connection at all are some of the major challenges laid down by over 75% of the parents across the country (Oxfam, September 2020). Many areas of Bihar and Jharkhand have reported an absolute shutdown of education during the lockdown. This will ultimately create a knowledge gap, lack of proper skills, and involuntary unemployment, thereby creating a hindrance in our country's growth.

4. Methodology And Source Of Data

To study the extent to which the divide is present in our country, we will analyze the data from NSSO Report No. 585 on **Household Social Consumption on Education in India (75th round)**.

From chapter seven of report no. 585, we try to decipher the disparity in inaccessibility of internet and computer facilities among the rural and urban areas of the different states in our country. Accessibility to digital infrastructure is defined as households having possession of

Computers, laptops, tablets, and similar devices. Along with it, we also study how males and females fare when it comes to the ability to use computers and the internet. The ability to use digital

devices(computer, to be precise) refers to the ability of an individual to perform basic functions on a computer such as accessing files, using Microsoft applications, etc, whereas the ability to use the internet refers to being able to use internet browser for navigating websites, sending and receiving e-mail and social networking applications, etc.

5. Analysis Of Data

Table 1 shows the percentage of households with computer and internet facial facilities in different states

State	rural		urban		rural+urban	
	computer	internet facility	computer	internet facility	computer	internet facility
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh	1.5	10.4	11.6	29.5	4.8	16.6
Assam	3.7	12.1	30.8	46.9	7.5	17.0
Bihar	2.7	12.5	20.0	38.6	4.6	15.4
Chhattisgarh	3.2	10.6	22.0	34.6	6.9	15.2
Delhi			34.7	55.8	34.9	55.7
Gujarat	4.4	21.1	20.1	49.1	11.2	33.2
Haryana	5.9	37.1	29.5	55.4	14.7	43.9
Himachal Pradesh	10.5	48.6	28.3	70.6	12.9	51.5
Jammu & Kashmir	3.5	28.7	16.0	57.7	6.6	35.8
Jharkhand	1.3	11.9	15.6	40.2	4.4	18.0
Karnataka	2.0	8.3	22.9	33.5	10.7	18.8
Kerala	20.1	46.9	27.5	56.4	23.5	51.3
Madhya Pradesh	2.3	9.7	17.2	35.4	6.1	16.3
Maharashtra	3.3	18.5	27.4	52.0	14.3	33.7
Odisha	1.8	5.8	17.2	31.2	4.3	10.0
Punjab	9.4	39.4	26.7	57.1	16.2	46.4
Rajasthan	6.4	18.5	26.6	49.9	11.7	26.7
Tamil Nadu	11.6	14.4	24.7	24.8	18.1	19.6
Telangana	1.6	9.9	17.6	41.9	9.1	24.9
Uttarakhand	7.0	35.2	32.5	64.3	14.3	43.5
Uttar Pradesh	4.0	11.6	22.3	41.0	8.2	18.4
West Bengal	3.3	7.9	23.0	36.0	9.4	16.5
all-India	4.4	14.9	23.4	42.0	10.7	23.8

Note: Figures for rural Delhi is not presented separately. However, 'rural + urban' for Delhi includes, 'rural' also

Table 1: (Source: NSSO data on social consumption of education)

From the above table, we see that only about 10.7% of the Indian

households have been observed to have possessed computers, whereas the percentage of households having internet facilities in our country also stood at a meagre 23.8%. Delving into the data for states, we find that even Kerala, the state with the highest literacy rate in the country, does not have impressive numbers with only 23.5% of households having computers. Odisha fared worst in this regard i.e. 4.6% of households had computers. These figures correspond to both the urban and rural areas. The more worrying issue lies in the figures of computer and internet availability in the rural areas of the states: the figures were 2.7%, 4.4%, 3.3%, and 1.6% for the states of Bihar, Gujarat, Maharashtra, and Telangana. The figures for most other states lie in and around these numbers. The numbers for internet facility look a little bit better, overall (rural + urban), all the states had double-digit percentages of households with internet facilities, but the percentages are not good enough, other than Delhi, Kerala, Himachal Pradesh, Punjab, and Uttarakhand that have figures around 50%. These scanty percentages post a scary picture in front of us, that how less access to digital infrastructure poses a threat to prospects of the students who do not belong to these percentages. They could well be at a disadvantage of not being able to use these facilities, they will be left behind the race of education and employability too. This low access to the internet also opposes the present-day myth that India is empowered with the magic stick of internet access.

Table 2(on the next page) shows the percentage of persons of age 5 years and above who can operate a computer, able to use the internet for males and females

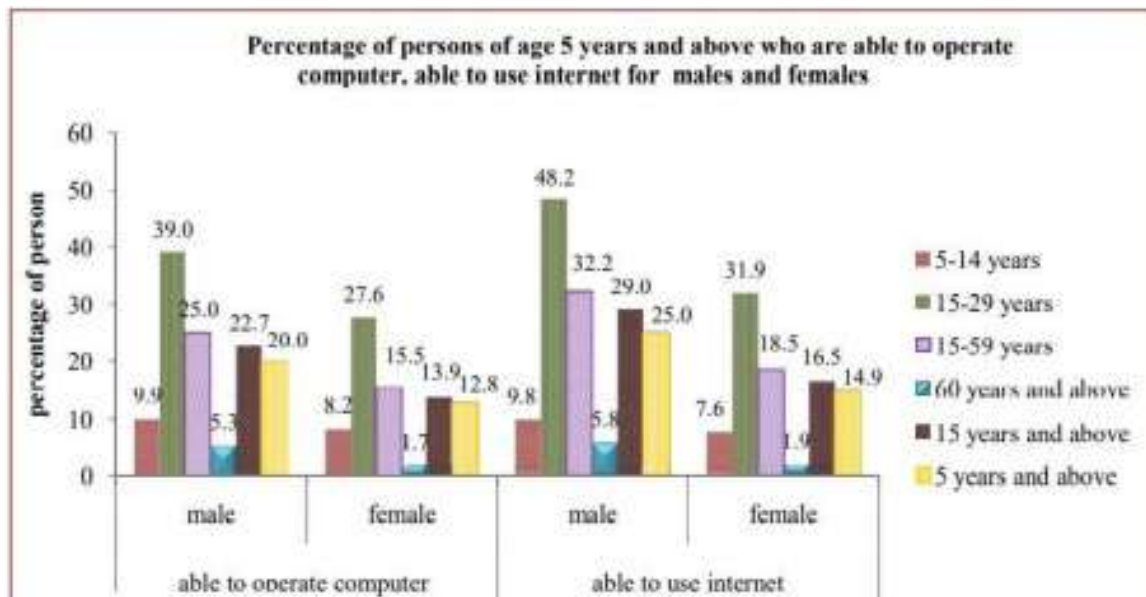


Table 2: (Source: NSSO data on social consumption of education)

What we can infer from the above compilation of information is not very good either. Females were way behind males when it came to the ability to use a computer and the internet. For our purpose, we are mostly concerned with people aged 15-29 years because they are the ones who will be on the verge of education completion and entering phases of employment. Only 39% of the males and 27.6% of the females (of the age category under consideration) could perform basic functions on a computer. Again, the study of the percentage of people who could make use of some basic and productive uses of the internet facility stood at 48.2% for males and only 31.9% for females.

It must be noted from here that the all-around ingress to digital infrastructure is paltry in rural areas in most states, which mainly creates a huge gap in online education reach to those people; this will further create issues in ways we do not always pay attention to i.e. if they are not taught how to use the internet and digital devices, they will not be able to use the online services available like e-banking and most importantly, they won't be able to be part of the growing part of the society that is taking to online education, especially during today's time. All this plays the role of fuel to the growing fire of the

digital divide in our society.

6. Implications Of The Digital Divide

Though the consequences of the digital divide are deep and vastly spread, a few vital sectors have to bear the major brunt of the problem. Three such key facets have been identified and discussed vividly.

1. **Social Impact:** The raging disparities inability (and accessibility) to fully utilize the huge potential of the internet and computers creates deep segregation in the society. Internet availability offers people access to a broader range of opportunities thereby concocting a social divide between those who are enriched and those who are deficient. Such segregation holds the potential to raise social conflicts in the communities where the affluent can possess computers and access the internet while the impoverished ones are kept at bay. Efforts to bridge this gap initiated at a personal level through unacceptable activities such as theft have led to the disruption of harmony in society.

2. **Impact on education:** This component, among the many effects of the digital divide, seems to be the most dangerous. The gradual shift (though not even half) of education to online mode to complement offline learning is causing much harm. The phenomenon has paced up during this pandemic situation, wherein virtually the system of education is working online: from classes to tests. Millions of children are being left out of this transition. This further hampers their education because they could well be left behind in acquiring relevant knowledge which their peers are getting, thereby, reducing their chances of being equally capable to the other students when the time comes to start their careers. We can call this a **hindrance in Human-capital formation** i.e. the digital rift in education is putting a big barrier in pooling out a better, more employable, more skilled labour force. Human capital is both the physical and intellectual

capacities of an individual as well as the experiences that they harness. The digital divide will affect human capital as lack of access to technology will lead to a rise in unemployment. Not everyone will have the resources to gain skills required for employment as well as being aware of employment opportunities, and thus it also puts a question mark on the growth equality that we want. The inadequacy of ICT equipment coupled with the inaccessibility has made the already reeling education setup in the developing countries even more ineffective. The problem is more in rural areas. Talking about India, bucolic India faces information sparseness due to the digital divide. It works well in bolstering the threatening cycle of poverty, deprivation, and backwardness.

3. Impact on business: Though the divide in access to ICTs has hit several industries badly, its impact on business - especially the cottage industries has been pretty unfortunate. The MSME (Micro, Small, and Medium Enterprises) sector has been severely hit and the conditions have deteriorated after the rapid digitalization drive.

Most of the entrepreneurs in the rural parts of the country are skilled but uneducated. So, despite knowing their area of expertise well, most of them do not have either access or the required knowledge to operate their business digitally. A report published by Statistical Research Department in December 2020 estimated that over 110 million Indians were employed in the MSME sector. Even for the urban industries, the complexities of the various government regulations and filing of GST and other taxes, along with the changed demands of the consumers, have necessitated the entrepreneurs to shift their business operations to a more digitally oriented process. Though this has caused certain operational problems for such industries in the short run, the businessmen realize that this is the way forward.

7. Conclusion

From our study, we see that with the increasing trend of 'digitalization'

in the world and the sudden outbreak of the Covid-19 pandemic, the problem of the Digital Divide is growing exponentially. The gap between the 'haves' and 'have nots' is widening and if not mitigated urgently, this will have long-term social, economic, and environmental implications.

Digital Divide will increase the dropout rate from educational institutes further, which will result in a lack of development of skills and knowledge among people and hence, will hamper sustainable education- because this digital divide will lead to higher drop-out rates in schools and colleges and if it continues this way, then the education system itself will face trouble in existing, thereby acting as a **roadblock to 'sustainable human development. This will have a detrimental impact on the future labour force and will give India a competitive disadvantage in the global market.**

To avoid such problems, obstacles such as illiteracy, lack of skills, lack of infrastructure, and investment in rural areas must be tackled if India is to diminish the gap caused by the digital divide. Moreover, the Internet penetration is not deep enough. The government must put a thrust towards connectivity provision and core technologies creation, even in the remotest corners of the country, to mitigate the problem. Only if more investments are made in this regard, and schemes are properly implemented, will India overcome the crisis.

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