

Gender Digital Divide in India

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Abstract

Information and Communication Technology provides an excellent opportunity to reform the governance process. It helps people and countries across the globe to deal with the changing situations and disruption created by COVID-19. But the rapid proliferation of ICT along with the digital divide brings several consequences comprising educational barriers, worsening gender discrimination and so on. The gender digital divide- the gap or inequalities present between women and men regarding their access to and use of ICT- is a global phenomenon and badly affects women in developing countries. Even though India has the second highest number of internet users in the world gender digital divide is a major hindrance to India's journey towards digitalization. Digitalization has gained importance and a new meaning due to the after-effects of the pandemic. Large sections of the Indian population especially women have limited access to the internet and basic digital services. Several adverse factors combine and they create plummeting effects on women's digital inclusion in India. This article seeks to analyze the existing gender digital divide and the factors which are responsible for or amplify the gender digital inequality in India.

Keywords: *COVID-19, India, Digital Divide, Gender Digital Divide, Access,*

Introduction

Information and Communication Technologies (ICTs) have the potential to transform various sectors of society and the overall development of socio-economic conditions throughout the world. The rapid growth of ICT has brought numerous changes in the world and paved the way for the emergence of a global network society. Now, it has become one of the inevitable parts of the lives of millions of people across the globe especially due to the spread of the covid-19 pandemic. The pandemic created massive havoc on the normal lifestyle of people and seriously affected the way we interact socially, transact business, work in the office and almost all aspects of our lives. But, with various ICT platforms, people could meet their business needs, continue virtual education and stay in touch with others without breaking social distance. The advancement of modern technologies such as mobile phones, the internet, computers and other

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electronic devices can make our lives easier and more comfortable. The government provide several e-governance initiatives for effective public service delivery. The smoother interface between the government and the citizens leads to better governance. With the help of ICT, the government can also provide various services to the citizens efficiently and effectively which can ultimately fulfil the core elements of good governance. In short, ICT can revolutionise the world or create a better world.

The proliferation of ICT increases the need for digital fluency and digital literacy. Even though ICT has immense importance in our lives, dramatically, the digital divide emerges as a major hindrance. The term digital divide is popularly defined as the gap between those who have access to new forms of information technology and those who do not. However, the digital divide is a complex and complicated term and can cause much confusion in the minds of people. It is an ongoing problem and the pandemic has further made the situation even worse. India has made a big leap in the digital revolution (Ragnedda, 2019). According to recent statistics, India is the second-largest online market in the world with over 658 million internet users (Johnson, 2022). India has the second-highest number of internet users after China. But still, the digital divide is a daunting issue in India. The most embarrassing fact is that there is stark gender inequality in terms of access to technology, digital fluency, and internet usage which leads to the digital exclusion of women.

Defining Digital Divide

One of the general definitions of the digital divide is that it refers to the gap between demographics and regions that have access to modern information and communication technology and those that don't have or have restricted access. OECD (The Organization for Economic Co-operation and Development) has given a comprehensive definition of the digital divide. It defined the digital divide as the gap between individuals, households, businesses and geographic areas at different socio-economic levels concerning both their opportunities to access ICT and their use of the Internet for a wide variety of activities (OECD, 2001). According to Curtis Kularski, *"The digital divide is composed of a skill gap and a gap of physical access to Information Technology and the two gaps often contribute to each other in circular causation. Without access to technology, it is difficult to develop technical skills and it is redundant to have access to technology without first having the skill to utilize it"* (Antonio & Tuffley, 2014). Pippa Norris defined it as *'the differential access to, and use of the internet according to gender, income, race, and location'*. In her book entitled *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide*, she distinguished a global divide (industrialized and developing countries), a social divide (access of rich and poor individuals in each nation) and a democratic divide (those who do and those who do not use Internet resources for community engagement). She has also treated the digital divide in terms of physical access (Norris, 2001).

Mark Warschauer in his work *A Literacy Approach to the Digital Divide*, gave a wider definition to the digital divide. According to him, the digital divide refers to social stratification due to the unequal ability to access, adapt, and create knowledge via the use of information and communication technologies (Warschauer, 2011). Public policy group, Brookings Institution refers to it *"as the gap between society's tech-enabled haves and have-nots"* (Parks, 2013). The digital divide is a dynamic process, not a static one. Jan Van Dijk posited in his book *The Digital Divide* that at first, its major focus was on physical access. Then, on skills and usage and later on the outcome (Dijk, 2020). That means it doesn't revolve only around the concept of access. Instead, it has many other levels. It is a complicated and broad phenomenon.

Gender Digital Divide

The world continues to move online rapidly and at the same time, the cost of digital exclusion is increasing. Gender inequality is visible as clear as crystal in almost every sector of society and it can also be prevalent in the digital world. The unequal access to ICT hinders women from participating in digital societies. This can be in simple terms defined as the gender digital divide which is the gap or inequalities present between women and men regarding their access to and use of ICT. Information and communication technologies are designed for everyone irrespective of class, race, gender etc. So, women have to be equal beneficiaries of these technologies. Several studies and research have found that women tend to use the internet and mobiles differently than men or they have less access to mobile and internet compared to men. In this digital era, almost every job requires basic digital skills and even the government provides various services to the people with the help of ICT. So, holding back women from the technological world can adversely affect their lives. The digital adoption and meaningful use of technology offer women various opportunities to cope with hurdles they are facing in the physical world. But, throughout the world, several social, economic, cultural and other factors act as the stumbling blocks to women's digital empowerment.

Digital access can empower women but at the same time, it is an undeniable fact that beyond access to technology, the gender digital divide is closely related to the ownership of digital devices, skills, use of digital tools, digital fluency etc. According to the fourth annual *GSMA Mobile Gender Gap Report*, it is estimated that in low and middle-income countries, around 112 million more women started using mobile internet in the year 2020 (Carboni, 2021). The report points out that in low and middle-income countries 58% of women now use mobile internet. But, still, 234 million fewer women than men access mobile internet. It also finds out that, mobile phone ownership and mobile internet use among women increased or stayed the same in most of the countries surveyed (Carboni, 2021). In low and middle-income countries women's mobile ownership remains largely unchanged. The report gives a ray of hope that the digital gender gap has been shrinking. But at the same time, it suggests that we still have a long way to go and there are key three barriers which exacerbate the gender digital divide such as literacy and skills, affordability, safety and security. If women are excluded from the digital world, digital transformation can't achieve its potential.

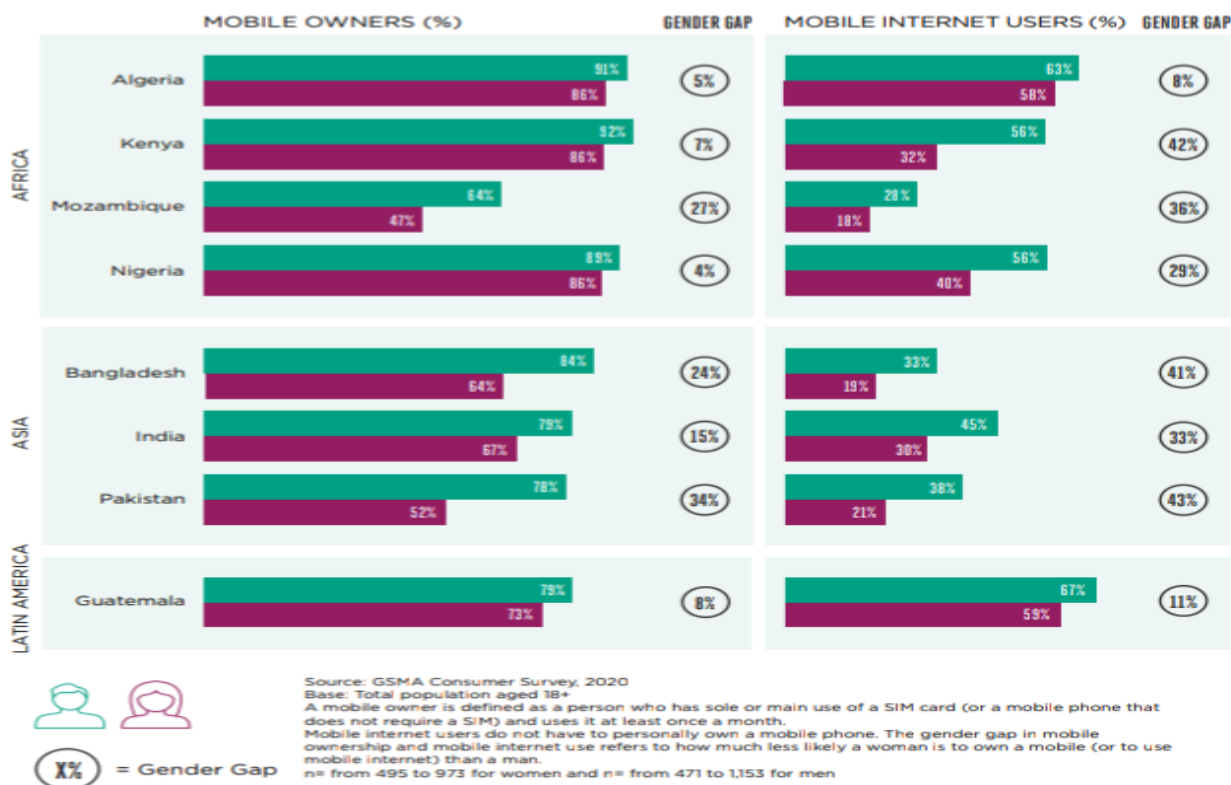
Gender Digital Divide in India

Recently, India broke the record in terms of internet users by overtaking the US with over 658 million users and became the second-largest in the world after China. But, ironically the fifth National Family Health Survey shows that women in India are still far behind in internet usage. According to the Report, only 33.3% of women all over the country have access to the internet while 57.1% of men have access which demonstrates that there is a huge gender digital disparity or variation in internet access among men and women (National Family Health Survey, 2019-21). The survey also indicates that in India 54% of women have mobile phones. But urban women have higher access to mobile phones as compared to their rural counterparts because 69.4% of urban women have mobile phones and only 46.4% of rural women use mobile phones and the rise of Covid-19 amplified the gender digital divide (National Family Health Survey, 2019-21). Due to the outbreak of Covid-19, schools and colleges were forced to move to online education and offline learning was completely suspended. Now, we are slowly moving back to a

new normal life and learning to live with Covid. During the surge of COVID cases, the rapid shift to e-learning created massive chaos in the education system and millions of learners in India were adversely affected irrespective of gender. However, the pervasive gender digital divide disrupted female education in India (Aggarwal, 2020). Women and girls who belong to underprivileged and resource-poor backgrounds have restricted access to technology. Lack of literacy is one of the major issues faced by them and it will lead to digital illiteracy and gradually pave the way for nomophobia, lack of familiarity with digital tools and finally unequal access to digital devices. These factors coupled with the price of smartphones will further make the gender digital divide worse (Bridging the Digital Divide: Girls' Lack of Access to Technology in India, 2021).

The scope of Information and Communication technology is enormous and helps to realize the potential of each individual. But there are both opportunities and challenges. To an extent India's gender digital divide is glaring. There are certain factors which contribute to the growth of the gender digital gap in India. Poor infrastructural facilities and other factors act as roadblocks to the expansion of the internet which affects both men and women. However, various inequalities such as economic dependence, the gender wage gap, socio-cultural norms etc. have some adverse impacts on women (Waghmare, 2021). In other words, they predispose the process of the gender digital gap. Indian society is primarily patriarchal where women are bound by tradition and customs. Even though things are slowly changing, India's gender digital divide has still a connection with socio-cultural norms and traditions. Our homes aren't gender-neutral spaces where women are shouldering much of the household chores. Especially women and girls from economically weaker backgrounds are bound to spend more time on household activities (Husain, 2022). The gender digital disparity is often born out of a triple disadvantage for women in India. The first point is there is a rural-urban digital divide. Secondly, there is an income-based digital divide between households and finally, intra-household discrimination prevents women from accessing digital devices within the domestic sphere (Nikore & Uppadhayay, 2021).

Figure 1, Male and Female Mobile Ownership and Mobile Internet Use by Country (Percentage of Total Adult Population)



(Source: GSMA Mobile Gender Gap Report-2021)

The above data shows that 67% of women and 75% of men in India own a mobile phone and women are 15% less likely than men to own a mobile phone. In the case of internet users, 45% of men and 30% of women have access to the internet and the existing gender gap is 33%.

Women are often confined to traditional stereotypical roles within their families and lack the essential digital skills necessary to access ICT. Economic dependence is another key barrier that boosts the gender digital gap. Women largely depend financially on their spouses or other male family members. The popular stereotypical belief in our society is that women are not good at handling their finances (Cornelissen, 2021). Most of the families, especially in rural areas, men have been making financial decisions for women. So, lack of control over finances among women is one of the economic disadvantages that can lead to the gender digital divide. Only few women have independent income from their labour (Sahai, 2020). According to the World Inequality Report: Women in India capture, only 18% of the total labour income and meanwhile men dominate the overall share with 82% holding (Tasleem, 2021). The report also stated that unpaid care work was likely to prevent women in the labour market. Here lack of control over finances among women is the byproduct of paid and unpaid work. In short, the gender digital divide caused by economic dependence is caused by many factors (Chancel, 2022).

Geographical factors are another strongest driver of digital inequality. It is evident between people living in urban areas and rural settlements. In India, majority of the population lives in rural settings. The infrastructure of the internet is not distributed equally among urban and rural communities (Nikore & Uppadhyay, 2021). Various studies show that rural India faces a more pronounced digital divide. Rural areas tend to have a limited degree of access to the internet and infrastructure compared to their urban counterparts. Unfortunately, this huge spatial divide affects women rather than men. Rural women are far less likely to have proper internet and technology access. In rural parts of India low levels of infrastructure, coverage and network quality disproportionately affect women's access to digital devices and data (Tyres, Chowdhury, & Binder). Inequality in education is one of the main contributors to the gender digital divide among rural women. Women and girls who have lower levels of education have less access to technology and the internet. It is an undeniable fact that literacy is an important means to acquire digital proficiency and skills and lack of digital literacy leads to a lack of confidence among women and girls in the use of technologies. UNESCO defined Digital literacy “as the ability to define access, manage, integrate, communicate, evaluate and create information safely and appropriately through digital technologies and networked devices for participation in economic and social life. It includes competencies that are variously referred to as computer literacy, ICT literacy, information literacy, data literacy and media literacy” (Law, Woo, Torre, & Wong, 2018). Without digital literacy, women’s empowerment will be a daydream.

Table 1, Women and Men who have ever used the Internet (%)

States and Union Territories	Women who have ever used the internet (%)			Men who have ever used the internet (%)		
	Urban	Rural	Total	Urban	Rural	Total
Andaman&Nicobar Islands	44.1	27.9	34.8	54.6	41.1	46.5
Andhra Pradesh	33.9	15.4	21.0	65.1	41.5	48.8
Assam	49.0	24.4	28.2	67.4	37.8	42.3
Bihar	38.4	17.0	20.6	58.4	39.4	43.6
Dadra& Nagar Haveli and Daman& Diu	49.4	23.8	36.7	76.2	61.3	68.3
Goa	78.1	68.3	73.7	86.1	76.6	82.9
Gujarat	48.9	17.5	30.8	72.9	48.0	58.9
Himachal Pradesh	78.9	45.2	49.7	83.7	65.1	67.9
Jammu&Kashmir	55.0	38.9	43.3	79.4	68.8	72.0
Karnataka	50.1	24.8	35.0	71.5	55.6	62.4
Kerala	64.9	57.5	61.1	78.3	74.2	76.1
Lakshadweep	61.8	36.0	56.4	81.5	77.0	80.3
Ladakh	66.5	54.0	56.4	82.9	64.3	67.8
Maharashtra	54.3	23.7	38.0	76.8	47.2	61.5
Meghalaya	57.8	28.0	34.7	59.2	38.5	42.1
Manipur	50.8	40.4	44.8	81.5	68.2	73.9

Mizoram	83.8	48.0	67.6	92.7	63.9	79.7
Nagaland	66.5	40.3	49.9	81.0	55.2	64.6
Sikkim	90.0	68.1	76.7	94.2	69.5	78.2
Telangana	43.9	15.8	26.5	72.3	46.7	57.4
Tripura	36.6	17.7	22.9	47.0	45.2	45.7
West Bengal	48.1	14.0	25.5	64.6	38.3	46.7
Arunachal Pradesh	70.0	49.6	52.9	86.9	68.5	71.6
Chhattisgarh	44.5	20.8	26.7	75.4	50.4	56.3
Haryana	60.2	42.8	48.4	79.7	68.8	72.4
Jharkhand	57.8	22.7	31.4	70.8	53.2	58.0
Madhya Pradesh	46.5	20.1	26.9	72.7	49.3	55.7
Odisha	39.7	21.3	24.9	64.2	47.2	50.7
Punjab	64.1	48.8	54.8	85.6	73.0	78.2
Rajasthan	56.1	30.8	36.9	81.7	59.4	65.2
Tamilnadu	55.8	39.2	46.9	76.1	64.9	70.2
Uttar Pradesh	50.2	24.5	30.6	72.4	54.2	59.1
Uttarakhand	58.4	39.4	45.1	82.1	71.2	74.6
Chandigarh	75.2	-	75.2	91.9	-	91.9
NCT of Delhi	63.7	69.2	63.8	85.1	87.4	85.2
Puducherry	66.9	50.4	61.9	85.1	69.4	80.7

(Source: Fifth National Family Health Survey-2019-2021)

According to the data collected by the Fifth National Family Health Survey, there is an urban and rural digital divide as well as a gender divide concerning the use of the internet. The survey was conducted in 28 states and 8 union territories of India. The survey points out that in urban India 15 states and 6 union territories reported more than 50 per cent of women who had ever used the internet. The same data shows that in all states and union territories except Tripura, men who had ever used the internet are above 50 per cent in urban India. The percentage of women who have ever used the internet in rural India has dropped. Only three states including Goa, Sikkim, Kerala and three union territories such as NCT of Delhi, Puducherry and Ladakh reported more than 50 per cent of women who had used the internet. When comparing rural women who have ever used the internet with their male counterparts there is a stark gender digital divide which can be seen in almost all states and union territories of India. West Bengal, Andhra Pradesh, Telangana, Tripura, Bihar and Gujarat have reported the lowest percentage of women who have ever used the internet in rural India. It is evident from the report that there is no single state or Union territory in India that has more women than men who have ever used the internet. The data alerts us to the urgent need to find ways to curb digital inequalities in terms of internet usage.

Online safety issues such as cyberstalking, and cyberbullying are the major risks associated with digital technology and women are at great risk of such digital harm. Not only women but also people of diverse genders are facing some sort of digital harm throughout the world. Nowadays social media is perceived as an unsafe space for women and girls which has become fetching grounds for cyber criminals. According to the National Crime Records Bureau, there was a surge in cyber-crime against women in the period between 2017 and 2020 (Tripathi, 2022). When women and girls meet harmful experiences in the digital world normally it will make them mentally down and build fear in their minds while using technology. Most probably women and

girls may have little knowledge about the online safety measures and services which are available to them. Here also digital illiteracy acts as a villain and makes them more vulnerable to such risks than men. In the eyes of other family members, the internet is not a safe space for women and they also restrict the access of women to technology. Various studies found that during the COVID-19 pandemic, there was a spurt in cyber crimes against women and girls in India. The National Commission for Women in its latest report shows there is a rise in the cyber-crimes against women (Violence against women, cyber crimes go up in Delhi, 25th February 2022).

Table 2, Cyber-crime against women in India

Total number of Cyber-crimes against Women			
Year	States	Union Territories	Total
2017	4158	84	4242
2018	5938	92	6030
2019	8306	73	8379
2020	10311	94	10405

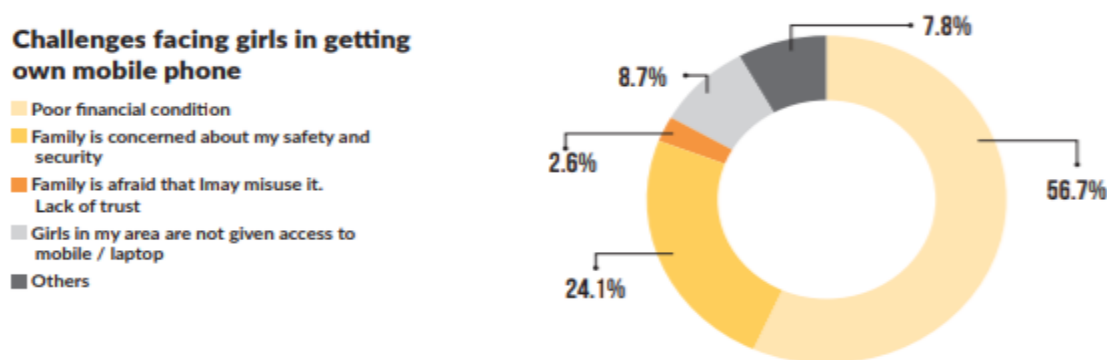
(Source: National Crime Records Bureau Report-2017-2020)

Table 2 is about the total number of cyber-crimes against women in India reported by the National Crime Records Bureau in the period between 2017 to 2020. It reveals that the total number of cyber-crimes against women doubled in India over four years. In 2017 the total number of cyber-crimes was 4242 whereas, in 2020, 10405 cyber-crimes were reported. In the year 2019, the total number of crimes declined to 73 in the union territories but again increased in 2020. It is also shown there was a rise in the total number of cyber-crimes in all states and union territories of India.

Lack of awareness of the potential benefits of information and communication technologies and the internet is one of the most important reasons for the growth of the gender digital divide in our country. Those women who face a lack of familiarity or comfort with technology may not use the internet and digital devices properly. Due to digital illiteracy, they lack knowledge about various digital initiatives of the government. According to several reports even though India is accelerating its covid-19 vaccine drive, the vaccination rates remain higher among men. COVID-19 Vaccine Intelligence Network (Co-WIN) was launched on 16th January 2021 which reflects the citizen-centric design of India's vaccination programme. But women are left behind in the process of this vaccination drive. Experts claim that the gender gap in vaccination is connected with several gender inequality-related issues (Jairath, 2021). They point out that unequal technological access, lack of awareness and digital illiteracy are some of the major issues which intensify the gender gap in the vaccination rate. This is because women are less likely to know how to register names on the Co-WIN website and they may depend on the gatekeepers of their families for the same purpose (Radhakrishnan, 2021). As per the data given in the Co-WIN

portal till May 12th, 2022, the total number of males who have been vaccinated all over India is 95,56,95,475 and in the case of women, it is 91,85,02,205. The gap is shrinking slowly. However, the total gender disparity in the vaccination drive is not yet completely bridged. If women are digitally empowered, they can easily access any e-governance initiatives provided by the government without relying on others. The pandemic taught us some lessons which include the necessity to bridge all kinds of the digital divide and the dire need for digital inclusion for all citizens. During the pandemic period, several studies and surveys found that a majority of girls in India have no or limited access to mobile phones and other digital devices. The Centre for Catalyzing Change (C3) a Delhi-based non-governmental organisation in association with the Digital Empowerment Foundation conducted a survey across 29 districts in 10 states covering 4,100 respondents from August to October in the year 2020. According to the survey, there is a crisis of access to digital devices to adolescent girls in India.

Figure 2, Limited access to Community Digital Infrastructure in India – Challenges before Girls



(Source: Centre for Catalyzing Change survey-2020)

The data shows the major challenges faced by girls in getting mobile phones. It points out that 57 per cent of adolescent girls have poor financial conditions which was a major hurdle to accessing laptops and mobile phones. 85 per cent of the girls do not have laptops or computers at home. It reveals that 2.6 per cent of girls are facing a lack of trust from families. 24.1 per cent of families are concerned about their safety and security and 8.7 per cent of girls are not given access to mobile phones or laptops in the area where the survey was conducted.

Similarly, the Centre for Budget and Policy Studies surveyed the impact of Covid-19 on the lives and education of children in India in 2020. In its report, it was found that only 30 per cent of children surveyed in India reported having access to a mobile phone. Among them, only 26 per cent of girls have access in comparison to 37 per cent of boys (Ghatak, Yareseeme, & Sha, 2020). Remote learning or e-learning during the COVID-19 time has created disastrous effects on girls in India. In early June 2020, a 14-year-old girl in Kerala committed suicide as she did not have access to online classes (Bansal & Shukla, 2020). Also, in West Bengal, a 16-year-old girl committed suicide because she feared failing exams as she could not attend online classes. These incidents point out the need to strengthen the digital participation of girls in education in the post-COVID period. The equal participation of men and women in governance will improve the overall performance of the country. In this technological era to achieve gender equality,

women and young girls should get equal access to technology and digital literacy by ensuring cyber security.

Conclusion

The digital divide is a chronic headache for the government which can only be cured by strong, effective and efficient measures and policies. There are so many citizen-centric digital initiatives in India which may not be fully used by women due to the existing gender digital divide. Awareness programmes and training about these digital initiatives should be conducted in panchayats and municipalities for all especially women. Otherwise, the majority of women will be excluded from the e-governance process. BBC Media Action in a research study entitled '*Increasing Women's Digital Literacy in India: What Works*' indicates wealth and education are the determinants of digital access and use (Tyers, Highet, Chamberlain, & Khanna, 2021). It also emphasizes the internal and external normative barriers to women's digital adoption. The former is related to women's lack of knowledge, low confidence and negative attitudes toward using technology and the latter exists in women's social networks (Tyers et al. 2021). There are strong community norms that limit women's access to digital technology. Access, digital literacy and online safety are the three interlinked areas which promote digital gender equality for girls and women. Digital empowerment of women can only be achieved through digital literacy. Information technology should be included as a compulsory subject and the basics of ICT should be taught in the primary class itself. Financial independence can reduce the intensity of the gender digital divide to an extent. Because financially empowered women can purchase well-equipped smartphones and digital devices and access the internet without the help of their family members. Patriarchal norms and behaviours cannot be wiped out easily. But it will change gradually with continuous efforts. The gatekeepers of women are afraid of the security of women and girls in the cyber world. So, cyber security measures should be ensured to protect women from the evil hands of cyber criminals. There is explosive growth in terms of internet users in India but it has more unconnected people including women. As per the NFHS data, the number of women owning mobile phones increased steadily in India but internet access is comparatively low (National Family Health Survey-5, 2019-21). The disparity in terms of internet access should be solved because the smartphone is pointless without internet usage in the information age. Digital entrepreneurship allows individuals to reach a global level and participate in the global digital market. But, digital illiteracy and unfamiliarity with digital platforms hinder women entrepreneurs' participation in the digital market (Gupta, 2021). So, the government should encourage women's digital participation. India's journey towards digitization will only be fulfilled completely with the inclusion of women and girls.

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