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## INDIAN WOMEN IN ACCESS TO INFORMATION AND COMMUNICATION TECHNOLOGIES

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### Abstract

Information and Communication Technologies (ICTs) are the wide and diverse set of scientific hi-tech tools and resources to create, circulate, store, and manage information. Modern ICTs comprised of computers, internet and wireless communication technology along with powerful software for processing and integrating text, sound and video into electronic media etc. The spread of the global electronic network and wireless telephone, smart phone etc. have generated an unparalleled global flow of information, products, capital and ideas. In Indian society, women are the most indigent with the least access to resources and with little control over decisions that affect their lives. So, women remain at the wrong side of the 'digital divide', with limited access to and control over ICTs. The present article is focused on how women of India are placed in terms of equality and access of ICTs lead knowledge society.

**Key Words:** Information, Communication, Technology, Digital, Divide.

### Introduction

The world is passing through a knowledge revolution. It observes exploring up of entirely new panorama in the communication technologies. Information and Communication Technologies (ICTs) have the potential to enhance economic activities and employment prospect and thus improve the quality of life. ICTs have also made people to participate diverse areas of social life. Development of society is possible through the skillful use of ICTs.

Information and Communication Technologies (ICTs) are the wide and diverse set of scientific hi-tech tools and resources to create, circulate, store, and manage information. Traditional ICT tools such as television, radio and telephone have proved their effectiveness in promoting growth in under developed areas. Modern ICTs comprised of computers, internet and wireless communication technology along with powerful software for processing and integrating text, sound and video into electronic media etc. The spread of the global electronic network and wireless telephone, smart phone etc have generated an unparalleled global flow of information, products, capital and ideas. It is the swiftest growing industry in the world and it is poised to become the largest in the world. The ICT revolution is cutting across geographical locations and turned the world into a global village.

In spite of the vast opportunities for economic growth and social development offered by ICT, there is a negative aspect. ICT may widen the gap between those who can use the new technologies and those who cannot use it. The difference in varies aspects in access to ICT is called 'digital divide'. The 'digital divide' between the developed and developing world, is the result of various factors including poverty, lack of resources, illiteracy and low levels of education. In Indian society, women are the most indigent with the least access to resources and with little control over decisions that affect their lives. So, women remain at the wrong side of the 'digital divide', with limited access to and control over ICTs.

Great inequality exists in terms of accessibility of ICTs on the basis of gender identity. A very low number of women access and use ICT compared to men. An emerging gender divide was identified in 1995 by United Nations Commission on Science and Technology for Development (UNCSTD). The Commission recognized significant gender differences in ranks of access to and control of ICTs. ICT benefits are unevenly distributed between different countries, regions and also between men and women. This uneven distribution of benefits of ICTs is termed as 'digital divide'. It refers to the differences in resources and capabilities to access and effectively utilize ICTs for development. As a potential tool, ICT can play a vital role in promotion of gender equality and the empowerment of women.

Technological developments are not value neutral. They are socially constructed and thus have differential impacts on men and women. Women's capacity to utilize the potential of the new ICT as tools for empowerment is restricted in different ways. Some of these constrains are linked to factors (such as technical infrastructure, connection costs, computer, literacy, language skill etc.) that affect men and women differently. But due to the wide existence of discrimination in society, the disadvantages are exacerbating for women. Thus the socially constructed gender roles and relationships play a vital role in determining the capacity of women and men to have access to ICTs on equal or unequal terms.

Economic and market factors also play a crucial role in accessibility of ICTs by men and women. Historically, the isolation of women from the mainstream economy and their lack of access to information have led them to become far-off from global ocean of information and knowledge. The capabilities of women to effectively use ICTs for their advancement is clearly dependent of many social, economic and structural factors including education, literacy, geographic location, social class etc.

ICT is useful for everyone. So, women should to be equal beneficiaries of the advantages offered by the technology. ICTs have opened up new opportunities for women to communicate, and get, store, share information. The services provided by ICTs have allowed women greater access to information for their productive tasks, as well as for organizing and intensifying their local organizations, for networking and linkage building locally and internationally.

### Government initiatives in the IT sector in India:

In 1998, India set a goal to become an “Information Technology Superpower” and one of the largest generators and exporters of software in the world within 10 years. Since embarking on its national IT plan, India’s IT industry has shown highest growth rates compared to any other industry in the country. The “IT for the Masses” initiative symbolize the strategic vision of IT of the Government of India as an enabler of new opportunities to link the gap between India’s economically rich and poor class of people. It identified infrastructure and services, e-governance, education, mass campaign for IT awareness as the priority issues that need to be addressed to actualize this development.

Government of India launched National e-Governance Plan (NeGP) in 2006. 31 Mission Mode Projects covering various domains were initiated. In spite of successful implementation of many e-Governance projects across the country, e-Governance as a whole was unable to make the expected impact and fulfil all its objectives. It has been felt that a lot more thrust is required to ensure e-Governance in the country.

**Digital India programme:** Digital India programme was launched by the Government of India on 1 July 2015, with an objective of connecting rural areas with high-speed Internet networks and improving digital literacy. The vision of Digital India programme is inclusive growth in areas of electronic services, products, manufacturing and job opportunities. It is centred on three key areas – digital infrastructure as a utility to every citizen, governance and services on demand and digital empowerment of citizens as follows:

#### 1. Digital Infrastructure

##### A. With the aims to digitally connect the remotest Indian villagers through broadband and high speed internet, following programmes started:

- The National Optical Fibre Network (NOFN) project was started in which connection through Optical fibre, and last-mile connectivity options offered by wireless technologies.
- National Information Infrastructure was initiated for integration of all core ICT infrastructure built under National e-Governance Plan (NeGP). These infrastructure components include networks such as State Wide Area Network (SWAN), National Knowledge Network (NKN), National Optical Fibre Network (NOFN), Government User Network (GUN) and the MeghRaj Cloud.
- National Rural Internet Mission with coverage of ICTs through Common Services Centres (CSCs) and Post offices as multi-service centre.

##### B. Infrastructure for digital identity and financial inclusion:

- Aadhaar, a 12-digit individual identification number is issued by the Unique Identification Authority of India (UIDAI) on behalf of the Government of India. Aadhaar can be used by any application which needs to establish the identity of a resident and/or provide secure access for the resident to services/benefits/entitlements offered by the application. Mobile number is now also linked with Aadhaar.

- Pradhan Mantri Jan-Dhan Yojana, has been launched as a national mission for financial inclusion of all the households in the country. The plan envisages universal access to banking facilities with at least one basic banking account per household, financial literacy, access to credit, insurance and pension facility. It also envisages channelizing all government benefits to the beneficiaries’ bank accounts.

##### C. Common services centres:

- Internet connectivity is available through the CSC. The neighbourhood CSC is a convenient and friendly place to know and avail ICT services, banking services (including loans) and also to learn about suitable agricultural practices.

##### D. Digital lockers:

- It is sharable private spaces on a public cloud to every citizen. All documents of any citizen of India, issued by Government departments and agencies could be stored for easy online access. Digital locker would have a collection of digital repository to upload their documents (electronic) in a standard format for issuing authorities.

##### E. Make cyberspace safe and secure:

- India appointed its first chief information security officer (CISO) in 2015
- The National cyber security architecture will provide a framework for designated agencies to monitor, certify and fortify India’s networks in accordance with the law aimed at preventing sabotage and espionage of core IT systems and networks.

#### 2. Governance & Services:

The ultimate objective is to make all government services accessible to the common man in his locality, through common service delivery outlets at affordable costs.

##### A. Integrated services:

- Providing single-window access to all govt. services to the citizens and businesses.

##### B. Real time services:

- e-Governance applications to give the related information, services and grievance-handling mechanism online on a real time basis and across all types of access devices such as desktop computers, laptops, tablets, mobiles, etc.

##### C. Use of cloud technologies:

- Govt. of India Cloud is named as ‘MeghRaj’.

- To accelerate delivery of e-services e-cloud platform can host online repositories for all possible entitlements in areas like Public Distribution System, BPL entitlements, social sector benefits, LPG and other subsidies, etc.

#### **D. Government services for business:**

- For improving Business opportunities with ease in the country, the e-Biz project provides integrated services across various central and state departments/ agencies through a single window mechanism to all businesses and investors. This may encourage investors for setting up a commercial enterprise.
- The e-Trade facilitates provide foreign trade in India by promoting effective and efficient delivery of services by various regulatory/ facilitating agencies involved in foreign trade, to enable traders to avail online services from these agencies.

#### **E. Digital Financial Transactions:**

- Introduced electronic payments and fund transfers for targeted and direct delivery to the intended beneficiaries without the involvement of middlemen.
- Through Mobile Services Delivery Gateway (MSDG) under Mobile Seva, the citizens can choose from a host of e-payment options such as Net banking, credit card, debit card, prepaid/ cash card/ wallet, Immediate Payment Service (IMPS) and mobile wallet.

#### **3. Digital Empowerment:**

Digital connectivity is initiated to empower all citizens digitally. The digital India programme focus on-

**A. Digital literacy** to ensure that all Panchayats in the country have high-speed connectivity through National Optical Fiber Network (NOFN) project.

- Digitization and connectivity of the local institutions, such as Panchayat office, schools, health centres, libraries, etc.
- National Digital Literacy Mission initiated with the vision to empower at least one person per household with crucial digital literacy skills by 2020.

**B. Digital resources and collaborative digital** platforms give emphasis on availability of digital resources/services in Indian languages along with digitalisation of government documents or certificates; providing access to digital resources for citizens with special needs, such as persons with visual or hearing impairments, learning or cognitive disabilities, physical disabilities etc.

**Benefits of ICTs for women:** Women can be benefitted from ICT in myriad ways:

#### **Increase awareness on gender issues:**

Through ICT enabled information tools including radio, telephone, television and the internet, awareness on gender equality issues can be raised and improved. Engendering of knowledge networks opens up avenues for women to freely articulate and share their experiences, concerns and knowledge with the possibilities of their further enrichment with other network users. They are instrumental in helping women break from the stereotypical structures and narrow outlooks of the society and from the hegemony of males dominated societal structures. Other benefits include objective and targeted information flows, low communication costs, sharing of best practices and solutions, and opening up alternate communication channels with women, hitherto unreachable or under-served, and accomplish a deeper geographic penetration.

Through the use of convergence and amalgam technologies such as community e-mails, community radio broadcast, telecentres, newsletters, videos, etc., women communities would overcome the constraints of seclusion, mobilize resources and support, reach out to new markets, and open up avenues for life-long learning.

ICTs have opened the direct window for women to the outside world. Information new flows to them without distortion or any form of censoring, and they have access to the same information as their male counterpart. This leads to broadening of perspectives, building up of greater understanding of their current situation and causes of inequality, and initiation of interactive processes for information exchange. The opening up of windows of communication with the external world made the women more informed.

#### **Increase economic opportunities for women:**

Women have been restricted from participation in many types of economic activities due to non-ability to bear transport cost. New areas of empowerment such as tele-marketing, medical transcription etc. have opened up tremendous job opportunities for women. Though these are underpaid jobs, they are opening up avenues where none existed before. One of the most powerful applications of ICT is e-commerce. Electronic commerce refers not just to selling of products and services online, but it also refers to the promotion of a new class of ICT-savvy women entrepreneurs in both rural and urban areas. Women over time have learnt the advantages offered by ICT and its potential in opening up widows to the outside world. This has put them in a greater control over the activities performed by them-lying the foundation of entrepreneurship development.

ICTs help entrepreneurs by reducing transaction costs and increase market coverage. Through ICTs, women can get information on job opportunities; she can submit online application for a suitable job, which will reduce time consumption for communicating different offices; she can avail information regarding govt. initiatives/schemes/facilities for women empowerment and also avail those facilities. Women entrepreneurs can access ICTs in advertising business/selling of products/ placing order to purchase raw materials etc. Transaction of money through net-banking and different mobile apps helps women in increasing self-confidence. ICTs ensure people in general and women in particular to get full benefit of different government schemes through DBT.

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### **Increase scope for women's education:**

ICTs can be used to provide women with useful information. Radio and Television broadcasting, audio and video cassettes are used as supplements to print materials in traditional education. But, now newer technologies such as audio and video conferencing, the Internet and e-mail are taking over. ICTs can help women in the field of education in gathering of information on different academic as well as professional courses; in achieving academic degree through *Swayam* portal and Distance Education mode, which save time, monetary cost of transportation and also save her from physical exertion; she may attend e-learning classes and availing e-books and e-journals. She can also appear online interview and examinations.

### **Provide scope for women to participate in public discussions:**

Women remain vastly under-represented in national local assemblies. ICTs have potential to empower women by enabling them to participate in public discussions. By using ICTs she can get information and aware on different women issues; she can take part in discussion on national and international socio-economic and political issues and place her opinion on a particular issue through social media; She can exercise the right to expression through social media. This kind of participation enriches her self confidence.

### **Aware women on health issues:**

ICTs can help to aware women on health issues and hygiene practice. Women can be aware on different health-related schemes through advertisement, posters etc. They may come to know about their reproductive rights and safe motherhood. Women can avail Tele-medicine through video-conferencing system.

### **Helpful in personal security of women:**

Any woman can dial women helpline number and ensure her security in unsafe situation, either in domestic or in community level. On dialing women helpline number she can get all kind of information on women issues. Different mobile apps can help her to inform her family members regarding her where about. She can get information about legal rights of women and legal procedure to avail her rights through different information and communication tools. In case of violation of human rights, she can register F.I.R. against the perpetrator through a phone call and/or messaging to the police station. She can get the message regarding date of hearing/trial of her case in court through new media of communication.

### **Helpful in broadening mindset of people:**

The unrestricted flow of information through ICT processes opens up avenues for men and women to view each other from a different perspective. The sharing of views between communities living in different geographical and cultural sphere will lead to broadening of views and changing of mindsets over time. It is a fact that horizontal level of communication has a greater impact than the vertical communication structures and knowledge networking promoters' horizontal flow of information. Men may learn more about the productive roles of women in the wider economy in different cultures and regions, and may become more willing to provide equal spaces to women. The removal of this stereotypic mindset would certainly be a big step towards the empowerment of women.

### **Barrier of women's access to ICTs:**

Access to ICT is typically divided by traditional lines of unequal distribution of benefits of development resulting in unequal access to ICT or 'digital exclusion'.

It is a firm truth that women are poorest of the poor and they experience vulnerability and powerlessness to a much higher degree than men. Women's access to ICTs and control of them is depend on many factors, such as gender discrimination in jobs and education, social class, illiteracy and geographical location (urban or rural) etc.

#### **Educational barrier:**

The potential of ICTs for women is highly dependent upon their levels of education and technical skill. The internet technology is foreign invented, with English being the predominant language. So access to internet is of no use without basic literacy. Women have very little time to learn because of heavy domestic responsibilities and other socio-cultural factors. Increased female enrolment at primary level will enhance female participation in higher education, which in turn enhances female participation in technological education. As a result more women could be benefited from the new avenues created by ICTs and hence become empowered.

#### **Locational barrier:**

There is a definite urban bias in ICT access and use in case of women. Mostly IT education Infrastructure is concentrated in urban areas. If choices of technologies are made that have an urban bias and it is highly cost effective. So, very few women can have access to ICTs and avail IT education. Internet connectivity is available within urban areas, while in remote areas internet connectivity remains very low. So, being in the majority in rural areas, women have a little chance of accessing new technologies.

#### **Economic barrier:**

ICTs are associated physical and infrastructural requirements such as electricity, telephone lines, spare parts, and internet gateways etc., which are unevenly distributed and add to the cost of initiating knowledge networking. The problem is even compounded with the fact that poverty and lack of economic power is borne more by women than men. They have little control over the household income and do not have the decision-making power to invest in these technologies. Women are less than men to own Radio/TV/computer/laptop etc. Moreover, Internet cafes charge for their services at market rates. High telephone charges inhibit users from going on-line. Due to economic constraints, women's access to ICTs has become fewer in number in India.

### **Structural barrier:**

Access for rural women, specially, will depend critically on where the technological institutions are located. The access of women is limited if the information centres are located in places that women may not be comfortable to go there. Establishing telecommunication centres in local communities is a useful strategy to remove structural barrier to access ICTs for women.

### **Socio-Cultural barrier:**

Many young girls in India are not encouraged to take up science subjects in schools (especially in rural areas) with a feeling that it would be an area in which they could not shine. This is an aspect of gender socialization. Similarly, there is limited awareness of the full range of opportunities afforded by ICT other than simple passive access to information. Lack of understanding as to the ways in which ICT can be used actively to disseminate data, participate in and influence decision-making processes and coordinating community activities are often cited as barriers facing by women.

### **Conclusion:**

In order to reduce constraints to access ICTs for women and ensure gender equality with regard to use of ICTs by women and men, different measures may be taken. Gender equity in using ICT has to be considered in policy content as well as in the process of policy implementation.

Availability of communication in uncovered areas is required to be increased. As large number of women lives in rural and semi-urban areas, emphasis has to put on common use facilities. Internet services could be added to already existing communication services of phone shops, teleports, public call offices etc. Public access to communication facilities should be provided in or near institutions that women and girls visit frequently such as schools, markets, health clinics, post offices or grameen banks etc.

The most important factor to increase the participation of women and girls in ICT is to offer them more scope in all level of education from literacy to higher education, scientific and technological education. Women and girls need to be prepared for performing different roles in ICT as users, creators, designers and managers. Efforts have to be made to increase the number of girls and women to study ICT-related subjects in formal schooling and outside schools. Introduction of scholarships may be provided to encourage women to enter science and technology-based subjects. Women outside the formal schooling system and already part of the workforce should be given access to upgrading and retraining courses or the possibility to acquire new skills. Training providers may be encouraged to specifically address a female clientele and to develop appropriate training programme.

Linking women entrepreneurs to ICT requires not only education and training but also the provision of finance. In this context microfinance schemes are the most likely sources of capital. Managers of microfinance institutions need to be made aware of the viability of ICT-based business of women.

In spite of progress in the ICT industry, the benefits of ICT have not reached the majority of people especially majority of women. The traditional pattern of male and female differential attitudes towards technologies is still exists. ITC cannot be effectively used for development of society as a whole unless the crucial problem of the 'digital divide' is addressed in terms of gender. Women and girls must be included as beneficiaries of the 'ICT revolution' as a fundamental principle of equality and an essential partner in the shaping, direction and growth of the 'Information Society'. They must have equal opportunities to actively participate in ICT policy decision-making institutions and the agenda setting processes.

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