

BRIDGING THE DIGITAL GENDER DIVIDE: EMPOWERING WOMEN THROUGH DIGITAL LITERACY IN INDIA

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Abstract:- Digital technologies hold immense potential to improve people's economic and social outcomes, yet challenges remain regarding women's access to and use of these technologies. In India, women's digital literacy rate is lower compared to that of men. The divide in digital literacy is due to various factors; those are geographic, education, government policy, as well as socio-economic and cultural systems. The urgency has signified the need to empower Indian women in using digital technology through digital literacy. It is well anticipated that women will not only gain information but also improve their quality of life. This paper explores a range of factors that underpin the digital gender divide. Also try to understand the hurdles to access, affordability, and lack of education as well as inherent biases and socio-cultural norms curtail women's ability to benefit from the opportunities offered by the digital transformation. The efforts were taken through increasing Indian women's capacity through five competencies: access, analyze, create, reflect, and act. It aims to support the equitable participation of women in the digital age.

Keywords:- Information Communication Technology, Digital Media, Digital Literacy, Digital Divide, Women Empowerment.

1. INTRODUCTION

The growth of digital technology in India has experienced rapid development. People use digital media almost every day, from waking up to going back to sleep. Digital media does not only support people's daily activities but also brings many changes in almost all aspects of life. Besides, the aspiration to connect easily with relatives, friends, colleagues, professional friend, and so on, leads some people to tend to go online always. At this juncture, the community has entered the era of digital society. Digital media and digital literacy are of the utmost importance in today's era of digital society.

Digital society is a society that cannot be alienated from digital technology and the internet to support the needs of getting information in everyday life. Information communication technology certainly gives a huge contribution, if people have the ability and good skills in its use. But to use digital technology, the conditions have required anyone to have digital literacy, skill, or ability to use digital media tools such as computers, internet, mobile phones, texting, and social networking sites. Their familiarity with technology and reliance on digital communications will transform the way we work, entertain, collaborate, consume and create.

To prepare for the wave of digital transformation, building digital skills is as essential as creating digital infrastructure; starting with a progressive focus on digital literacy. Those who not have either will find themselves sidelined. This has been acknowledged as UNESCO's Sustainable Development Goal 4 (SDG4), where one of the indicators calls on countries to track digital literacy skills [1]. Internet and Mobile Association of India (IAMAI) and Nielsen in September 2019, titled India Internet 2019, report that India has 451 million monthly internet users (about 37% of the total population), second only to China. The use of digital technology in India is still dominated by men.

This can be seen from the data of the report, which finds a significantly stronger gender disparity, with male users accounting for 67% of the country's Internet population, meaning women account for only 33% of India's Internet users [2]. Based on these data, there is silent a digital divide between men and women in India, where there are many Indian women who do not know how to use digital technology effectively. Digital India through a gender lens (2018) found that most women have little knowledge, ability, and opportunity of access to digital technology.

According to Anita Gurumuthy and Nandini Chami, the barriers of women in using technology include a lack of confidence, no money, inability to use smartphones, laptops or high-tech devices, and a lack of training in technology [3]. The digital divide is not only seen in the digital literacy between men and women, but also the accepted role in the field of



information and communication technology. According to Amy O'Donnell & Caroline Sweetman (2018), the development of information technology is still dominated by men [4].

A gender gap exists in access to Information Communication Technology (ICT), but far larger divides exist with the design of hardware and software through to the very power to contribute, create and control content. In the context of the public space, the role of women in the professional field is confined to the use of digital technology is mostly in administrative positions, such as handling email, processing the data, handling the operations, and others.

Gender issues are about equal access to digital technology that is faced by women. ICT is also needed by women for various activities, such as in families, social, as well as economic activities. Therefore, the capacity of women in the ICT field needs to be improved because it becomes an important pillar in the nation's progress. Based on these problems, the researcher is interested in describing the importance of digital literacy for the empowerment of women to bridge the digital divide in the now and the future.

2. LITERATURE REVIEW

2.1. Gender divides in technology adoption

Studies on Information Communication Technology acceptance by women are important in that they improve understanding of adoption behavior and identify factors that enhance and encourage adoption. There are many differences between men and women's technology adoption highlighted in the literature. That women report less confidence in their technical capability and more negative attitudes about technology than men have been established [5].

Buche (2006) deliberate gender differences in defining information technology and acknowledged variations in how even perceptions of technology differ by gender, with women defining technology "in terms of innovations that make life superior or easier for the individual" or as something that might be used for "better communication" whereas their male counterparts more often describe technology in terms of computer equipment and "mechanical or electronic applications of science" [6].

According to Venkatesh and Morris, gender was included as a factor in the study of differences in technology use in the workplace; women were most likely to be motivated to utilize technology when they found it easy to use and when social influences favored technology-friendly behaviors [7]. Similar differences in gendered technology use were observed by Nysveen, et al. (2005) in their finding of mobile chat use; usefulness drove intention for men compared to enjoyment and normative pressure for women.

While both female and male participants "[assume] that ICT leads to positive change" [3], there are differences in motivations for adoption. Men are likely to use technology to complete a specific task, while women typically prefer to adopt technology to improve social connections and communication [8].

2.2. Gender divides in technology use

Studies have also revealed that women use ICT in their lives in various ways, and with different emphases than men in the same cultures and societies, for reasons related to their professional and workplace needs as well as home, family and personal care such as health and educational needs, banking, travel and hobbies [9].

Wong, et al. did not find any moderating effect of gender in their study of higher perceived usefulness and ease of use and attitude towards computers; however, they were looking at computers in education which, over time, may have permeated the lives of either gender and reduced any gender gap [10]. While there are calls for more research focused on gendered use of digital technology, there is a lack of literature on factors that add to gendered ICT adoption and use in countries such as India.

2.3. Social factors influencing in the digital gender divide: adoption and uses

The belief that gendered roles are socially constructed makes socio-cultural comparative analysis important in our discussion on digital literacy. Socio-cultural expectations of women about ICT use are not always gender-based, but gender can play a significant role in determining interest in and adoption of new ICT [11]. This relates to some extent to Castaño and Webster's suggestion that the way that women use ICT needs to be considered based on contextual elements and life-course events.



Domestic, workplace and other social contexts, such as gender regimes in the society, family structures and employment cultures, influence adoption and use of ICT in daily lives[12]. In their comparative study of cultural influences on Internet adoption by women in the United States and Japan, Ono and Zavodny found that social roles influenced by national culture, such as gendered employment roles, have a significant effect on the adoption and use of technology by women [13].

That social influences are mainly important for the adoption of ICT underscores the importance of exploring these factors in varied contexts. Oreglia and Srinivasan's opined of Indian and Chinese women as intermediaries in ICT use found that women have to constantly renegotiate their roles in family and community[14]. This research highlight the need for a greater emphasis on understanding social context related to ICT acceptance and use.

2.4. Digital inclusion and women empowerment

Some have argued that digital technology empowers women, although the level of empowerment will depend on the level of access and actual usage of technologies. Hilbert (2011), for example, recognizes that women's use of digital technology is significant for establishing egalitarian roles in labor and political markets as women have been unequally treated in the past and these inequalities have transferred to their uses of digital technology [15]. He calls for an examination of the positive attitudes and natural abilities that women have, such as good communication skills and media capacities, to overcome these ICT use inequalities.

Van Dijk and Van Deursen (2014) also agreed that gendered differences in technology disappear as education and physical access to technology equalize [16]. While Herbert (2017) and others have emphasized the increased opportunities for small business ventures and education that the Internet affords women in developing countries, when we observe the worldviews and pervading cultures of the Indian subcontinent, as in many parts of the world, we see that women often uphold traditional roles [17].

According to Intel's (2013) "Women and the Web" report, women in India lack more in ICT awareness for some other emerging economies with 31 percent disinterested and 40 percent unable to recognize its need in their lives [18]. Besides, 48 percent of Indian women were reported to have expressed that they were not comfortable or familiar with digital technologies. The Intel report covers aspects of Indian women's ICT use that reflect the seriousness of the gender divide in the Indian context with calls for timely measures to contain any far-reaching consequences.

Initiatives such as the Digital India movement seek to bridge this divide, but the differences between present technologies and training and experiencing digital inclusion are sometimes vast. The use of Information Communication Technology by women is worth exploring owing to factors that are social as well as behavioral. Gender balance in ICT acceptance is not only a social equity issue. The underutilization of human capital will affect economic development as women are barred from contributing because of lower technology adoption [19]. An understanding of women's use and non-use of ICT can help in achieving higher Internet penetration and bridging the digital divide.

3. RESEARCH METHOD

This paper used a qualitative descriptive research approach through library research by collecting the data or scientific papers aimed at the research objectives [20]. In other words, library research is carried out to solve a problem that is based on the decisive and in-depth study of relevant library materials.

4. RESULTS AND DISCUSSION

4.1 Digital Literacy

4.1.1 The definition of digital literacy

In Latin, literacy describes a person's ability to process and understand the information in reading and writing. Literacy, as a foundation of human knowledge, continues to grow. Meanwhile, the word "digital" comes from English and in Greek, it is 'digitus,' which means 'fingers'. Thus, digital literacy refers to an individual's ability to find, evaluate, and compose clear information through writing and other mediums on various digital platforms. In other



words, it also described as the advances in computer technology and informatics today which are all-keypad-oriented or "press the button".

The idea of digital literacy was first introduced by in his book entitled Digital Literacy, which is the ability to understand and use information from various digital contexts effectively and efficiently, such as love, career, and everyday life [21]. Suggests that digital literacy is the ability to create and share in different modes and forms; to create, collaborate, and communicate more efficiently, as well as understanding how and when to use good digital technology to support the process [22]. Extend a new type of digital literacy that is based on computer and information literacy.

Computer literacy was developed in the 1980s when microcomputers were rapidly used, not only in the business environment but also in the community [23]. Meanwhile, information literacy was established in the 1990s, when the information was more easily compiled, accessed, and circulated through networked information technology. Digital literacy is one component of being a digital citizen - a person who is responsible for how they utilize technology to interact with the world around them. Digital technology allows people to interact and communicate with family and friends regularly due to the "busy constraints" of today's world.

Thus, it can be concluded that digital literacy is not only emphasizing the skills of operating and using various information and communication technology devices but also requiring the capability of individuals to "read" and "understand" the contents of the information presented as well as the process of "writing" and "giving birth" to a new age knowledge. At present, the prime challenges in the application of digital literacy in society include the ability of the community, especially women, in carrying out their roles, such as having the ability to look for, track, process, and assess information effectively and efficiently.

4.1.2 Important components in digital literacy

Digital literacy is an ability that must be acquired and mastered in the use of information communication technology. An article entitled Digital Literacies for Engagement in Emerging Online Cultures identified nine important components in the world of digital literacy [24]:-

- **Social networking** Social networking sites (SNS) are one example of social networking or online social life. The use of SNS services needs to be selective. The skills to utilize the features offered by each social networking site are varied. For this reason, it is necessary to know and master the basic functions of each feature. On the other hand, the ethics of using social networking sites did not go unnoticed. Digital literacy provides a way for good social networking.
- **Trans-literacy** is defined as the ability to use all different platforms, particularly to create content, collect, share, and communicate through various social media, discussion groups, smartphones, and various online services available.
- **Maintaining privacy** The most important component of digital literacy is about how to maintain privacy in the online world. Understanding all types of cybercrime, such as online theft through credit cards (carding), getting to know the characteristics of fake sites (phishing), fraud via email, and so forth. In social networking sites, displaying personal identity should be minimized to avoid something that is not wanted.
- **Managing identity** is related to how to use the right identity in diverse social networks and other platforms
- **Creating content** is related to the skills to build content in various online applications and platforms. Besides, it also includes the ability to use various e-learning platforms.
- **Organizing and sharing of content** signify content to be more easily disseminated. For example, the use of social bookmarking sites facilitates the dissemination of information that can be accessed by many users on the internet.
- **Reusing/repurposing content** is the ability to make content from various types of accessible information to produce new content that can be reused for various needs. For example, a teacher creates content about certain subjects with a creative



commons license. Then the content is uploaded on the Slide share website so that many will download it. It can be used by others who need it by carrying out the information or knowledge according to their needs.

- **Filtering and selecting content** is the ability to search, filter, and select information accurately following the desired needs, for example through various search engines on the internet.
- **Self-broadcasting** aims to share interesting ideas, personal experiences, and multimedia contents for example through blogs, forums or wikis. This is a form of sharing in online social society.

4.1.3. Digital Literacy competencies

In the age of digital technology that continues to develop so rapidly, the ability of digital literacy is important so that everyone can take advantage of the opportunities brought by these developments. Renee Hobbs in his report on Digital and Media Literacy: A Plan of Action outlines five competencies in digital literacy [25].

- **Access** (access), the ability of a person to find and use digital media skillfully and share information that is relevant to others
- **Analyze & evaluate** (analysis and evaluation), which means understanding the message and using decisive thinking to examine the message quality, truth, credibility, and point of view, then consider the potential effects or consequences of the message.
- **Create** (content creation), which includes writing or producing content using creativity and self-confidence to express themselves, supported by an awareness of the goals, readers, and composition techniques.
- **Reflect** which refers to the ability to reflect the social responsibility and moral principles on one's identity and life experience as well as communication behavior.
- **Act** (action), which means working individually and in groups to share knowledge and resolve problems in the family, work environment, and community and participate as members of the community at the local, regional, national and international levels.

4.1.4. The benefits of digital literacy

Ten benefits of digital literacy in an infographic entitled Top 10 Benefits of Digital Literacy, described by Brain Wright maps these benefits as, time-saving, faster learning, money-saving, ensure safety and security, updated information, connectedness, better decision-making, working motivation, happiness, and global influence [26].

4.1.5 Digital gender divide

Although the digital divide in the 1990s focused on first-order effects, namely the focus on accessibility to Information Communication Technology infrastructure, namely on ownership, availability, and affordability of ICTs, at present the digital divide problem is usually focused on the second-order effect which is related to the use of ICTs in daily life [27]. International Telecommunication Union has laid down the definition of the digital divide. The term came into use in the mid-1990s addressing the upsetting disparities in terms of access to information technology.

Originally coined in relating to computer access, the advent of technology has seen the term evolve about Internet access, broadband access, and more recently, access to the full spectrum of information and communication technologies. Peggy Parks in his book titled "The Digital Divide" suggested that the digital divide means the gap between individuals having internet access and those who do not [28]. Meanwhile, sociology professor Manuel Castells proposed that the digital divide is unequal access to the internet because it is a requirement to omit the difference among the people [29]. In short, the digital divide is the gap in accessing digital sources.

Szilárd Molnár in the article "The explanation frame of the digital divide" suggested three types of the digital divide; those are access divide, usage divide, and quality of use divide [30]. Access divide is the gap that is related to the rights of access to information and communication technology. The usage divide refers to the difference in the use of



information and communication technology. Meanwhile, the quality of use divide means the gap between the qualities in terms of the use of ICT. Among the causes of the gap is gender, where women have limited access to digital media platforms and fewer opportunities to join any social media community.

The worse there has been stereotyping built by women, such as techno-phobia, low excitement, and less competence of using technology [31]. A research conducted by Tracy Kennedy, Barry Wellman and Kristine Klement revealed several factors influencing the digital divide [32]. They included demography (age, gender, education, and income), geography, government policy, culture, and economic system. The present study emphasizes the digital divide between genders.

It is well evident in the amount of penetration and the number of internet users. In India, the number is dominated by males, with the percentage of 67%, while female users were only 33% [2]. A survey conducted by Accenture to supports the fact that digital fluency for females in India ranked the lowest among 20 countries of global internet users (India was the lowest in the survey) [33]. The following figure illustrates the relevant condition.

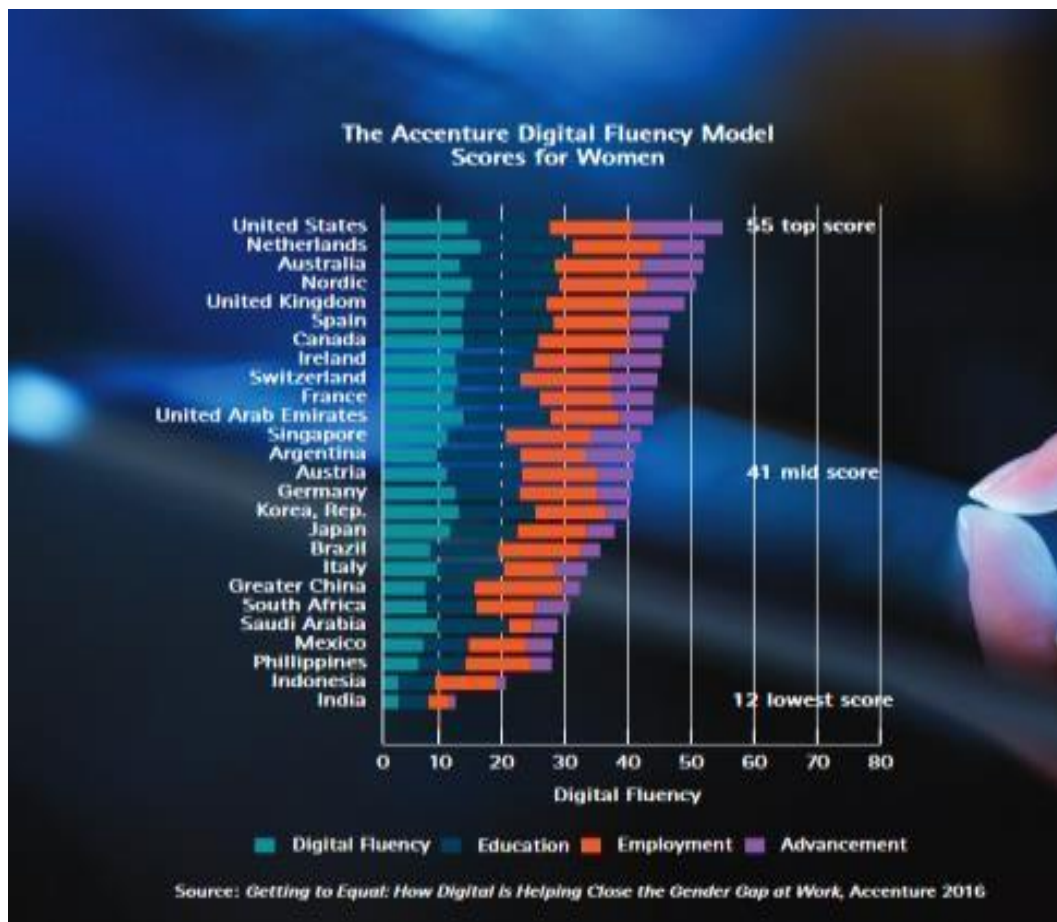


Fig. 1. Getting To Equal: How Digital Is Helping Close the Gender Divide at Work, Accenture

Source: <https://www.digitalnewsasia.com/digital-fluency-and-gender-gap>

We can see that the women's digital fluency is lowest in the list. According to Accenture, women are more excited about their social relations, rather than to their digital fluency. Mostly, Indian women use digital technology for social life, with as much as 60% for those aged 20-25 years old. The rest is for work (40%).

Meanwhile, women aged 26-35 years old use the internet for social life (70%) and work as well as education (30%). Fowlie and Biggs also explained that culture becomes a barrier for women to access the internet [34]. Besides, other barriers include education level, income, irrelevant content due to male domination, and security issues while going online.

Therefore, it can be concluded that women come across several barriers to accessing information communication technology:-

1. In general, geography impact and influences the access for women to information and technology. Women are more confined in terms of mobility in the conservative society, where religion and customs prohibit them from taking a trip in public without men.
2. Related to education, many women are uneducated due to minimal access to education and information, unequal training on ICT, limited time as well as economic and financial facilities.
3. The policymakers are less concerned with women's special needs for accessing and using ICT.
4. Most industries in ICT are male-dominated, which is obvious in their number occupying the executive or director positions.
5. In public space or social media, women are attached to negative stigma with image and stereotype, such as sexy, taking fewer efforts in removing them.
6. Cultural patriarchy has linked men with duties and functions outside the households, while women with anything at home, such as taking care of the children. It influences them in using ICT, a view that technology is part of men's obligation and is in the masculine domain.

At the same time, other countries, such as the US and Japan, hold the different perspectives of women. They are given equal rights to that of men in expressing their potentials. Therefore, women must have digital literacy, which may lead to progress in the nation's potential.

4.2 Women empowerment through digital literacy

The global advancement with the rapid progress of digital technology requires women to take part in it. Several steps have been taken to encourage the digital literacy of society. One of the ways is to involve women in the Digital India movement because the use of technology is not only to gain information but also to improve their quality of life. Indian women use technology for their children's learning and their family, business and works. According to Kim Andreasson, women can use the internet to help them in increasing productivity, facilitate access to the new market, improve education, open better job opportunities, as well as contribute to the economic aspect [35].

The Internet has given so many benefits to users, including women. Hence, the digital gender divide should be removed. The condition can be improved by connecting through education to digital literacy and women empowerment. Women empowerment through digital literacy should pay attention to several aspects. First, access to digital information and an individual's capabilities can be used to build up their social life. Second, they should find their inspiration to use technology. The third is related to an individual's social ability, where women are required to use the media pro-actively and confidently.

Women empowerment in digital media is well anticipated to increase their capabilities to participate in social development, to open job opportunities in entrepreneurship, and to change the roles and functions of women in the organization. Digital literacy is the ability of an individual in accessing digital media in five aspects; those are accessed, analyze and evaluate, create, reflect, and act.



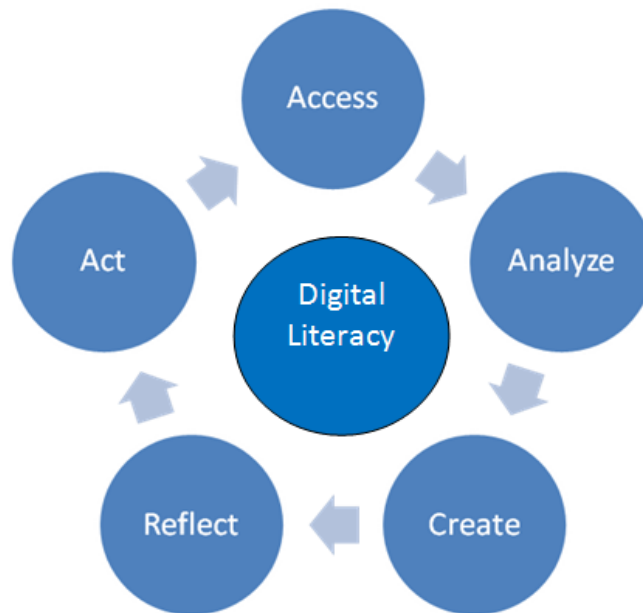


Fig. 2. Five Competence of Digital Literacy: Access, Analyze, Create, Reflect and Act

The first competence includes women's skills in accessing the computer and the software as information sources. In this, women should also master the jargon used by each device. In taking the benefits of the internet instrument, the skills also cover the ways to navigate themselves in surfing the online information. The information should be relevant to the method to take notes to make visual organization, such as charts, graphs, diagrams, summary, and so on. If they should share the information with others, they should think first about the truthfulness and the advantages.

Second, analyze means the ability that begins with interpreting the data in the forms of text, illustrations, voice, and the combination of those. The higher the capability in interpreting the information, the more benefits they gain. Besides, the evaluation skills will lead women to think critically, to sort relevant and trusted information. People are exposed to abundant information; in that, they do not know whether they are eligible to access the information or not. The ability will help to select appropriate information. Besides, if people want to share the information with others in social networking, they will be able to consider the effect and consequence of the information.

The third competence, create, expects women to write and arrange the information logically, thus creating quality and ethical products. In creating the content, the product is directed to the one beneficial; thereby preventing the creator from producing "electronic trash". Forth competence, reflect, is women's ability to write accountable information for the people, to hold the ethics in communication behavior, and to understand the rules in using digital media. Various regulations established by the government are used to protect the users and are expected to prevent less ethical behaviors. Besides, women are suggested not to reveal their identity or their families in social networking.

The fifth aspect is act, which means a woman's ability to use digital media to help them to solve any problem. Digital media can help women to overcome family problems through the information offered in it. In a working environment, it helps them to achieve and improve their performance. Meanwhile, in the society, women are expected to participate as a good citizen. The success of digital literacy for women can be achieved if competent parties, such as government and educational institutions, support them. Women can attend the training program using digital media offered by the government or other institutions. Digitally literate women can improve the welfare of the people in general, the Indian in particular.

5. CONCLUSION

The advance of digital technology has undergone rapid progress in India. The activities of using digital information do not only serve to support daily activities but also functions to



create basic changes in all aspects of life. The condition requires people be to gain literacy, skills, or abilities in using and utilizing digital media. However, in India, the utilization of digital technology is still dominated by men; thereby creating a digital divide. The digital divide means inequality in terms of access to computers and the internet between the groups that are based on one or more identification of social and cultural. The example is the one related to gender.

The gap is due to several factors, such as geography, educational level, and government policy, economic and cultural system. With over 500 million internet users, India has the world's second-largest online population. However, only 30 percent of India's online users are women, considerably less than other developing countries such as China and Indonesia, which have greater than 40 percent, female internet users. In India's rural areas, the proportion of female internet users drops to 12 percent. Considering the significance of the issue, it is necessary to make an effort to ensure the women's position in India to participate in the digital era. Digital literacy is one of the ways to bridge the divide.

Women are required to have five competencies in digital literacy: access, analyze, create, reflect, and act. There is no reason for women to lagging behind in the digital transformation. Bridging the gender divide in the digital age, can provide new sources of economic growth, support the implementation of the 2030 Agenda for Sustainable Development and help to achieve strong, sustainable and inclusive growth.

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