Gender Digital Divide – Examining the Reality

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Abstract: In this age of digital revolution, one of the most significant inequalities that prevail across all social and economic groups is the gender divide. The limitation, obstacle and challenges faced by the women across the globe prevent them to access and use the information technology. There is an under-representation of women in the decision-making structures in the digital information society, where they are considered as technophobic, wherein the plans and policies were gender-sensitive. The constraining elements in relation to women's usage of technology lie in the socio-economic and cultural barriers laid down by society. Gender bias-ness exists in the attitude of using information technology. The cultural norms forbid women's interaction with the outside society which restricts them from the usage of ICT. In addition, the disparity in the education and income sectors, social class and geographic locations cast a shadow in the usage of the ICT. But a contradictory situation exists in the present postmodern society, where women are gaining education and income opportunity, where ICT as a digital tool has enabled them to overcome this long-lasting inequality, contribute in the community building and decision-making process. It has provided them with the freedom of interaction and shares their opinions and gathers information across the information society. But the United Nation World Summit on the Information Society (2003-2005, 2017) highlighted that gender digital divide still persist in the society. Like so, the question remains whether the gender digital divide is hype or reality? So, this paper will try to examine the gender divide existing in this digital information society.

Keywords: Digital revolution, Gender divide, Inequalities, Information society.

I. INTRODUCTION

Digital divide [1]or digital split [2] or information poverty[3], [4], in this postmodern society becomes a significant social issue prevailing across all the sections of the society, which highlights lack of knowledge of using and level of accessibility to Information and Communication Technology (ICT) [3], [5]-[8]. In this notion of the digital divide, one of the most significant virtual inequalities [7], [9] that prevail across all social and economic groups is the gender divide. In this era when the world is "wired-up" into its digital framework [10], women are lagging behind to imbibe the benefits of digital connectivity [11]. Gender digital divide i.e., the lack of access to and use of ICTs among women and girls is a significant concern across the nations. Internet which was considered as "genderless" [12], [13] is depicting an opposite picture of reality where women users are less than twice that of men across several countries like Sub-Saharan Africa[14] India and Egypt to name few[15].

In spite of a sustainable increase in digital access a full transformation to a digital society is lacking mainly because the digital community is unable to overcome gender inequality, thus affecting overall social development [16]. Barriers in the usage of internet by men and women vary greatly according to geography, social constraints, and cultural behaviour and across countries[17]. The appealing power of the ICTs varies across gender groups, as revealed by several scholars, that computers are more accepted among male groups [18]-[21] and cumulatively technology is more associated with the masculine community [20],[22], [23]. In the developing countries primarily, the constraining socio-cultural norms and economic backwardness resulted in the lack of education to women and more dependence on familial and household activities [24]. Like so, it is evident that this gender digital gap is more of a by-product of socio-economic and cultural factors rather gender itself. Hence, this gap will minimize with better access to educational facilities and economic standards [20]. So, it becomes necessary to investigate the existing gender digital gap in this digital society with highlighting the barriers, unveiling the theories behind gaps, the variation of gaps across countries and possible measures of diminishing the digital gender gap.

II. THEORIES INFLUENCING THE GENDER DIGITAL DIVIDE

The literary works on gender and IT have pointed out three dominant theoretical viewpoints highlighting the significant factors dominating the gender digital divide: essentialism, social construction and individual differences[25]. The essentialist perspective reflects the observable behavioural attributes of men and women that exist as an outcome of bio-psychological characteristics. It throws light on the positivist epistemology which considered gender as a fixed variable [25],[26]. As revealed by several scholars that gender affects the decision of using technology, like males are influenced by its usefulness while females are influenced by social factors [27], [28]. This theory laid stress on the notion "separate but equal" wherein the gender imbalance can be addressed via policy implementation focusing on the adaptation of different approaches in training men and women, and encouraging women in IT sector work-scapes[25], [27]. While the social construction theory focuses on societal aspects rather than on biological angle[25], [29]. This view portrays hegemonic masculinity role in technology which mainly focuses on the explanation that technology belongs to men and it falls outside the paradigm of a female. This causes under-representation of women in the technological sectors to be it

education or employment[30]. So, reconstruction of gender identity becomes important wherein an improvement in terms of social identity is required along with better implications of women's relationship in workplace technologies. The last most import theory rests on the individual role of the women in the technological domain, i.e., how women as an individual confronted with the challenges and issues in the field of information technology[25], [31]. It is basically a combination of both essentialism and social construction theories but laying major stress on the social shaping governing women's individual behaviour. Hence, it is a product of gender and socialization with cultures. So, understanding the different dimensions of gender gap via a theoretical framework will aid in gaining awareness and developing proactive responses and policies by governments and information technology institutions, henceforth improving gender identity issues and narrowing down gender digital divide.

III. BARRIERS LEADING TO GENDER DIGITAL GAP

Women are underrepresented in comparison to men when considered from the perspective of technology usage [32], [33]. American Association of University Women (AAUW) has proved via their study in 2000 that female enrollment with postgraduate technology field are less [34], [35] in fact they take few technology classes in high school also [33] and thus, are the left out wing of the technological revolution. According to Gill et al. there are four barriers which push women backwards in internet access and usage; exclusion from technology education, free time limitation, socio-cultural norms favouring men and financial and institutional barriers [36]. In addition to these, the geographical isolation, physical inaccessibility and poor technological infrastructures hinder women's access to ICT in public and at home. Among all the barriers, the major role is played by the education gap; the low literacy rate, poor educational system and less attribution of parent and teacher create an obstacle for women in accessing technological knowledge. This gap is more in developing countries which account for 11% when compared between men-women (75% of women are literate compared to 85% men) and in respect to India only 51% of women can read and write while in Africa 54% of the girls haven't completed even their primary education [37], thus are left behind in reaping benefits of Internet. Likewise this gap is also relevant from rural-urban divide perspective as well. The physical infrastructures seem to have mainly concentrated in the urban area while the rural women are far from getting benefits or even access to these infrastructural facilities [38], [39]. In low and middle-income countries the rural-urban digital divide is more when compared to high-income countries. ITU dataset revealed that only 16 out of 69 countries uses the Internet with respect to rural-urban internet usage. And women belonging to this low and middle-income rural and urban areas are less likely to use the Internet as highlighted in the survey by Web foundation's on Women's Rights Online.

Socio-cultural norms act as the main constraint in women's accessing education which in turn hinders their ICT usage. The socio-cultural norms give less priority to girls' education and the stereotype believes that girls' duties are more towards familial and household courses bind them [24]. A strong hegemonic form of masculinity is still pervasive in this contemporary society which is associated with male dominance of technical power [40]. In mainly developing and under-developed countries socio-cultural gender stereotype prevails from a young age, there always exist a difference between girls and boys, therein the girls imbibe fear for technology and develop computer anxiety. From the social context, the schools and colleges conducting mixed gender classes are too seem to be male-dominated. The attribution of parents and teachers attribute to different role models to women leading to extreme gender segregation and accounting for less presence of girls in the technology society [41]. This resulted in the negative attitude of women towards technology and again leads to computer anxiety and in turn causes poorer performance in technical domain [42] (Fig 1).
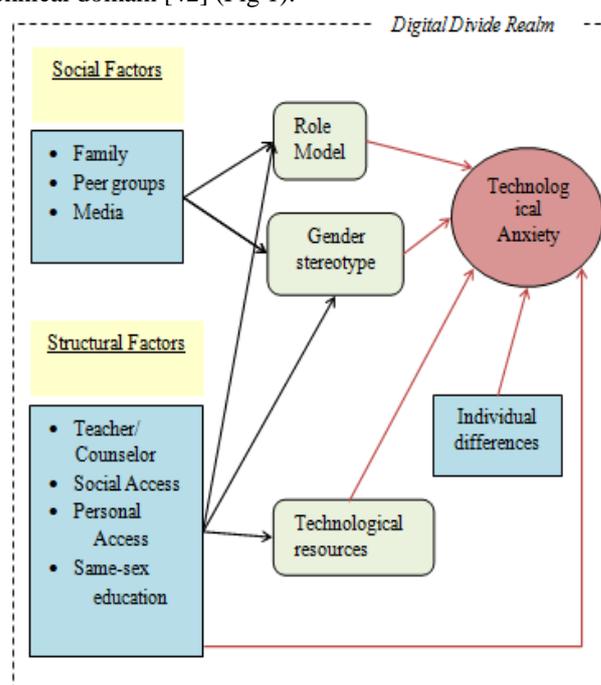

Fig 1: Factors leading to gender digital divide.

Among the other barriers safety concern of women and lack of freedom of movement forbid women from the use of ICTs and the Internet [17]. Women under-estimate their skills lead to lower self-potency to use ICT [42] and their general attitude toward computers [43] [45].They tend to get trapped in the traditional family role. The lack of digital literacy and skills forbid them to achieve their true potential and thus, in-confidence develops which leads to limited use of the internet and further limits their usage to fewer applications[15], [46], [47].

Hence, for the full transformation of contemporary society into digital society there is a need to overcome the gender gap, which will lead to overall social development. As, ICT if assimilated into all the members of the digital community, will provide power to women in social, economic and political arenas and will increase women's

participation level as well. Like so, Irina Bokova, Director-General of UNESCO suggested that mobile will become a tool which can enhance women's lives in every section of the community irrespective of income, will help to develop a sense of safety, increasing connectivity and encouraging employment opportunities.

IV. GENDER DIGITAL DIVIDE ACROSS VARIOUS COUNTRIES RESULTS

The access and usage of ICTs help in improving the well-being via multiple aspects[48]-[50]. ICTs' usages vary across different aspects like social life, economic and political dimensions, educational and employment perspectives as well as through gender, age and ethnicity and geographically [51]-[55]. It aids in diminishing gender gap thereby ensuring overall socio-cultural, economic and political development of the country. So, it becomes essential to analyze and examine the existing digital divide and gender identity across different countries.

The recent studies made by ITU reveal that the global gender gap of internet access and usage increase from 11% in 2013 to 12% in 2016. The gap enlarges in the Least Developed Countries (LDCs) accounting for 31%, whereas, regionally Africa exhibits the largest gender gaps (23%) while it is the smallest in America (2%). The Mobile Gender Gap Report 2019 reveals that still now women are 10% less likely than men to own a mobile, i.e., 197 million fewer women own a mobile than men. And with respect to the internet usage women are 23% less likely than men to use internet while availing only a small range of mobile services benefits. Among all South-Asia occupies the lowest position highlighting high gender gap figures followed by Sub-Saharan Africa (Table I, II). But in spite of such figures, since 2014, overall there are 250 million increases of women in mobile ownership in low and middle-income countries. So, cumulatively the following tables will highlight the backward regions in respect to gender inequality and the digital divide. Table I and II throw light on the gender gap in respect to mobile ownership and mobile internet usage across low-and middle-income countries, whereas, Table III reveals the countries within Africa, Asia and Latin America showing higher gender gap.

In reference to India in particular, only 29% of all internet users are female, as reported by UNICEF in 2017. The case is extreme at village levels where Panchayat have imposed bans on the use of mobile phones and social media by girls, especially unmarried girls, like in Rajasthan, Uttar Pradesh, Haryana and Bihar[56]. Though states like Maharashtra, Karnataka, Tamil Nadu and Andhra Pradesh occupies better position in terms of gender digital inclusion, yet within states urban-rural digital disparity level can be observed [57]. In urban India, 38% women use mobile internet compared to 62% men while in rural India, 12% women are mobile internet users compared to 88% men [58].

Table-I: Gender gap in mobile ownership in low-and middle-income countries

Regions	Mobile ownership rate of women (%)	Gender Gap in mobile ownership (%)	Women unconnected (Million)
Middle East & Africa	80	9	25
Europe & central Asia	90	-2	17
East Asia & Pacific	93	1	54
South Asia	62	28	219
Sub-Saharan Africa	69	15	86
Latin America & Caribbean	86	1	31

Source: GSMA intelligence, 2018

Table-II: Gender gap in mobile internet usage in low- and middle-income countries

Regions	Proportion of women who use internet (%)	Gender gap in mobile internet use (%)	Women not using internet (million)
Middle East & Africa	44	20	69
Europe & central Asia	60	4	68
East Asia & Pacific	64	4	284
South Asia	27	58	426
Sub-Saharan Africa	29	41	200
Latin America & Caribbean	66	2	76

Source: GSMA intelligence, 2018

Table-III: Backward countries in respect to gender gap.

	Mobile ownership by women (%)	Mobile internet use by women (%)
Africa		
Mozambique	24	59
Tanzania	11	52
Cote d'Ivoire	9	47
Asia		
Pakistan	37	71
Bangladesh	33	58
India	26	56
Latin America		
Guatemala	13	20
Dominican Republic	4	-3

Source: GSMA intelligence, 2018

V. MEASURE TO BRIDGE THE GENDER DIGITAL GAP

In the path of achieving gender equality in the digital domain, the most important task is to address the issues caused by barriers hindering the access and use of ICTs by women. The main measures as laid down by the Web Foundation is that the policymakers should REACT on improving gender digital divide, which consists of Rights, education, Access, Content, and Targets [59] (World Wide Web Foundation, 2017):

• React: It aims on protecting and enhancing everyone's rights online. The web which serves as an empowering tool should focus on protecting the privacy and providing safe space for women. Thereby addressing and upholding digital rights online for women.

• Education: It empowers women and girls with the skills needed to grasps the internet and its usage effectively. Thus, the policy should focus on skill training among women in different age groups, wherein digital skill development should be encouraged from primary and secondary school level and should also enable equal access in tertiary education. Education will help women and girls to fight the technophobia and gender stereotype preventing them from the use of the internet and technology.

• Access: It is affected by the affordability barrier. The studies have proved that women are likely to earn less than that of men; hence, there exists a gender wage gap around the world which limits women usage of technology. Public access programs should be encouraged providing free and less cost communication data which could increase the accessibility of women to the internet.

• Content: In order to make the content of ICT worldwide and its usage across different sections of the society, the policymakers should focus on ensuring relevant content available in local languages. This has already being implemented. This has helped to reach and is useful by local communities across the world. The data should provide information affecting women like violence against women, women's legal rights, land ownership, child custody, which will encourage women's participation in the digital economy.

• Targets: It implies measurable and time-bound targets such as data collection done for policy analysis over a regular specific period of time. But none of the countries has included targets for women and girls hindering the monitoring progress made by the government in bridging the digital gender divide.

In addition, in the policy formulation process the women's participation is a must which will help to provide a gender perspective to policy-making process, thereby increasing women's participation as well as in bridging the gender digital gap to an extent.

VI. CONCLUSION

ICTs cannot be considered as genderless because of the persistent gender digital inequality prevailing in the society causing a substantial disparity in relation to access and use of ICT and the presence of women in the digital economy arena. So, women's participation is necessary in the digital policy-making process, thereby ensuring gender perspectives in the policy formulation process. ICT literacy and training, removal of legal and social barriers will increase women's role in ICT. Gender budgeting should be done with gender perspective allocation of funds which could encourage women to use the internet. Women and girls should be encouraged for higher education and policy should be gender oriented in incorporating women role in information technology jobs. Though the literacy level and income level of women is increasing, the socio-cultural barriers and institutional factors are preventing female from acquiring technical knowledge and digital literacy mainly in developing countries, which is highly witnessed in South Asia and Sub-Saharan Africa; particularly in India a wide rural-urban gender digital divide can be witnessed. So, universal access strategy should be encouraged by the government in facilitating the access and use of the internet. Bridging the gender gap will ensure empowerment to women and girls in using online technology, and thus will prevent gender biased violence and break the stereotyped nature of the communities. As has been stated by CheptooKositany-Buckner, The Deputy Director of Strategic Initiatives at the Kansas City Public Library, regarding the prevailing gender digital divide,

"It's no longer a luxury. This is serious. It's really a social justice issue. It's a 21st century civil rights issue.".

VII. REFERENCES

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