

Gender Gaps in Mobile Penetration in India

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ABSTRACT

India has now emerged as the second largest mobile phone market in the world. However there is a wide variation in mobile phone penetration between men and women across the different states of India, bringing in questions of socio-economic disparities and the role of technology diffusion in bringing the convergence of growth process. A set of factors like education, income, social norms, gender continue to constraint mobile phone ownership. These factors are inadvertently widening the digital divide and the benefits of increased mobile penetration are failing to reach to an important segment of the society, leaving them further behind. In this study an attempt has been made to point out the gender differences in mobile phone penetration in India and tried to find out the crucial barriers that are responsible for the present scenario.

Keywords: Mobile Penetration, Gender Gap, Barriers to Mobile Ownership.

I. INTRODUCTION

Mobile phone is one of the most important information and communication technologies (ICTs) that have penetrated rapidly both in developed and developing countries. It has become an indispensable powerful tool for accessing life-enhancing opportunities and services which was previously untouched by the millions of underprivileged masses. As per GSMA Intelligence report 2020, there are 5.2 billion unique mobile phone users in the world. It is possible to access the transformative services and opportunities like internet through mobile phones that provides a wide variety of benefits, improving the economic and social outcomes for users. It helps producers and

consumers access the best value for their products and connect workers to job opportunities and labour market.

Women are also increasingly utilizing the advantage of mobile penetration^{***}. Ownership^{*} of mobile phone has the capacity to address many of the barriers that women face. It has the potential to solve the problems related to mobility, safety, time and privacy, so far as women are concerned. With mobile phones poor women can access important information and much needed financial services to meet household needs and economic activities. In societies where women mobility is restricted, access to mobile phones can engage them in formal activities by enabling them to make mobile money payments without traveling long distance to bank branches. With safety and security they can have greater control over their money. Yet in India, only 33 per cent of women have mobile phone access as compared to 67 percent to men. If mobile technologies are crucial in promoting government's "Digital India" campaign, then there is a risk that gender gaps in mobile phone ownership will intensify foregoing gender gaps in other areas that will obstruct economic growth. Conversely, narrowing the gender gap in mobile technology can accelerate the economic growth by connecting women to information, jobs and improving their well-being. According to USAID^[1], "increase of 10 per cent in mobile penetration can raise the annual GDP growth rate by as much as 1.2 per cent in a developing country; 93 per cent of female mobile phone users feel safer with a phone; 85 per cent feel more independent; 41 per cent use their phones to

increase their income and professional opportunities”.

II. LITERATURE REVIEW

There is ample evidence from developing countries of Asia and Africa that mobile phone access has an important role in reducing transaction cost of doing business and increased coordination among producers, thereby improving the livelihood of the common people. It has been also found that mobile phone has a positive impact on gross domestic product and productivity. Jensen ^[2] found that due to mobile phone use the standard deviation of prices in the fish market in Kerala decreased. Increased mobile adoption also supported financial inclusion in Kenya through M-pesa and the production of perishable crops in Uganda ^[3]. Mobile communication diffusion significantly affects both GDP growth and productivity growth ^[4].

At the global level women have a much lower access to mobile phone than men. The difference is particularly marked in south Asia ^[5]. The main barriers to access the mobile phone can be divided into two categories: physical barriers and socio-cultural barriers. Physical barriers include cost of handset/SIM, top up credit, ability to recharge the handset, to operate the handset and both literacy and digital literacy. Social barriers include women's safety and security, belief that women do not need phone, family belief that women's mobile phone use will bring shame to the family etc. ^[6].

Traditional Indian society is patriarchal in nature and many strong social norms could present some normative barriers women's and girls' mobile phone access. Some of these include maintaining purity for marriage, patrilocal exogamy, subservience and utmost priority to care-giving ^[7]. Handset costs, poor network coverage and quality, poor technical literacy and confidence are some of the barriers that differentially affect women more than men ^[7]. Using the NSS data of 2012, a study

made by Paul and Murty ^[8] showed that different socio-economic factors like religion, caste, age, literacy, rural-urban and internet use significantly influence the mobile phone ownership at the household level in India. Women generally share a 'Household phone' in which men have the primary ownership and use ^[5] ^[7]. Even when women have phones, they lag behind men in accessing more advanced features due to their limited access and limited ability ^[9]. Younger women (15-34 years) have a higher ownership of mobile phone than older women (35 years and above). In East Asia and the Pacific region, 94 percent of younger women own a mobile phone, which is 10 percentages higher than the older women ^[10]. According to O'Neill ^[11], Handset cost and poor infrastructures are the two significant barriers to mobile phone ownership in India. Again reliability of network in rural areas is another obstacle to mobile phone penetration ^[12]. ^[13] argued that lack of technical support and operator knowledge remained a challenge in ICT adoption in India. Women in India are subject to large scale constraint to physical mobility and needs permission to go outside alone. So they cannot travel outside for a better network coverage if network at home is unreliable. This type of social constraint hinders their access to mobile phones by limiting their access to good network quality ^[14].

III. Objectives of the study: The basic objectives of the paper are:

- i) To review the present status of mobile phone access in India.
- ii) To examine the important benefits of increased mobile adoption in India.
- iii) To identify the important barriers to owning a mobile phone from a gender perspectives.

IV. METHODOLOGY

The present study is a descriptive and analytical research work. Secondary data has been utilized for the analysis. Research articles from different reputed

journals, websites and magazines have been used.

V. Benefits of Increased Mobile Penetration

The primary function of a mobile phone is to facilitate communication between people. It also provides a platform for other innovations that directly impact the functioning of the economic activities. People of less developed countries are now have an access to online information via mobile devices and are therefore able to join a global conversation. This greatly helps to reduce digital divide across nations. There are numerous research articles that concluded mobile technology has significant contribution to economic globalization and growth. [15] estimated that 10 more mobile phones per 100 people would increase GDP growth per capita by 0.6 per cent point and the figure rises between 0.8 to 1.2 percentage points for considering developing countries separately. Based on a panel data of 96 developed and developing countries GSMA [16] report showed that for a given level of mobile penetration a 10 per cent substitution from 2G to 3G mobile penetration increases GDP per capita growth by 0.15 per cent points. The major benefits that can be obtained from mobile adoption can be grouped under the following heads:

- (a) **Improved Market coordination:** The most significant benefit of mobile phone is the improved communication between market players that contributes to more efficient markets. In their work [17] showed how mobile phones can increase firm size and reduce productivity dispersion within a country. It also helps businesses to save money in many areas where expenses is now no longer necessary. For example, mobile-supported video conferencing can transmit both voice and data from worksites to any place within moments. This substantially decreases the need for
- executives to physically travel the market places.
- (b) **Low entry barriers:** Another important benefit of mobile adoption is the lower barriers to entry into new businesses via 'app economy'. Entrepreneurial individuals can earn new ideas, technical know-how and credit related information from the digital platforms designed for software solution to a truly global market. This has greatly helped small entrepreneurs to build their own capacity without having massive manufacturing capacity or labour force. All types of businesses are currently utilizing mobile technologies to improve operations, cut costs and are reaching to new markets and customers.
- (c) **Better utilization of excess capacity:** Smart phones have facilitated the development of app based platforms that has greatly reduced the excess capacity of the economy. One perfect example of it is the ridesharing app (Uber, Ola etc.). Car owners are now able to utilize their cars which otherwise would remain idle. Riders also experience lower cost with getting a ride without wasting time.
- (d) **Creating new jobs:** The mobile internet also acted as a job-growth engine. Manufacturing of mobile devices, network and infrastructure installation, and maintenance, retailing and services related to mobile operating system and enablement platforms are generating both skilled and semi-skilled jobs within both developed and developing countries. With the advent of new apps that has automated and enhanced existing activities in the healthcare and education sector is creating high level of technical skills and creativity and are absorbing huge workforce.
- (e) **Mobile banking services:** With mobile money, the users can deposit, transfer

and withdraw money without a physical visit to a bank branch. This has improved social insurance by reducing the transaction costs of transferring money. Again government, NGOs and the private sector have been utilizing this platform for quick transfer to the targeted group with reduced corruption.

VI. Gender Gaps in Mobile Phone Access

Despite growing importance of mobile phone, there is considerable gender gap in mobile phone use among the different regions of the world. From fig. 1

we see that the trend remains almost same over the last three years. Among the different regions, South Asia and the Sub-Saharan Africa has the largest gender gap, while in Latin America, Europe and Central Asia and East Asia and Pacific regions have the smallest gender gap. Europe and the Central Asia is the only region where gender gap is negative. Though South Asia has made considerable improvement in closing the gender gap during this period, growth in mobile ownership among women has slowed considerably.

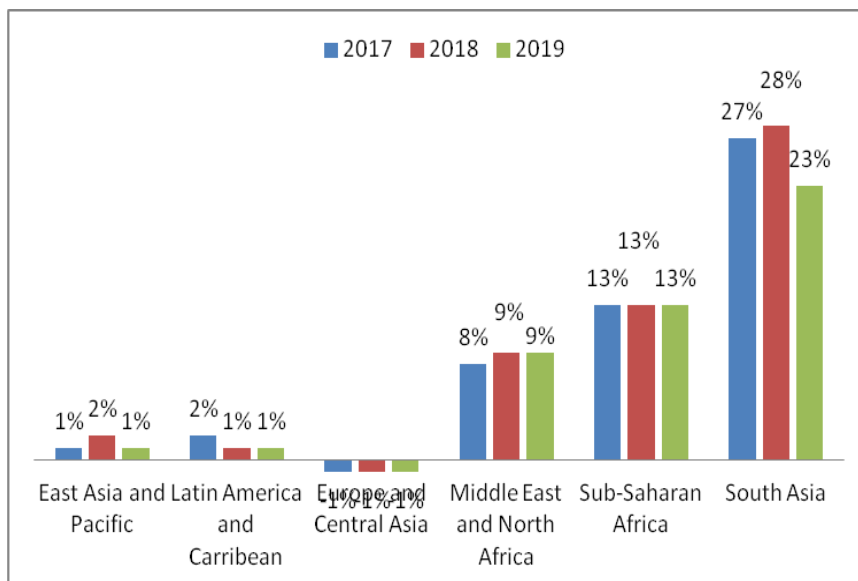


Figure 1: Regional Gender Gaps in Mobile Ownership 2017-2019
Source: GSMA Intelligence, 2019

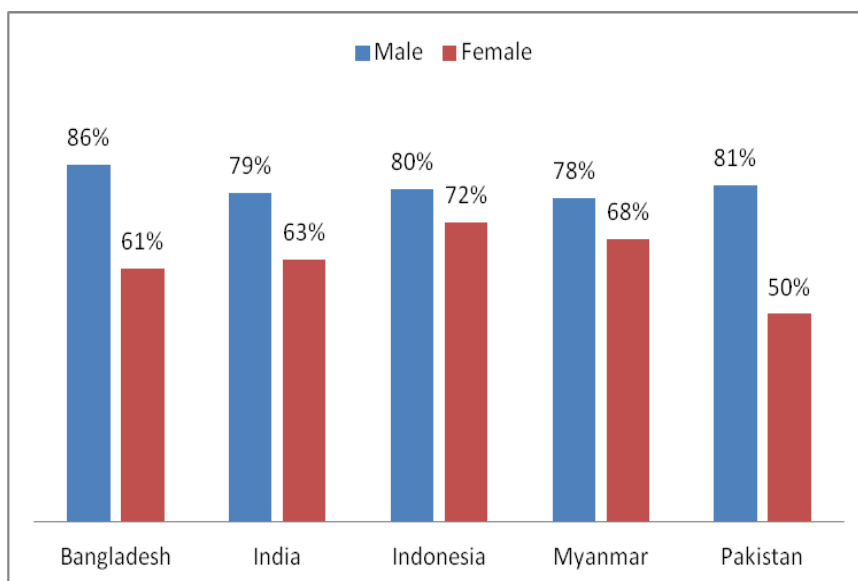


Figure 2: Male and Female mobile ownership in some Asian countries
Source: GSMA Intelligence, 2019

When we come to the country level study, we find that there is significant variation in the magnitude of the gender gap in mobile ownership. Within the five South Asian countries in fig. 2, Indonesia has the smallest gender gap in mobile ownership and Pakistan has the highest gap. In India there is considerable gender gap^{**} (20 per cent) in mobile ownership with only 63 per cent of women owning a mobile phone as compared to 79 per cent of men.

In India women are significantly less likely than men to own a smart phone.

There exists 62 percent^{**} gender gap in smart phone ownership while in case of basic phone ownership the gender gap is negative (fig. 3). In case of feature phone also women lag behind men by 33 percentage point, indicating a sign of women's lack of financial autonomy in this crucial area. Also lower level of technical literacy and general literacy of women acts as a critical barrier in the use of smart phones.

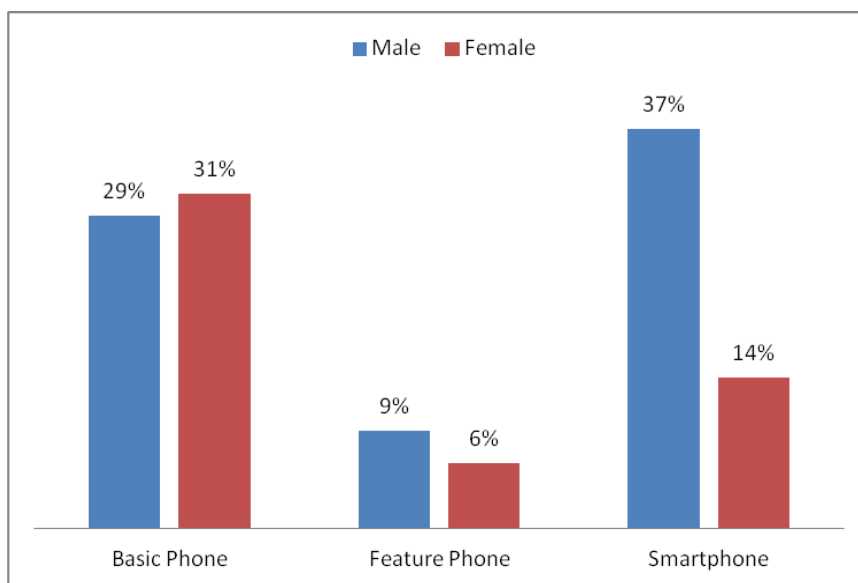


Figure 3: Gender-wise different type of handset owned in India

Source: Source: GSMA Intelligence, 2019

Figures represent percentage of total population aged above 18.

phones by women in India include economic, socio-cultural and other aspects.

VII. Important Barriers to Owning a Mobile Phone in India

Though mobile phone ownership and access has been rising steadily in India in recent times, there is a significant gender gap in this aspect. According to GSMA^[19] report, gender gap in mobile phone ownership in India is 26 per cent while the corresponding gap in mobile internet use was 56 per cent in 2018. Women generally have shared access to a phone or a phone with fewer features. Women's mobile phone use is restricted in relation to: where they use the phone, for what purposes and for how long. The barriers to using mobile

Table 1: Important barriers to mobile ownership in India

		Men	Women
Affordability	Handset/SIM cost	31	42
	Credit Cost	17	12
Literacy and Skills	Do not know how to use a mobile phone	11	16
	Reading/Writing difficulties	18	24
Relevance	Mobile is not relevant for me	14	17
Safety and security	Personal safety	11	5
	Strangers contacting me	12	7
	Information security	11	6
Accessibility	Battery charging	7	7
	Network Coverage	16	8
	Family does not approve	3	9
	Access to agent support	9	5
	ID	1	4

Figures represent percentage of non-mobile owners who responded (aged 18+)

Source: GSMA Intelligence Consume Survey, 2019.

Awareness of mobile phone use is increasing more quickly than adoption. It indicates that those who are aware of the matter, other factors are obstructing them from adopting the service. These factors can be grouped into some broad categories: affordability, literacy and skills, relevance, safety and security and accessibility.

Affordability: The cost and affordability of handset and network is a top priority for poor and low-income women for extending mobile penetration in India. From table 1 we find that 48 per cent men cannot afford to mobile ownership due to handset and credit cost while the corresponding figure for women is 54 per cent. Within affordability, handset/SIM cost appears to be the largest barrier to both men and women (31 per cent and 42 per cent respectively). This affordability constraint is again a product of the gender norms. Since in traditional Indian family, women are looked upon as caretakers of the family members, they are forced to sharing their earning and savings with their in-laws. This makes them to be more financially constrained than men. Again women in India face constraint occupational choice due to strong social norms. That also limits their financial resources.

Literacy and digital skills: Another well-cited barrier is the lack of general literacy and technological skills in the adoption of mobile phones by both men and women. 18 per cent of men and 24 per cent of women have reading or writing difficulties. As its consequence women feel more uncomfortable than men in using mobile technology. Again, full potential of mobile phones has not been utilized due to illiteracy. Social norms that assign woman's role as caregiver of the household also prevent women to acquire technology-related skills. In this way social norms also restrict women's human capital development which is necessary to operate a mobile phone.

Relevance: Lack of basic infrastructure requirements like limited interoperability, low network coverage and quality can also impede mobile penetration in India. In India 17 per cent women think that mobile is not relevant to them, while 14 per cent men think so.

Safety and Security: It is the third most important barrier to mobile adoption in India. It is important for both men and women where 34 per cent men reported safety and security related issues compared to 18 per cent of women.

Accessibility: There are several accessibility related barriers that are important in India, covering a disparate range of topics. Poor network coverage emerged as a notable obstacle to mobile phone access particularly for men (16 per cent). Again, disapproval by family members remains a top barrier for women (9 per cent as compared to 3 per cent for men). This emerged as an important factor grounded in conservative social norms that restrict women's choices and behavior. Identity barrier also appears as an important factor for women (4 per cent) as compared to men.

Table 2: Top barrier to mobile ownership in India

		Men	Women
Affordability	Handset/SIM cost	23	34
	Credit Cost	10	5
Literacy and Skills	Do not know how to use a mobile phone	7	9
	Reading/Writing difficulties	11	16
Relevance	Mobile is not relevant for me	10	11
Safety and security	Personal safety	4	2
	Strangers contacting me	5	3
	Information security	3	3
Accessibility	Battery charging	4	3
	Network Coverage	12	6
	Family does not approve	2	3
	Access to agent support	4	2
	ID	0	0

Figures represent percentage of non-mobile owners who responded (aged 18+)

Source: GSMA Intelligence Consume Survey, 2019.

Among the different barriers to mobile phone adoption in India, handset cost is the most important for both men and women. In many cases, men and women are

aware of mobile phone use, but have not used it, cited affordability as the top most barriers to adoption. General literacy appears as the second most barriers for both men and women. Lack of knowledge about how to use mobile phone emerged another important obstacle to mobile penetration in India.

VIII. CONCLUSION

Mobile phone access becomes a gateway to global information, government services and new economic opportunities. Mobile ownership enables women to feel safer, more informed in their work, education and in other areas. Unfortunately, in term of phone ownership and use, women lag far behind men. If this inclination continues then the existing gender gap in different sphere will continue and mobile phone may only intensify existing gaps which goes against the UN Sustainable Development Goals (SDGs) that promotes equal social and economic participation for women and ensure gender equality. When 5G becomes a reality, it is not enough to increase women's mobile phone ownership; it is equally important that women have access and knowledge and keeping pace with new technology. There is no standardized solution; rather a multifaceted approach will be needed to change the scenario. The concerted efforts of mobile network operators, policymakers and regulators will be most effective if they are coordinated and grounded in an appreciation of the country level barriers to women mobile phone ownership. Other structural barriers and inequalities including disparities in income and education as well as retarding social norms should also be eliminated to achieve the desired goal.

Notes: *Mobile owner refers to a person who has sole or main use of a SIM card or a mobile phone that does not require a SIM, and uses it at least once a month.

**Gender gap in mobile ownership is defined as

Gender gap (%) = (Male owners (%) – Female owners (%))/Male owners (%)

***Mobile penetration rate is calculated by dividing the number of mobile subscribers by the population of that area.

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