ACCESS TO MOBILE PHONES AND WOMEN'S SOCIO-ECONOMIC EMPOWERMENT IN RURAL AREAS OF BANGLADESH: UNDERSTANDING GENDER RELATION TRANSFORMATION

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Abstract: The discussion about women's access to and use of ICTs in developing countries has been an unsettled issue. Some schools of thought claim that due to engagement with household chores, traditional social norms, and values, women are less interested in ICTs; while others argue that like other social products, technology is not gender-neutral. However, to understand the impact of mobile phones and mobile internet in gender issues, this research conducted an empirical study on the self-employed women in rural areas of the Chittagong District of Bangladesh. A mixed-method was applied to analyze the collected data. The study tries to explore the impact of mobile phones and mobile internet on rural women's income generation activities; and how gender relation at the household level has been transforming due to access to mobile phones. The findings, reveal that having access to mobile phones, rural self-employed women are performing better than women who have no access to mobile phones and mobile internet. From both social and economic perspectives, the uses of mobile phones assist rural women to take part in decision-making, awareness build-up, increase movement, and control over income. However, strong patriarchal norms and traditional cultural constraints sometimes create barriers in access to mobile phones for rural women. Notwithstanding, the study depicts that ensuring gender-sensitive ICT policy and social awareness activities might lessen the barriers of women's access to mobile phones and the internet in the periphery areas. However, this research puts these issues to an empirical test.

Keywords: ICT; mobile phone; socio-economic empowerment; gender digital divide; gender relation; Bangladesh.

1. INTRODUCTION

Globally, Information and Communication Technologies (ICTs) have been considered as a sustainable and effective solution for any arrangements of development intervention (Sandys, 2005), which has added a new dimension in the arena of development discourse like gender studies across the world (Islam, 2012). Over the past few decades, there has been a clear understanding that ensuring equal access to ICT, different development strategic plans could be implemented more sustainably and inclusively, which explores a new prospect for the vulnerable sections of the society (Huyer and Sikoska, 2003; & Sandys, 2005). Though the ICT revolution has transformed the whole human civilization towards a robust change in the lifestyle, nonetheless, not all classes of people are equally benefited from the blessings of it. As

Moghaddam (2010), states ICTs played a catalytic role in transforming human civilization, but such changes might not ensure an equal inclusion of all human beings from their socioeconomic status and background. However, in the present global context, different research exhibits that there exists a clear digital divide not only in developing countries, but such a divide also exists in developed countries like the USA, UK, Canada, and Japan (Heeks, 2002; Reddick & Turner, 2012). Moreover, the digital divide might be severed from the gender aspect in the same regions, and academically which has been considered as 'digital gender divide'. Like other concepts of social products, ICT is not a gender-neutral phenomenon, and this area is mostly dominated by male members (Moghaddam, 2010). Across the world, ICT-related industries remain male-dominated areas, wherefrom production to user-level it is the men who have a predominant role and control over technologies (Hilbert, 2011; Huyer & Sikoska, 2003). Therefore, the application of ICTs in the development field remains a great dilemma from both the regional and gender aspect. As Hafkin & Huyer (2007), argue that *"In many countries such gaps become dramatic, putting women at a significant disadvantage."* Different empirical studies showed digital gender divide is more visible and acquit in developing and underdeveloped countries, as these countries are being experienced with various types of institutional incapability, policy constraint, and socio-cultural taboos (Hilbert, 2011).

Like other countries, the Bangladesh government has morally agreed with different initiatives both at national and international podiums that advocate the importance of women's access to ICT. Having priority on this issue, the Government of Bangladesh is trying her best to ensure women's access to ICT (GOB, 2009). Though the ICT Policy 2009 focuses on gender, particularly it refers to increase enrolment of female students in ICT courses along with promoting a gradual increase of the female in the industry of ICT (GED 2015). However, in reality, there remains a strategic and inclusive policy gap between the Five-Year Plan and ICT policy from the intersectional perspective of women both in urban and rural areas. In another study of ITU (2013) found that, in Bangladesh, all urban individuals are using 18.1% internet whereas, it is 2.1% in rural areas. The same study also showed, in urban areas male and female access to the internet is 21.8% and 14.6%, and in rural areas, it is 2.9% and 1.3% respectively (ITU 2013). So, considering both location and gender aspect, it seems women in rural areas are in the most vulnerable position to get access to mobile phones and mobile internet facility.

Different studies show that, in Bangladesh's perspective, men and women in rural areas are not enjoying equal access to mobile phones and mobile internet. Even in some cases, it has been found that women's access to mobile phones is being controlled by male members in the household. According to Islam (2012), in Bangladesh, many factors might influence the digital inclusion of women in rural areas like literacy and education, time, language cost, location, social and cultural norms, and ICT skills. Moreover, in Bangladesh context, lack of gender-segregated data has been treated as another form of lacking to understand the gender digital divide on a priority basis. As Islam (2012) opined that there are no reliable statistics on women's use of ICT in Bangladesh but it is clear that the numbers are very small. Having such a reality of gender digital divide, the study attempts to analyze how rural self-employed women's socio-economic conditions have been changing and in what ways women are getting empowered having mobile phones and mobile internet in their income generation activities and everyday's social life. Besides this, the study will critically analyze the changes in gender relations between men and women both at the community and household level due to access to mobile phones and mobile internet.

1.1. Problem Statement

In any developing or underdeveloped society, women's access to mobile phones and mobile internet is mostly determined by socio-cultural status, norms, and financial capability.

Besides this, policy-level interventions from the government level have been considered as a catalyst to minimize the gender digital divide of any society. However, in the Bangladesh context, the traditional socio-cultural believes, strong patriarchal norms, and less financial capability of rural poor women have been considered as barriers of easy access to mobile phones and mobile internet. Moreover, the absence of gender-friendly ICT policy remains a controversy in the way of women's empowerment with the inclusion of ICT. Having such a reality, this study tries to understand how rural self-employed women are being empowered or disempowered socio-economically through access to mobile phones and mobile internet. Besides this, selecting some notable indicators of women's empowerment, the study also attempts to explore the gender relation transformation process due to access of mobile phones in women's day-to-day life.

1.2. Research Objectives

This research has been conducted with the following objectives:
1. To access the impact of using a mobile phone and mobile internet in ensuring socio-economic empowerment of rural self-employed women;
2. To analyze how gender relations between men and women have been transforming in rural areas due to access to mobile phones and mobile internet.

2. METHODS

The main purpose of the study is to analyze the impact of mobile phones and mobile internet on rural poor women's socio-economic conditions. That's why to fulfill the objectives of the research, it attempts to target such a category of women who were self-employed and contributing to income generation activities on a small scale. In this regard, the study selected an area in the Chittagong District, where a good number of self-employed women were engaged with hand-made products preparing and selling at their household level throughout generations. In this study, both primary and secondary data have been utilized. Primary data have been collected through in-depth interviews with a standardized and structured questionnaire. Considering the availability of the target respondents, this study selected the Nowapara Union Parishad (the last tire of local government) of Raozan Upazila (sub-district level) of the Chittagong District. All required data and information were collected from 50 self-employed women who had access to mobile phones and mobile internet. These respondents were selected based on purposive sampling. Basically, the main criteria of the target population of this study was rural self-employed women, who has been preparing hand-made products like the bamboo mat, homemade dry food, and sewing cloths to a small extent and selling them. However, for the convenience of comparative analysis, the study also selected 25 self-employed women who had no access to mobile phones and mobile internet of their own. Besides this, to understand the gender relation transformation, 25 male members were selected randomly from those households where women had access to mobile phones. This study also conducted one FGD session and Key Informants Interview to have an overall perception regarding the research area. Major sources of secondary data were collected from books, journals, articles, daily newspapers, and reports. However, this study avoids exposing all male and female respondent's names.

2.1. Literature Review

2.1.1. *Women Empowerment*

In a broader aspect, Sam (2017), states empowerment is closely associated with the power relation between the less powerful and more powerful people in the society (cited in Rowlands, 1995; Sen, 1997), where bottom-up participation of the less powerful people can pave the way of controlling over resources through active decision-making of their day-to-day life (Kabeer, 1999). In that perspective, decision making power over the existing resources have identified by Naila Kabeer as the *'ability to make choice'* (Kabeer, 1999). Whereas 'choice' implies the possibility of alternatives and such alternatives ultimately categorized all choices as first and second-order choices (Kabeer, 1999). This strategic life choice depends on the expansion of people's ability, which was discussed by Kabeer as an empowerment process, and which is shown in the following figure 1.
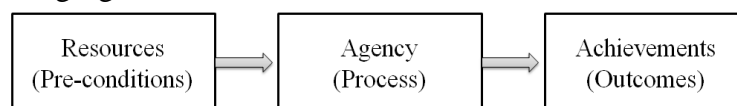

Figure 1 Kabeer's Dimension of Empowerment (1999)
Source: Adapted from Kabeer's Dimension of Empowerment Process

Alsop & Heninsohon (2005), also elaborate on women's empowerment process based on agency and institutional structure and considered the degree of empowerment through a mixed perception. Alsop and Heninsohon's empowerment framework has been also applied by development practitioners like World Bank's empowerment team in their different projects' assessments. Though, Sam (2017), elaborates this model adding some more relevant components in the framework like agency, institutional structure, capability, degree of empowerment, and development outcome. However, in Kabeer's framework, the agency was considered as a crucial part of the individual's own ability to choose an option based on one's ability (Kabeer, 1999). The mixed model of Alsop (2005) and Sam's (2017) suggests that the agency has a reciprocal relationship with the institutional level, and this institution could be both formal and informal. Ultimately, this interaction between agency and institutional structure strengthens people's capabilities to use existing resources more productively. Through this process, the degree of empowerment and development outcomes will be determined. This mixed approach of Alsop and Heninsohon (2005) and Sam's (2016) model of empowerment process is shown in the following figure 2.
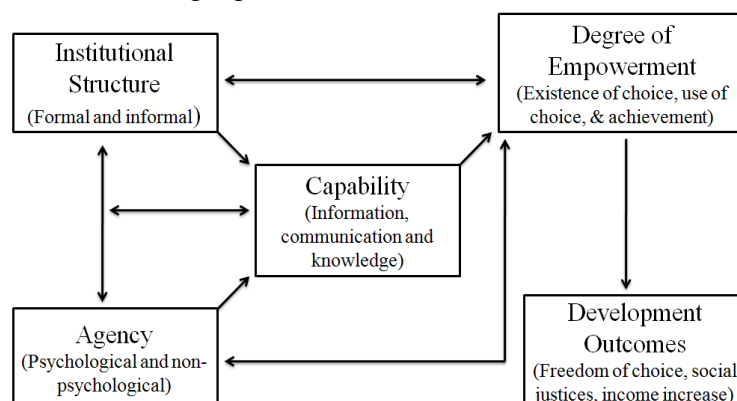

Figure 2 Alsop and Heninsohon (2005); and Sam's (2016) Dimension of Empowerment
Source: Adapted from Sam, (2016)

However, it will be wrong, if the scope of women's empowerment process has considered only from binary perspective. Rather, it has become more evident that day by day women's empowerment process getting more multidimentional. For the time being, access to ICTs and its proper application in the real life has been considered an indispensable prerequisite of women's empowerment process. In the development field, ensuring gender equality and agency building process among the poor women mostly depend on active participation, and opportunities of access to resources (Kabeer, 1999). In the age of information and technology, resources like ensuring access to ICTs have also been considered as a catalyst for women's socio-economic empowerment in developing countries (Hilbert, 2011, Huyer & Sikoska 2003; Gajjala, 2002). In the World Summit on the Information Society (WSIS), many scholars and experts argued that increase women's effective participation in ICT; and promoting ICT as an effective tool to ensure women's decision-making ability in their real life (Huyer & Sikoska, 2003). Moreover, The Beijing Declaration and Platform of Action, adopted at the Fourth World Conference on Women in 1995, illustrates women empowerment with enhancing skills, knowledge, access to and use of information technologies, where women's active participation through decision making will be established through the media and new technologies of communication (Sandys, 2005).

2.1.2. *ICT and Digital Gender Divide*

Information and communication technologies (ICTs) comprise a sophisticated and multifarious set of instruments and applications. However, ICT is a gateway to electronic equipment through which people can store, process, and disseminate the necessary data or information and later can share with others living in a distance (Thompsom, 2008). In a broader sense, ICT is included all those complex and heterogeneous sets of goods, applications, and services of traditional and modern equipment, like radio, television, telephone, computer, and internet (Cox & Marshall, 2007; Marcelle, 2000).

The rapid proliferation of technologies and its application to economic, political, and social processes are creating new opportunities that could improve the quality of human life. Unfortunately, it is becoming apparent that the benefits of access to ICTs are not evenly distributed between and within countries and across gender issues (Huyer & Sikoska, 2003; Islam, 2012). The reasons for this are mainly to be found in the unequal access to ICTs due to an unequal infrastructure and differences in the knowledge among developed and developing countries (Huyer & Sikoska, 2003; Islam, 2012; Marcelle, 2000) Different studies in the region of Africa, Asia, and South-East Asia, shows that women's access to ICT remains a great challenge a controversy considering the pattern of gender relation, cultural patterns and social structure (Mijumbi, 2002). However, Mijumbi (2002) shows that in rural areas of Uganda, women's CD-ROM project-based telecenters were able to increase the sense of motivation, increase collaboration and networking opportunities, and skills of learning ability among the users. Another comparative study of Hafkin (2002), shows being experienced from two empirical studies like ICT- based development projects in Ethiopia and Personal Data Assistances (PDAs) for the Nurse-Midwives in India, enables to enhance women's knowledge on internet management and self-esteem in their community. Like Hafkin's observation, Sandys (2005), also found similar cases in the West Bengal of India. Where some rural women were highly respected and well accepted by the local communities as they taught how to operate a computer, accessing, and distributing information at the Baduria ICT Center.

Best and Maier (2007), analyze ICT in the context of gender and culture of rural south Indian's perspective. In the study, they conducted an in-depth interview in the selected villages of Tamil Nadu, Indian. The main purpose of the study was systematic documentation of information that was narrated by the rural female members who had already taken ICT related

training. However, in the survey, it was found that women in rural areas face different types of barriers while access to ICT. As Best and Maier (2007), argue that, *"women continue to face barriers in using ICTs, mostly lack of proper application of the training, lack of access to computers, high cost of equipment and net connection as well as software and hardware applications and designs that do not reflect the need of women"* (as cited in Arun and Arun 2002; ESCAP 1999; Hafkin 2000; Mies & Shiva 1993; Mitter, 2005; Momo, 2000). From another experience of Malaysia, Sandys (2005), highlights a group named 'e-homemakers', that has been working in Malaysia since 1998, supporting women who choose to work from home to balance their gender roles and responsibilities. Sandys' (2005) study also shows that as women were getting involved with income generation activities staying at their home, that's why gender equality at the household level was established to some extent, but due to having some limitations in designing the program based on women's needs, the initiative didn't fulfill the expectations of the participants. So, in the ground of ICT for development, it is the women who tend to be latecomers, where any technology-based solution for women always remain male-dominated and poorly reflects women's needs (Hilbert, 2011).

Though in developing and underdeveloped societies women's unequal relation with technology is mostly determined by gender realtions, despite that in some cases it depicts that proper training, user friendliness mobile applications ensure women's effective participation with several technological devices like mobile phones. In a research, it shows that there is no gender and age difference regarding the purpose for using smart mobile devices in the class rooms of Greece. In the study of Papadakis (2018), it depicts that gender and age variation of the teachers' are not closely associated with mobile devices acceptance, rather proper training on mobile technologies to incorporate teachers' into pedagogical practice seems more effective. Moreover, user friendliness along with the simplification of mobile applications including both hardware and software ensure proper application of mobile technology of the female teachers in their class room (Papadakis, 2018).

2.1.3. *Digital Gender Divide in Bangladesh*

In Bangladesh's perspective, gender and ICT have been considered as a dubious area both from academic and practical aspects. Though the government has formulated an ICT policy, there are huge options to make it gender-sensitive. Even in the Seventh Five Years Plan, the government gave intensive focus on ICT strategy, but in reality, they're given less priority and focus on gender issues, especially for rural women, who are mostly underprivileged. In that context, it could be urged that, in the Bangladesh context, policy support in gender and ICT remains gender blind. Despite having some discrepancies in the policy level, the overall performance of Bangladesh in the ICT sector is worth to be mentionable. Compare to 2005, in 2013 the percentage of mobile subscriptions and internet users was increased respectively 6.29% to 74.43% and 0.24% to 5.75 (GED, 2015). Again, in comparison with the developed region, the progress in developing regions is far behind. The percentage was in 2013, 120.8% & 78.3% respectively for mobile subscriptions and internet users in the developed regions and at the same time, it was 90.2% & 32.4% in developing regions (GED, 2015). Regrettably, this study did not find any gender-segregated data on access to ICT both in urban and rural areas. In the following table, a comparison has been shown in the figure to have an idea of the overall scenario in ICT progress among the states in Asia and South-East Asia. In the following Table 1, a comparative scenario of Bangladesh's performance in ICTs has been shown.

Table 1 Indicators of ICT Progress in Asia and Region

Country and Region	Mobile subscriptions (in %)		Internet users (in %)	
	2005	2013	2005	2013
Bangladesh	6.29	74.43	0.24	5.75
India	8.0	70.78	2.39	12.58
China	29.84	88.71	8.52	42.3
Sri Lanka	16.85	95.5	1.79	18.29
Developed	82.1	120.8	50.9	78.3
Developing	22.9	90.2	7.8	32.4

Source: Seventh Five Year Plan FY 2016- 2020 (SFYP), (2015).

The digital divide is not an issue that only highlights the discriminations among the areas; however, it could be both gender and age-based issue for any societies (Selwyn, 2002). In the Bangladesh context, women in rural areas are getting less access to technology in their everyday life. Despite having a lack of strategic gender-based ICT policy, the Bangladesh government launched an innovative scheme such as UISCs at the Union level to make the ICT and ICT-supported services to the doorsteps of the rural people (Hoque & Sorwar 2014; Siddiquee 2016). However, in reality, it shows that being engaged with household chores, hesitation, and the distance of the center, rural women feel less interested to visit these centers (Hoque & Sorwar, 2014). Another initiative of Grameenphone- 'Community Information Center (CIC)', was launched in 2006 with 16 centers initially, now its number has increased more than 500 in 450 Upazilla (Sub-District level). Through which there has been an attempt to remove the digital divide, poverty reduction in rural areas, spread education for the deprived people, employment creation, e-commerce facilities, and teleconsultants for medical assistance (Islam and Tsuji, 2011). However, this study also found that women were more reluctant to go to these centers due to the cultural barriers of women's movement and strong patriarchal norms at the household level. Having such cultural barriers in the rural areas, access to ICT and women's empowerment has remained a rhetoric an unsolved issue. In this regard, Sandys (2005), states that *"unless this gender divide is specifically addressed, there is a risk that ICT may exacerbate existing inequalities between women and men and create new forms of inequality"* (p 3). Factually, if all these issues are not properly addressed, the gender digital divide and women's access to ICT will remain unsolved matter in development discourse.

2.2. Conceptual Framework

Based on the literature review, the study has designed a conceptual framework where it depicts how existing policy support and socio-economic factors influence women's access to ICTs like mobile phone and mobile internet. The framework also shows both negative and positive consequences of access to ICTs and their impact on some selected indicators of women's socio-economic empowerment process like access and control over income, free mobility, domestic violence, and women's decision-making ability on daughter's education, health, and early marriage. Basically, the study attempts to collect the primary data followed by these indicators, and analyze it to understand how rural self-employed women are performing in income generation activities. As well as, how gender relation transformation has been shifted due to access or no access to mobile phones and mobile internet of the self-employed women in rural areas of Bangladesh.
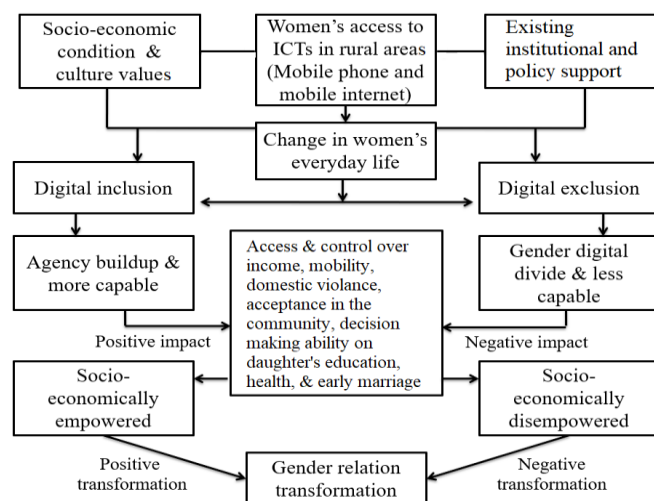
Figure 3 Conceptual Framework

3. RESULTS AND DISCUSSION

3.1. Access to Mobile Phone and Its Impact on Women's Socioeconomic Empowerment

3.1.1. *Women's Involvement with Income Generation Activity in the Study Areas:*

The study area was located in Raozan Upazila (Sub-District level) at the Noapara Union Parishad (Last tire of the local government). According to the respondents' criteria, this research found the maximum numbers of women who are self-employed and preparing different kinds of hand-made bamboo products in a very traditional way. The key respondents of the study area informed there were more than one hundred households who are preparing and selling different types of handmade products. It was also informed huge numbers of women were performing these activities generation after generation and they are preparing such homemade products without any financial support of formal bank loans. However, women who need small scale financial support, usually take microcredit from the local NGOs or any other informal sources. In the study, it has shown that 76% of the total female respondents were preparing the handmade bamboo product. Whereas, 12% & 10.67% of women were engaged with home-made dry food and flowering or sewing activity. Data also shows that 71.93% of women who were preparing bamboo products and hand-make dry food products, had access to microfinance to run their business.

The study area is famous for preparing handmade bamboo mats, which is used for building construction material. One of the key respondents informed that from the very beginning, and all most in every household woman was directly involved with bamboo mat preparing. But due to less profit, this number has decreased day-by-day. However, while interviewing female respondents, they informed from 50 pieces of bamboo one person could prepare 20 bamboo mats every three weeks. When demand is high and the market price is good, the average price for each mat varies from 250- 300 Tk., and approximately one can earn 6000 Tk in a month. Excluding the cost of production, in a month one can make an average profit of 4000- 4500 Tk by selling bamboo mats. In the same way, women who were preparing hand-made food and sewing can make a profit of 3000- 4000 Tk on an average every month. Respondents also informed that when demand is high, they have to take credit support from local NGOs or any other informal sources. In this regard, a female respondent of 38 years old described her business background in the following way:

> When I started hand-made food product selling, at that time my economic condition was miserable. I usually took money from my husband for preparing 'Muri' (dry fried rice) at home. As my family condition was not good, I had no other alternative except doing this. Later, I took a small loan from BRAC, and gradually I expand my business and now I am preparing several items. Like me, who are preparing bamboo mats and dry food items, they have no access to the banking system, that's why self-employed women like me, have to take small credit from local NGOs.

3.1.2. *Impact of Using Mobile Phones in Income Generation Activities:*

Certainly, access to mobile phone assists rural self-employed women in income generation activities. Women who have their mobile phone they can easily communicate with their customers and local agents to sell their products timely. Being access to mobile phones also capable women to take their decision rapidly like price fixation, receiving and selling products order. One of the self-employed female respondents of 43 years, who have been preparing bamboo mats for the last one decade described her experiences of using a mobile phone by saying:

> During the last five years, I have been using a basic mobile phone. Recently, bought a smartphone from my saving. Before that, I faced various difficulties to communicate with my clients and local suppliers. That's why I would not able to sell my products timely. But after having my mobile phone, I can communicate properly and also get updated information about the products. Certainly, the use of a mobile phone assists in doing business.

Due to access to product-related information, women are capable to make a better profit and ensure control over their income as well. This study shows that women who have access to mobile phones can easily communicate with their product suppliers, even when they don't visit their home for product collection. In that case, their husband sells the products in the local market. However, women who have mobile access could fix the price of their products over the phone conversation. Generally, that was not possible for those women who have no access to mobile phones. Consequently, they make less profit from their products and have less control over the income as their husband fixed the selling price in the market. A female respondent of 36 years old, preparing handmade bamboo products, described her story in the following:

> As I have no access to the mobile phone, I am not able to get updated information about the products' price and demand. Women who have their mobile phones, can take stock of their products and sell when the price goes up. However, for me, it is almost unthinkable. My husband usually assists me in selling products in the local market or door to door. But after selling my products, sometimes he (husband) took control over the money and spend the money without my decision. Sometimes, I get a very small portion of the money.

However, women who have no access to the mobile phone, are not performing well in profit-making. While interviewing the selected 25 female respondents, who have no access to the mobile phone, it found that due to poor communication network, and market information, most of them were preparing products as a part of auxiliary work. Sometimes they feel less enthusiasm to produce more for selling. It seems all about the same whether she prepares more products or not. A self-employed woman of 45 years old, who have been preparing hand-made dry food for the last 10 years, described her opinion by saying:

> The local market is very competitive, and the price is fluctuating frequently. I think, for a small producer like me, it is necessary to communicate frequently with the clients. I usually sell my

products going door to door in the village. However, if I have a mobile phone, I could manage to talk with the local market wholesalers for regular supply. Even, I know some women who are preparing food items, and they have learned this from the internet. Their products are more demanding than the traditional products of mine.

From other perspectives, this study shows women's access to mobile also ensures financial inclusion in different ways. Through the access of mobile phones, women are also able to use mobile banking like bKash and Rocket. Among the 50 female respondents, it has found that 38 (76%) numbers of women have access to mobile banking and they have their mobile accounts. Having such a mobile account, they can easily do their transaction like cash in, cash out, and transfer money to another account. Now they can receive money from their clients over mobile banking. Women whose husbands are living on abroad, they can also receive the remittance through mobile banking. On the other side, women who have no access to mobile, have to mostly depend on their husbands or other male members at their house who usually assist in selling their products at the market. So, access to mobile phones also assists to be financially included diversely. Undoubtedly, such inclusion also ensures women's control over their income and decision-making ability. In this regard, one female respondent shared in the following way:

> I have my mobile bank account in bKash. For my business purpose, sometimes, without moving outside, I can do transactions with the suppliers or clients through the mobile bank. I think, this is a safe process of mony transactions. My husband, who is living in another district also send me money in my account. I think mobile banking is really helpful for running a business. It saves time and cost as well.

Based on the information on income level, female respondents were asked about the improvement of income level, control over income, and the ability of taking decisions in business before and after the use of mobile phones. In table 2, it has shown that among 50 female respondents, 56% of women strongly agree' their income has increased after having access to mobile phones. However, to have an in-depth understanding of economic empowerment, this study sets another two indicators; control over income and freedom of decision-making ability. Over there, 52% and 50% of the women respondents 'strongly believe' their previous status has been increased. Inexplicably, women who were 'disagree' were always influenced by their husbands or other male members in their homes.

Table 2 Indicators of Women's Economic Empowerment (Access to Mobile Phone)

Indicators	Total respondents (n = 50) in %		
	Strongly agree	Agree	Disagree
Increase income (after using mobile phone)	56%	32%	12%
Increase Control over income	52%	34%	14%
More Freedom in decision making (investment in the business)	50%	28%	22%

Source: Field Survey

However, women who have no access to mobile phones were also asked the same questions to have an observation on how they are performing with the indicators of economic empowerment. In table 3, it shows that women who have no access to mobile phone and less financially included, their economic empowerment process is quite different than who have access to mobile phone and more included financially like mobile banking. The following table 5.3 shows the fragile performance of women who have no access to mobile phones

Table 3 Women's Economic Empowerment (No access to mobile Phone)

Indicators	Total respondents (n = 25) in %		
	Strongly agree	Agree	Disagree
Increase income level	20%	20%	60%
Increase control over income	8%	20%	72%
More Freedom in decision making (investment in the business)	8%	16%	76%

Source: Field Survey

3.1.3. *Uses of Mobile Phones and Its Impact on Women's Social Life:*

It has found that women's access to mobile phone and mobile internet ensure awareness both not only in their personal life, but it has a positive impact on their daughters lives also. Access to information enables rural women to be aware socially. Study shows that women became more conscious about their girl's education, health issue, and bad effects of early marriage of daughters. From time to time, the Government disseminates different awareness-related SMS like girl's education, women's health-related issues, and stop early marriage through mobile operators. Women who have their mobile phones can read these messages. Women respondents also shared that, now they are informed about the government scholarship program for girl's education, women's health-related services, and the punishment of early marriage of daughters. In table 4, it shows that to what extent women gave priority on these issues in their social life.

Table 4 Perception Towards Daughter/ Girl's Position in Society (Access to Mobile)

Indicators	Total respondents (n = 50) in %		
	Very important	Important	Not important
Priority of the girl's education	50%	20%	30%
Priority of the girl's health issue	40%	20%	40%
Stop girl's early marriage	54%	26%	20%

Source: Field Survey

On the other side, due to lack of information, women who have no access to mobile phones, their performance indicator is not up to the mark in comparison with the previous women's group. On the scale of 'not important' 52%, 60%, and 56% female respondents showed their indifferent attitude about their girl's education, girl's health issues, and bad effects of early marriage. So, it can be argued that access to information, women's perception has been changing gradually and they become more aware of their social rights like education, the bad effect of early marriage, and health issues.

Table 5 Perception Towards Daughter/ Girl's Position in the Society (No Access to Mobile)

Indicators	Total respondents (n = 25) in %		
	Very important	Important	Not important
Priority of girl's education	24%	24%	52%
Priority of girl's health issue	20%	20%	60%
Stop girl's early marriage	20%	24%	56%

Source: Field Survey

3.2. Access to Mobile Phone and Change in Gender Relation at the Community level

The socio-cultural context in the rural life of Bangladesh is very much structured and hierarchic in terms of class, age, and gender (Lewis & Hossain 2008), where marital status is one of the significant components to determine women's position and social identity in the society (Kotalova, 1996). However, rural culture is strongly molded by traditional social norms, religious superstition, senior-junior relationship, and strong patriarchal norm, where women's social and economic life is mostly guided by male members both at the household and community level (Lewis & Hossain, 2008). Undoubtedly, access to mobile phones promotes opportunities like openness, more sharing, and awareness buildup among rural people and women are also a part of this process. Having such a coexistence of dual values in the same social context, access to mobile phones might not always indicate a favorable change in gender relations for rural women. As Huyer & Sikoska (2003) state, *"both gender and technology are determined by the particular social context in which they are constructed, they should be seen as processes which evolve and change, rather than rigid absolutes"* (p.11). Here in this section, there must have an attempt to portrayed how gender relation is changing due to access to mobile phones at the community level.

Before analyzing the changes in gender relations, it will be rational to understand man's perceptions of women's access to mobile phones and mobile internet. However, this study interviewed 25 male respondents and also ensures men's participation in the FGD session, for having a holistic perception of men's believe. From the in-depth interview session, it found that at the household level women's access to mobile phones is considered a matter of less priority issue to the male members. At the household level, adult boys were given the priority of using mobile phones in comparison to a girl. Moreover, in most cases, considering the security and family responsibilities, female respondents also believe that boys should be given priority at first to mobile phone access. Maximum female members thought that, if their daughters get access to mobile phones, they might face various type of mishaps like sexual harassment or unknown phone calling. So, from the very beginning of family culture, boys always get the priority of using mobile phones. In table 6, it shows that 80% of male and 66% female respondents respectively believe that at the family level boys or other male members should give priority at first in mobile phone use. Whereas, 20% male and 34% female respondents believe that females should have priority in mobile phone access at the household level.

Table 6 Priority of Male and Female Members to Access in Mobile Phones

Respondents (Total n = 75)	Priority of Boys/ Male (in %)	Priority of Girl/ Female (in %)
Male participants (n = 25)	80%	20%
Female participants (n= 50)	66%	34%

Source: Field Survey

Besides this priority setting of mobile phone use, sometimes based on different issues, male members try to control women's access and use of mobile phones. In table 7, it has shown that 76% of female respondents believe that male members are controlling over the use of mobile phones, whereas it is 60% in the case of male respondents. Behind such a controlling attitude, male members argued that women are less aware of different mobile-based threatening issues like harassment and poor knowledge of using a mobile phone. In the same way, female respondents argued that the lack of mutual trust and exercise of patriarchal norms are the main reasons behind such controlling attitudes of male members.

Table 7 Men's Control Over the Use of Mobile Phone by Women

Respondents (n = 75)	Yes (in %)	No (in %)
Male participants (n = 25)	60%	40%
Female participants (n = 50)	76%	24%

Source: Field Survey

To measure the changes in traditional gender relations, this study sets four indicators like mobility outside the home, decision making at the household level, freedom of domestic violence, and acceptance of women at the community level. Both categories of women respondents were interviewed on these indicators and fixed the percentage based on 'good', 'fair', and 'bad'. In table 8, it shows that women who have access to mobile phone their status has been improved than the previous time when they have no access to mobile, and the percentages of change in 'good' fluctuate from 44% to 52%, whereas the percentage varies between 12% to 24% who have no access to mobile phone. From the following table 9, it has shown that due to access to information and social communication networks, women are less violated by their husbands at the household level, and their acceptance also increased at the community level. On the other side, women without access to mobile phones believe that due to less communication and less control over income, women's voices and choices are not rightly established at the family level.

Table 8 Changes of Women's Social Life: Impact of Mobile Phone and Mobile Internet

Indicators	Total respondents (n = 50 & n = 25, Total= 75) in %					
	Good		Fair		Bad	
	No access to mobile	Access to mobile	No access to mobile	Access to mobile	No access to mobile	Access to mobile
Increase mobility outside the house	12%	46%	24%	28%	64%	26%
Decision making at the family level	12%	44%	12%	26%	76%	30%
Freedom from domestic violence	24%	52%	24%	26%	52%	22%
Acceptance of women in the community	24%	44%	24%	28%	52%	28%

Source: Field survey

In the Focus Group Discussion, women participants discussed various prospects and challenges of using mobile phones. Despite having some socio-cultural constraints, respondents believe that access to information and communication positively impact building social awareness. Though there are some threats of sexual harassment of using mobile phones, nonetheless female respondents are more or less informed about how to face such challenges through proper channels. Now women are well informed about the emergency phone call for legal support. However, one of the women respondents expressed her opinion by saying:

> Access to mobile phones assists me in various ways. Using of mobile phone, not only assists in my business purpose but also my social life, I feel more empowered and conscious. As a member of a BRAC"s loan borrower, I am a regular user member of the BRAC 'Maya Apa' program. 'Maya Apa' is a virtual platform that can be accessed by anyone at any time for counseling and answers to questions on daily life, including health and legal issues. I also share my experiences with my neighbors and suggest the them to be connected there.

4. LIMITATIONS AND FUTURE RESEARCH

The authors are aware of certain limitations of this study. Though the study was conducted on a specific category of women in rural areas, despite that this study has some limitations that could be addressed in future studies. First, the sample size was relatively small, that's why it would be difficult to generalize the perceptions and results for all categories of self-employed women. Second, the findings and their implications discussed in this paper were based on one study that targeted a specific study area and respondents. The sampling method has a potential bias, as a sample of willing respondents (i.e. purposive sample) may not be generalizable. However, if future researchers wish to make generalizations, they should randomize their sample and apply intersectional analysis by including multiple geographical rural areas of Bangladesh.

5. CONCLUSION

Considering the socio-economic condition and women's financial capability, the study depicts that access to mobile phones and mobile internet of rural women has remained a debatable issue in Bangladesh. Though the study was conducted targeting a specific category of female respondents, that's why there remains a scope of intersectional studies in this arena. However, from the study, it has been found that due to access to mobile phones, the income level, women's outside mobility, decision-making ability, and control over the income were gradually increased. In this regard, self-employed women, who had access to mobile phones and the internet were performing better than that category of women who had no access to mobile phones. Having information regarding the importance of girl's education, health care, and the bad effects of early marriage, rural women became more aware than any other previous time. Even, in some cases, such awareness assists poor women to take part in the decision-making process at the household level. However, illiteracy rate, dual-work pressure at home, strong patriarchal norms, and traditional social values sometimes evolved as a barrier in access to mobile phones for the rural self-employed women. In the study area, it has found that due to poor knowledge in mobile language, sophisticated mobile software functions, and male members' priority in the ownership of the mobile phones; sometimes, women at the household level were experiencing male members' control over the use of the mobile phones and mobile internet.

However, in Bangladesh context, digital inclusion of poor rural women is not a simple phenomenon. To ensure women's inclusion with technologies, there must have inclusive and robust policy support. From the policy level, focusing on the special needs of rural women, if the government will pledge some strategic and gender-friendly initiatives in the ICT policy, then this will be helpful to minimize all forms of socio-cultural barriers effectively. In the FGD session, rural self-employed shared various supportive programmes like cheap smart phone devices, low phone call rates, and special loan support to buy mobile phones will assist rural women and reduce digital exclusion to a greater extent. In this regard, private sectors, government agencies, and mobile operators must have a comprehensive and inclusive approach for the less privileged self-employed women. In the absence of such an inclusive approach from the policy level, rural women's access to ICTs like mobile phones and mobile internet will remain rhetoric and unsolved issue in gender and development studies. However, it is hoped that this study will assist both academia and development practitioners to think about the various problems and prospects of access to mobile phones and mobile internet; and continue to work toward minimizing the gender digital divide in rural areas of Bangladesh.

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