LEVERAGING ICTS FOR EMPOWERING WOMEN ENTREPRENEURS IN BANGLADESH: A REVIEW OF RECENT DEVELOPMENTS AND WAY FORWARD

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ABSTRACT

Information and communication technologies (ICTs) have improved the way businesses are run while creating new avenues for empowering entrepreneurs especially women. In the context of developing countries, due to the fact of digital divide as well as digital exclusion women have disproportionate access to ICTs and digital opportunities and they are less equipped to avail the benefits that ICTs are offering. As ICTs have appeared to be empowering means for women in general, this paper attempts to bring forth how ICTs can be leveraged to empower women entrepreneurs by drawing from recent developments in the realm of policies and practices in Bangladesh and elsewhere. In Bangladesh, ICTs have received much wider political appeal and different policies and programs are swelling with broader goal of digitalization. However, women still face problems in accessing and using ICTs. This paper shows that leveraging ICTs for women entrepreneurs could have large implication for women empowerment and economic independence of rural and marginalized women in Bangladesh. Drawing from recent experiences in Bangladesh and other developing countries in Asia and Africa, this paper argues that both targeted and broad-based measures are required to create conditions that adequately take into account issues of women's access, usage, ownership, needs and relevance of digital contents and platforms in order to leverage ICTs for promoting women entrepreneurship.
Key words: *ICTs for Development, Women entrepreneurs, Women empowerment, Bangladesh*

1. Introduction

Technology plays enabling roles in furthering socio-economic development. In this age of information society, access to advanced technologies in the realm of information and communication has provided numerous opportunities to make lives better, economies to prosper and societies to develop (UNCTAD, 2011). However, while the developmental impact of ICTs are widely explored and further potentials are being constantly realized as the world is running forward at speed, still a major part of the world population remained lagging behind in the race (ADB, 2014). The disparity or the so called 'digital divide' between developed and developing countries in terms of reaping the fruits of ICTs has been one of the much discussed issue in the global arena, besides the concern for 'digital exclusion' of marginalized groups such as women, low income people living in rural areas and remote places with in developing countries are critically raised both in academic and policy making levels (Rahmatullah and Zaman, 2014; Nawaz, 2009).

When it comes to utilizing benefits of ICTs, consideration of women is always crucial for both as women are less likely to get the benefits from ICTs whereas ICTs have largest potentials to benefit women (UNCTAD, 2014). It is based on this conviction this paper tries to explore ways how ICTs are being leveraged and/or could be leveraged to spur entrepreneurship among women as well as to help women entrepreneurs to improve their socio-economic condition. With this broader objective in view, this paper proceeds as follows: the first part elaborates the background of the paper discussing how ICTs enable socio-economic development in developing country contexts and also in relation to women and other marginalized groups with particular mention of Bangladesh; after outlining the objectives and methodology of the paper, the second part provides a brief survey of literature and third and fourth parts analyses ICTs for women entrepreneurs in Bangladesh and ways to better integrated ICTs for helping women entrepreneurs in the context of developing countries similar to Bangladesh respectively. Based on the discussion and analysis, before conclusion the final section would then present how ICTs can be used more effectively to facilitate empowerment of women entrepreneurs overcoming existing bottlenecks and building on the on-going institutional and government initiatives and lastly resorting to some recommendations.

2. Setting the context: ICTs for women development

The total population of Bangladesh is 154 million in 2013 and half of them or about 77.5 million are women (BBS, 2013). In order to attain a higher level of GDP growth and economic prosperity, the country needs to utilize the full potential of women so that they can participate and contribute to the economy (Al-Muti, 2014). Although, women constitute half of the total population in developing countries, their contribution to GDP is very insignificant compared to not only their male counterparts but also in comparison to the contribution of women in more developed countries as well. While traditionally women are assigned to roles which are mostly unpaid family labor and are not accounted in GDP calculation, gradually more women are entering wage employment, however, with more concentration in jobs that are mostly low-paying and are commonly considered suitable for women such as garments works and domestic works (Kabeer, 2008; Salway *et al.,* 2005).

Use of Information and Communication Technology (ICT) can play very enabling role in unlocking the potential of women in general and women entrepreneurs in particular. ICTs also appear to have much potential for rural women who lack access to business related information, services and opportunities which

are much easily available to urban population. In this regard, innovative use of ICTs can contribute to expedite the growth of the economy by engaging women in productive activities and importantly it can also contribute to economic empowerment of women in the country. For example, in many developing countries ICTs are enabling people in accessing information related to development opportunities and services and contributing to improvement in their livelihoods. Experiences in Africa, Asia and other regions show that ICTs particularly mobile phones save time and generate income for women and low income people (Lesotho), mobile money facilitates business activities of women entrepreneurs (the United Republic of Tanzania), ICTs promote networks among rural women (Uganda) (UNCTAD, 2014).

In the context of developing countries, ICTs have become very useful business tools especially for women entrepreneurs. The Declaration of Principles of the World Summit on the Information Society (WSIS) which was adopted by around 175 countries in 2003 stressed on integrating the issues and concerns of women into the mainstream process of creating an Information Society. Acknowledging the existing 'gender-divide' in accessing ICTs and addressing these bottlenecks is crucial for improving the condition of women entrepreneurs in the modern economy driven by new forms of technology. Otherwise, it has been argued that "women entrepreneurs risk becoming marginalized without equal access to ICT" (UNCTAD, 2014). Key to achieving gender equality and women empowerment is to make sure that women are able to reap the benefits of ICTs and particularly women entrepreneurs are well equipped and capable of utilizing ICTs in productive ways. However, in the milieu of 'rapidly changing ICT landscape' a number of factors related to infrastructural development, institutional, legal and socio-cultural gender norms have been disproportionately hindering the potential of women entrepreneurs to start and grow up their business enterprises and compete well in the market (*Ibid*).

In Bangladesh, rural population and women remained far behind in the race of accessing the benefits of ICTs. Affirmative actions are being taken to improve the situation by a number of government and non-government initiatives. While digitalization has received wider political appeal and greater attention at the government level, real achievements in terms of reaching to benefits of rural and needy population have been far from comprehensive (Ahmed *et al.* 2011). During last several years, expanding ICTs to a greater spectrum of population has gained political currency as part of the government's manifesto for change and digitalization. A review of recent progress made in Bangladesh has been the purpose of this paper to examine the extent to which expansion of ICTs has created wider opportunities for disadvantaged population in Bangladesh particularly women entrepreneurs. After a thorough review of documents from government sources, it attempts to find out the pros and cons of making ICTs work for the women entrepreneurs in particular and women and other disadvantaged population in general.

3. Objectives and methodology of the paper

This paper attempts to review the role of ICTs in empowering women entrepreneurs in Bangladesh drawing from recent experiences of government and private sectors in leveraging ICTs for driving women entrepreneurship. It seeks to provide a review of recent development made in terms of making ICTs work for women entrepreneurs in the context of Bangladesh. Further, this paper tries to explore ways how ICTs are being leveraged and/or could be leveraged to spur entrepreneurship among women as well as to help women entrepreneurs to improve their socio-economic condition. This paper also examines the ICT related bottlenecks faced by women entrepreneurs and find out the existing challenges and untapped potentials for

women.

The focus of the paper is on analyzing the role of ICTs in women's entrepreneurship development and its scope is limited to the condition of women in Bangladesh and countries with similar socio-economic contexts. Methodologically, this study based its analysis on available secondary sources of data and review of existing literature including research articles, policy papers, case studies and government documents. Several case examples from Bangladesh and elsewhere are used to exemplify how ICTs are being utilized to benefit women entrepreneurs.

4. ICTs for women entrepreneurship: a review of literature

A large number of studies have been conducted on issues which broadly fall under information and communication technology for development (ICT4D) literature in the context of developing countries. Information and communication technologies including mobile phones, internet and other devices and services facilitate easy access to information and services, create employment opportunities for youth and women, expand the set of choices of people and increase the effectiveness of development programs (Martin and Abbott, 2011). Many researchers argue that ICTs act as complementary tools to achieve development goals (Donner, 2008; McNamara, 2003). However, there are other underlying issues such as social structure, culture, gender, illiteracy that may affect the utilization of ICTs for development purpose and that is why only providing access to technology would not create automatic change rather access to and use ICTs can 'enable change' and assist in achieving development objectives (Hosman, 2010; McNamara, 2003).

Keeping above issues in view, this part summarizes some of the studies which have focused on ICTs and women entrepreneurs in the context of developing countries and particularly Bangladesh. Rahmatullah and Zaman (2014) examined the challenges and constraints women entrepreneurs face when starting a business enterprise and also during its operation. Some of the major constraints found included limited or lack of access to resources and capital, lack of required information, weak support networks and socio-cultural constraints (*Ibid*). According to Habibullah (1987), training plays very effective role for development of entrepreneurship in general, but there are other issues, as showed by Saleh (1995) that constrain development of entrepreneurship among women such as insufficient capital, marketing deficits and discrimination in receiving required services from different agencies.

More recently, Siddique (2008) conducted a study to investigate the existing condition of women entrepreneurs in Dhaka city where he also found that women entrepreneurs mostly engage in familiar enterprises but face obstacles such as lack of capital, absence of marketing facilities and sales centers and balancing time between family and business. Moreover, individual entrepreneurial skills and surrounding socio-cultural environment affect entrepreneurship development among women. For example, both personal attributes of the entrepreneurs and his socio-economic background play decisive role in the success or failure of business venture (Aktaruddin, 1999; 2000). After studying the factors that determine entrepreneurship development among rural women who were members of micro-credit programs, Afrin, Islam and Ahmed (2008) found that financial management skills and group identity of women have significant implication for entrepreneurship development.

Studies have found that promotion of women entrepreneurship has implications for women empowerment which are in turn complementary to each other in the sense that empowerment happens

through women's participation in various economic activities and likewise entrepreneurship results in economic, social and cultural empowerment of women (Nawaz, 2009). Although the impact varies between rural and urban areas in case of women entrepreneurship development, overall women involved in entrepreneurial activities can exercise greater decision making power in the family and society (*Ibid*).

While, ICTs are creating newer, easy and effective ways to drive business by innovating new products and services using digital platforms, women along with rural and low income people are lagging behind in terms of accessing or using ICTs and thereby deriving potential benefits from using ICTs might be low. ICT can be a useful tool to help women to start and grow entrepreneurial initiatives but for this focused attention is needed for women and other marginalized groups in society. Studies show that women are late adopter of technology i.e. mobile phones and they are less equipped to use ICTs for development purposes (Martin and Abbott, 2011).

It has been emphasized that integrating ICTs in the lives and livelihoods initiatives of poor women can have positive impacts for economic and social development by providing them with more market opportunities. Examples of Self-Employed Women's Association (SEWA) in India, the Grameen's Village Phone Program in Bangladesh and business collectives like the Tortas bakers in Peru showed how poor rural women have successfully utilized ICTs in different ways (USAID Bangladesh, 2005). However, relatively less is known about how ICTs could be utilized to benefit women entrepreneurs in low income country like Bangladesh and this paper tries to fill this lacuna with particular focus on women entrepreneurs in Bangladesh.

5. Leveraging ICTs for women entrepreneurs in Bangladesh

Leveraging ICTs for women entrepreneurs have large implication for women empowerment and economic independence of rural and marginalized women in Bangladesh. Modern information and communication technologies have appeared to be an effective aid in enabling women to take part in the knowledge economy more actively and productively. It has been widely argued that economic empowerment of women is one of the main weaponry against eradicating poverty and achieving gender equality for sustainable economic development (UN, 2010). In this regard, promotion of entrepreneurship among women is a key element of ensuring women's economic empowerment where ICTs are plying and can further play a number of decisive roles as elaborated in the following parts.

5.1. Empowering women entrepreneurs through ICTs

This part explains the state of women entrepreneurs in Bangladesh and makes the case for using ICTs to empower women entrepreneurs. In fact, the condition of women entrepreneurs is still much marginalized in Bangladesh and they are very poorly represented in business and entrepreneurial activities. Some estimates suggest that women entrepreneurs own only 3 to 4 percent of all business enterprises in the country (Ahmed, 2014, p.2). However, the actual involvement of women in entrepreneurial enterprises can be reasonably estimated to be quite higher than the above figure as the rate of women's participation in the labor force is around 36 percent and the rate is showing an increasing trend during last couple of years (BBS, 2010).

In addition, there are issues that shed further light on the condition of women entrepreneurs in

Bangladesh. First, the relative extent of women's labor force participation rate (36 percent) is significantly lower than that of their male counterparts (82.5 percent) (BBS, 2010). Despite of this, the growing rate of women's participation in the economy means that there is a need for facilitating women's engagement in the entrepreneurial activities and this must be triggered by latest technological means and their applications. Second, taking into account the fact that women constitute about 90 percent of more than five million workers employed in Ready Made Garments industry, it can easily be gauged that women's involvement in other sectors is rather limited (Ahmed, 2014). As explained, the present condition makes it imperative to undertake measures for empowering women entrepreneurs especially through utilizing ICTs about which this paper is concerned.

Few recent studies show that the number of women involved in the small and micro enterprises is increasing in Bangladesh (ILO, 2008). For women entrepreneurs involved in such business enterprises, ICTs can play very effective role as the learning and networking tools and it can also play important role to outsource business opportunities in different stages in the value chain. Women entrepreneurs can utilize internet and ICT platforms to carry out business transactions more efficiently (UNCTAD, 2001). Information and communication technologies provide new opportunities for employment and also create renewed avenues for expanding existing ones. Especially for small and micro enterprises, some cases showed that ICTs have not just increased the performance of businesses but also improved the living conditions of the people involved (USAID, 2005)

Although women have been engaged in different types of jobs in traditional sectors as well as in a number of self-employment activities, they are less likely to get benefits from existing or new technologies. For instance, a study shows that in Bangladesh women mostly (37 per cent) used production methods which are traditional and purely manual than men (22 percent) whereas more men (17 per cent) than women (9 percent) used modern and productivity enhancing technologies (Marcucci, 2001). It can sensibly be argued that this pattern is also similar in the use of ICTs for productive purposes.

There is another crucial issue that must not be overlooked. When economic growth is not inclusive, poor people are more likely to get bypassed from the opportunities that may have enabled them to improve their conditions through actively participating in the market. It has been stressed that if women both as workers and entrepreneurs can be given access to market opportunities and be allowed to participate actively in productive endeavors, they will be in more advantageous position to gain from economic growth (USAID, 2005).

Ensuring equal access to market opportunities is critical for fostering economic empowerment of women. In this regard, the internet acts as a source of information and advice with great ease and social media plays the role of networking and business promotion. E-commerce opportunities brought by modern ICT platforms can highly benefit women entrepreneurs. In different developing country contexts, ICT platforms are already being utilized in production and retail business. For example, Self-Employed Women's Association (SEWA) in India has integrated ICTs effectively into their on-going production and training activities and has derived benefits from more efficient and wider marketing through ICT platforms (Joshi, 2012). There are also a number of other cases where women's groups are utilizing ICTs for various types of business purposes successfully in a number of developing counties ((Joshi, 2012; Wamala, 2012; Maier and Nair-Reichert, 2007).

5.2. Challenges and constraints faced by women entrepreneurs

This part has pointed out the constraints and structural limitations that hamper the use of ICTs to empower and equip women for entrepreneurial activities along with challenges they face that may supposedly carve the expected potential of utilizing ICTs for women entrepreneurs. In general, women in Bangladesh as like other developing countries face a number of constraints in accessing and using ICTs which is well captured by concepts like 'gender divide' or 'digital exclusion' (OECD, 2001; USAID 2005). In particular, as this paper is concerned about women entrepreneurship, women in Bangladesh also face a distinct set of barriers and challenges that hinder their potential to start a business activity or become an entrepreneur in the first place and later their ability to sustain and grow their business.

In other words, these barriers and challenges also impede the survival and growth of their business activities in which they are already involved. For example, discriminatory set of laws and regulation, unsupportive policies and practices and discouraging socio-cultural norms deter women entrepreneurs to start, operate or own a business enterprise profitably and competitively. Women self-employed in non-traditional sectors including service, manufacturing, trade or ICT sectors face more intense barriers in running a successful enterprise. Getting financing from formal sector is very difficult for women since they are traditionally excluded from owning property and assets (Kabeer, 2012). Further, women "lack networking connections to district-level value chains and platforms for interacting with policymakers, and they are often uninformed about effective means to find customers and suppliers, market their products, and diversify their businesses to enter profitable sectors" (bdwomensme.org).

As regards using ICTs for women entrepreneurs, the Information Economy Report (2011) identified four areas of practical constraints and specific challenges faced by women entrepreneurs where ICTs could play empowering roles to overcome these barriers. These include constraints in accessing financing, time constraints or time poverty faced by women, constraints on physical mobility and constraints faced by women in accessing education, skills and training (UNCTAD, 2011). It is evident from previous discussion that women entrepreneurs in Bangladesh to a large extent face similar challenges that fall under these four areas.

Similar to Bangladesh, experiences of a number of Central and West Asian countries show that entrepreneurship is less likely to grow among women due to different constraints specific to women such as lack of mobility, time, skills, business networks and access to information and financial support services whereas their business involvement is generally characterised by small size, low revenue earning and informal nature (Martinez and Nguyen, 2014). Pertaining to these realities, ICTs are being used to nurture and grow women's entrepreneurial initiatives as well as to address constraints which specifically create hindrance for women entrepreneurs. Pointing to the issues of women's poor skill and socio-cultural barriers to using and accessing ICTs, Martinez and Nguyen (2014) asserted that in order to leverage ICTs to benefit women entrepreneurs, government bodies, business development service providers and financial service providers need to be streamlined effectively.

5.3. ICTs for women entrepreneurs: Major milestones in Bangladesh

After surveying a number of relevant documents of the government initiatives and measures taken in Bangladesh, this part reviews the recent development made in terms of making ICTs work for women entrepreneurs. Bangladesh has achieved some major milestones in the ICT sector during the last one and half decades geared towards becoming a 'Digital Bangladesh' by 2021 (Hasan, 2014).

In the development parlance of Bangladesh, first realization about ICTs grew in early 1990s as an enabling sector for development. The Export Promotion Bureau (EPB) of Bangladesh with supports from UNDP started exploring the potential of ICTs as an export sector as early as in 1991. Following that a number of initiatives were taken by Ministry of Science and technology along with support from other international and national bodies to promote ICT as an export oriented industry in Bangladesh. Most notable was the formation of a committee with representatives from government, industry and academia in 1997 that formulated a report with a list of recommendations that basically 'shaped the modern discourse around ICT in Bangladesh' (A2I Programme, 2009). Whereas in the international area, an ever growing knowledge and practice were informed by, for example, ICT for Development (ICT4D) perspectives coupled with global mobilization to foster ICTs for promoting development in various ways.

Among public sector initiatives, different policies are enacted to promote e-governance, create employments and spur entrepreneurship through ICTs. Bangladesh's first National ICT Policy was formulated and approved in 2002 and it was revised comprehensively in 2009 which provided an overall framework for leveraging ICT for development purposes. With technical support from UNDP, Prime Minister's Office (PMO) launched a project in 2004 where pioneering initiatives were taken to transform the public administration and public service delivery through e-Governance approach. As regards leveraging ICTs for development purposes effectively, The Access to Information Programme (A2I) by PMO undertook considerable efforts and action research to streamline the use of ICTs and its potential in different social sectors as well as in all spectrums of government functionaries in Bangladesh (A2I Programme, 2012).

Concerning women entrepreneurs' development, no specific mention was there in the first ICT Policy 2002. However, the revised ICT Policy 2009 has come up with specific guidelines and action plans. A detail inspection of the document shows that the first two objectives call for ensuring 'Social Equity' and 'Productivity' that include issues of ensuring gender parity and achieving higher productivity in small, medium and micro enterprises by leveraging ICTs. The ICT policy 2009 also provides a comprehensive list of 306 actions plans covering all ten policy objectives and 56 strategic themes. Among those, a few of those directly addresses the issue of women's entrepreneurship development. For example, establishing e-commerce center for women "to expand market access to promote women-led micro enterprises" and "increase income earning opportunities for women without leaving their localities, enable them to form effective cooperatives to market their products and services, and create new job opportunities" (National ICT Policy, 2009: 10).

Apart from these policy measures, a number of projects have been implemented by Access to Information (A2I) programme which has formalized the vision of Digital Bangladesh along with its components (a) digital government and (b) ICT in business through connecting citizens and developing human resources to equip people to access and utilize ICTs in productive and effective ways (A2I

Programme, 2012). One of the main objectives of these programmes has been to leverage ICTs for promoting market access of disadvantaged business owners and producers including women and rural people. From literature review it was found that women and rural people are usually have limited access to facilities and opportunities brought by ICTs in only in Bangladesh but also in any other developing countries. For tackling this problem, Government of Bangladesh has implemented an extended initiative by opening up digital information and service centers named as Union Digital Center (UDCs) throughout the rural parts of the country.

Case of women entrepreneurs in Union Digital Center

In November 2010, the Government of Bangladesh launched digital information and service centers in all of 4547 Union Parishads – the lowest tier of administrative units in rural areas all over the country. This has created wider access of digital and internet services that were largely unavailable to rural population and more than sixty types of services are being provided to the general people including "land registration, life insurance, bill paying facilities of rural electric board, government forms, public examinations results, online university admissions, online birth-date registration, agriculture information and health care services" as well as computer training, business and market information and other internet services (Baagladesh Shongbad Shongstha 2014). Unique feature of these digital centers is that these are run by local private entrepreneurs where women entrepreneurs were found to be very proactive. There were 4516 female entrepreneurs who constitute the 50 percent of all entrepreneurs involved in UDCs and together they were earning BDT 1.3 billion (USD 16 million) annually from these UDCs as of January 2013 (A2I Bulletin 2013). UDCs have already proved to be financially sustainable as 3,859 centers are making profit and 633 centers are earning less than their expenditure. UDCs are earning a profit of 24.30 million taka per month on average with each center earning 5,410.26 taka on monthly basis (BBS 2014). Indeed, these centers all over the rural areas of Bangladesh are delivering services to citizens' doorsteps acting as a milestone towards achieving the goals of Digital Bangladesh. The UDCs have enabled rural people to access needed information and essential services in fast, cost effective and easy ways. UDC Census 2013 estimated that about 3.91 million people are receiving information and services from UDCs directly of whom 949,120 are women (*Ibid*). However, more support and coordination are needed to ensure that women entrepreneurs are prioritized so that it can be geared to catering to needs of women entrepreneurship in rural areas of Bangladesh.

In the national level, Bangladesh's ICT industry, as a sector of the economy, has grown significantly and currently it generates total revenue of over 300 US dollar per year (World Bank, 2015). The rapidly growing ICT industry has enormous potential to create employment for women in local and also in global markets if the country can further develop its ICT infrastructure and train and equip women to grab the opportunities created by global ICT markets. In fact, gradual adoption of ICT platforms such as internet and Facebook as digital market place, digital fair along with other e-commerce sites is creating a market flourishing situation where women entrepreneurs are in much suitable position to take benefits from. By patronizing these initiatives in coordinated and integrated ways, new opportunities can be made available for small entrepreneurs. It is also essential to ensure that measures are taken to equip them through effective training, appropriate content creation and business development supports. For example, activities of Small and Medium Enterprise (SME) Foundation in Bangladesh provide some illustrations of how ICTs are being leveraged to benefit women entrepreneurs.

SME Foundation Bangladesh is an autonomous public organization to facilitate and support the development of small, medium and micro enterprises in Bangladesh with particular emphasis on women entrepreneurs and other marginalized segments in the markets. Especially, it's Women Entrepreneurship Development (WED) programmes cater for promoting, training and supporting women entrepreneurs and business ventures with different targeted projects. Realizing the potential of using ICTs in enhancing performance and productivity of micro and small business enterprises, SME Foundation is regularly providing various training programs to prepare SMEs to adopt ICTs. Notable among other programs, SME Foundation is implementing the 'Women ICT Freelancer and Entrepreneur Development Program' in collaboration with Ministry of Women and Children Affairs Bangladesh and Bangladesh Women in Technology (BWIT) to develop trained women ICT freelancers and entrepreneurs all over the country with special target to reach underprivileged and remote rural areas as well. In the pilot phase 300 women are being trained with an objective to reach total 3000 women to enable them to engage in income generating business activities after the training (SMEF, 2014).

Finally, during the last decade, the use of modern information and communication technologies such as mobile phones and internet experienced a huge growth and created an ever wider landscape for utilizing ICTs for development purposes. Most spectacularly, mobile phone subscription rate has seen tremendous growth in Bangladesh during last decade and total subscriptions number reached to about 131 million by February 2016 in a country of 160 million populations. Compared to mobile phone networks, the internet service in Bangladesh is still functionally limited. According to Bangladesh Telecommunication Regulatory Commission (BTRC) Website data, as of February 2016, the total number of internet subscribers is about 58 million and great majority of them are using internet through mobile phone networks (Last accessed on April 9, 2016). Using this vast digital infrastructure, mobile financial services in Bangladesh such as bKash has experienced an impressive growth enabling poor and unbanked population to access and take benefits from financial services (Islam, 2013). However, in order to effectively utilize ICTs, a number of issues need to be emphasized which are currently unavailable or inadequate to address the special circumstances and constraints face by women entrepreneurs in Bangladesh.

6. Integrating ICTs for promoting women entrepreneurship

Women entrepreneurs can contribute to reduce poverty and boost economic growth through income generation and employment creation (ADB, 2015). This part presents the ways to better integrate ICTs for helping women entrepreneurs by overcoming existing bottlenecks and building on the on-going institutional and government initiatives in Bangladesh as well as in other developing countries with similar socio-economic contexts.

Leveraging ICTs for promoting women entrepreneurship needs to be seen as involving broader socio-economic and policy environment of the country where creating a favourable atmosphere for entrepreneurship to flourish must hold the first priority. When relating to women in general and integrating ICTs for supporting women entrepreneurs in particular, it is essential to take into account all the constraints faced by women entrepreneurs in terms of doing business as well as accessing ICTs in an integrated approach. In this regard, International Labour Organization (ILO) and United Nations Conference on Trade and Development (UNCTAD) ICTs for Women's Entrepreneurship Development (ICT4WED) have developed a framework which can be used to assess the potential of leveraging ICTs for empowering women entrepreneurs (UNCTAD, 2014). This framework has six conditions which include:

(a) Legal and regulatory environment which is gender-sensitive and facilitates economic empowerment of women;
(b) Effective women entrepreneurship policy patronized by committed leadership and coordination;
(c) Access to gender-sensitive and inclusive financial services;
(d) Access to business development services which are geared to women entrepreneurs' needs;
(e) Access to markets and effective use of ICTs in terms of access, ownership and use of technology along with relevance and affordability of digital contents and platforms;
(f) Effective use of ICTs for representation and participation of women entrepreneurs in policy dialogue.

Based on the preceding discussions and the above framework, a number of important areas can be emphasized as way forwards if ICTs are to be leveraged for promoting women entrepreneurship development. First, creating conducive policy environment and enabling institutional supports have to be at base of all efforts to encouraging women entrepreneurship through using ICTs in this purpose. Integrating issues of ICTs in national women development policy and labour and employment policies; and concerns of women entrepreneurs in ICT policy as well as within the overall framework of Digital Bangladesh must be streamlined and addressed adequately. Digital Bangladesh in itself cannot be a goal in itself, if it is not translated into the lives and livelihoods of people in a way that benefit them most. Further policy measures need to be taken along with the implementation of the existing ones to surmount the constraints faced by women entrepreneurs such as insufficient capital, marketing deficits and discrimination in receiving required services from different agencies (Saleh, 1995). Performance of public service providers has to be improved specifically geared to the needs of women entrepreneurs.

Second, as access to financial and business development services is required for women entrepreneurs to succeed in business ventures, provision of these facilities has to be based on responsive public policy action and efficient and inclusive private sector development. Overcome some of the recurring problems faced by women entrepreneurs in Bangladesh such as lack of capital and required skills can be done using ICTs for example mobile financial services to expand financial exclusion and e-commerce and digital services for new entrepreneurs.

Third, enabling women entrepreneurs to access, use and effectively exploit opportunities brought about by ICTs should assume the highest emphasis. It is essential to consider that both targeted and broad-based measures are required to create conditions that adequately take into account issues of women's access, usage, ownership, along with needs and relevance of digital contents and platforms in order to leverage ICTs for promoting women entrepreneurship. Ensuring women's access to appropriate contents taking into account local language and contexts accompanied by their capacity building to utilize available facilities and technologies productively is critical for ICTs to have any positive impact on the promotion of entrepreneurship among women (USAID, 2005).

For this reason, training and capacity building for women entrepreneurs can be prompted by strengthening government agencies such as SME Foundation and other departments of relevant ministries and also by building effective partnership with non-government organizations and women entrepreneurs' associations in the country. As studies found that lack of access to marker information, information about available public services and business supports and weak support networks and socio-cultural constraints (Siddique, 2008; Rahmatullah and Zaman, 2014), ICTs can be utilized to spread market information, build

wide networks with other entrepreneurs and market actors and most effectively in marketing, sales and promotion of businesses run by women entrepreneurs. It is also important that women entrepreneurs those who are in disadvantaged positions living in rural areas or with low level of literacy are provided with opportunities to take benefits from ICTs and expanding digital market and information economy in the country.

Finally, ICTs can activate political mobilization among women entrepreneurs by enabling them to become active participants in the growing information economy. As a tool of communication and as an enabler of development, ICTs can enhance women's presence in the productive sector of the economy by creating new opportunities to start business, improving the ways existing business are done with increased efficiency and productivity, connecting with wider markets and other business actors, mobilizing all women entrepreneurs to represent and further their interest in policy dialogue and overall, nurturing a nutrient environment where women entrepreneurship can flourish.

7. Conclusion

Information and communication technology has created immense opportunities to be harvested with greater possibility and ease of reaching the hitherto underserved or excluded portions of the society such as women, rural population and other marginalized communities. However, to fully utilize the real potential it needs to keep in mind that ICT is a means to achieving other development objectives and it is an effective tool indeed for that end. In order to ensure that people from all segments of society can take benefits of modern ICTs, it is important to understand how existing constraints prevent many from getting those benefits and why few others are even excluded from the entire picture. As this paper has discussed at length, leveraging ICTs for women entrepreneurs' development has large implication for women empowerment and economic independence of rural and marginalized women in Bangladesh. In particular, integrating the use ICTs for promoting women entrepreneurship in Bangladesh not only would drive the economy forward, but also contribute significantly to ensure empowerment of women through increased entrepreneurial activities and their economic independence as well.

Drawing from a number of illustrations from Bangladesh and other developing countries, this paper shows that women entrepreneurs frequently face a number of constraints that hinder them to take full benefits from using modern ICTs such as mobile phones, internet and digital facilities in an expanding information economy. It is emphasized that ICTs can be used more effectively to facilitate empowerment of women entrepreneurs while overcoming existing bottlenecks and building on the on-going institutional, government and private sector initiatives. For this both targeted and broad-based measures are required to create conducive policy environment and other conditions that adequately take into account issues of women's access, usage, ownership, needs and relevance of digital contents and platforms in order to leverage ICTs for promoting women entrepreneurship. To better integrated ICTs for helping women entrepreneurs, more in-depth studies are needed with regard to sector specific exploration about women entrepreneurship development under the framework of overall economy of country.

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