



Research Article

# Exploring the Usage of the Mobile Phones by SMEs in the Achievement of Vision 2020 Goals

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## Abstract

This research seeks to investigate the usage of mobile phones by the rural SMEs to achieve the vision2020 goals, with a specific focus on good governance, poverty alleviation and, health, education, human resource and empowerment. There is relatively little known about the use of mobile phones in achieving national socioeconomic development agendas. This research fills the gap by presenting mobile phones as the enablers of Vision2020 goals in Bangladesh. The findings from 32 interviewees suggest that mobile phones can assist the government of developing countries, and in particular the Bangladeshi government in achieving vision2020, by providing a distribution channel for good governance, poverty alleviation, health, education, human resource and empowerment programs. The findings of this study, the opportunities to use mobile phones for rural SMEs sustainability, as a platform for collaborative learning, as a tool for lifelong development for SMEs, are rarely addressed in prior studies. Since most of the prior studies approach mobile phones use from the consumer standpoint, this is one of the few papers that address the socioeconomic development opportunities for the rural SMEs. Furthermore, this research collected data from the SMEs to understand the development opportunities and also from the service providers, such as government officers, NGOs experts, university teachers, doctors and bankers, to provide more insights on the development mechanisms using mobile phones. Therefore, the outcomes and results of this research will be of potential value to the service providers in achieving Vision2020 goals in Bangladesh and in other developing countries.

**Keywords:** Mobile phone services, Socioeconomic criteria, Socio economic impact, User needs.

## Introduction

Since the rapid diffusion of mobile phones in developing countries, the utilization of the mobile phone network for more than voice and SMS communication has increased. Researchers and ICT practitioners suggested to offer various services such as economic development, health, education and human resource development (Rotberg & Aker 2013). Researchers suggest, in developing countries where infrastructures are limited and terrains are inaccessible, mobile phones have the potential to establish a synergistic link to the information, society and country that increase opportunity of the poor and rural citizens (Rotberg & Aker 2013). Following the approach to use mobile phones for social and economic development, some studies further suggest that the development impact using mobile phones can be extended to the rural Small and Medium Enterprises (SME), a very important sector in most of the developing countries (Chew et al. 2013). These studies consider mobile phones as the economic driver with macro-level influence on rural micro-entrepreneurs for capacity development, education or private sector modernization. Mobile phone, therefore, is now at the center of intense national interest for the SME improvement in countries like South Africa, Kenya, Philippines, India and recently in Bangladesh.

In Bangladesh, the social and economic development of the rural SMEs is very crucial in achieving the committed Vision2020 goals. This is because SMEs provide the second source of livelihood, after farming (Khan et al. 2012). Though the significance of the SMEs in the economy has been recognized in all the five-year development plans in Bangladesh, the rural SMEs received very little supports to combat the poverty and to overcome challenges in receiving education, health, human resources and awareness

development services (Khan et al. 2012). Inequalities in access to the development services continue to pose major barriers in Bangladesh, and the lack of delivery channels remains a persistent problem (Khan et al. 2012).

Recently, the Vision2020 goals declared by the current Bangladeshi government have electrified the development for the neediest and marginalized people in the country (Hossain 2010). National and international NGOs, Donor agencies are orienting their programs around the attainment of the Vision2020. Government and stakeholders are aiming to utilize the resources of the country to reduce hunger, control infectious diseases, increase education of the countrymen, empower women and improve their health. However, decades of experience have shown that progress in these areas is inhibited by other broader factors, such as a functioning government, limited infrastructure and lack of delivery channel (Sharafat et al. 2014). In many cases, the government and developing agency's efforts and initiatives do not reach the rural areas, and rural development is curtailed. Therefore, achieving the goals of Vision2020 will be greatly driven by the support of distribution channels for poverty reduction, education improvement, employment generation and awareness development programs.

The use of mobile phones for the socioeconomic development is a not a new concept, however little is known about how mobile phones can assist in achieving national goals, which forms one of the main gaps in mobile phone research. Another rationale for undertaking such a study is, despite the huge potential of mobile phones for the socioeconomic development of the SMEs, most of the Bangladeshi mobile phones studies are conducted from the personal usage perspective (Islam et al. 2013). Moreover, while the existing literature has examined the mobile phone

as a service delivery platform for mostly in isolation, this paper argues that it needs to be considered in tandem with citizen engagement through an analysis of the relationship between citizens and the state institutions (Sri & Melissa 2012). Lastly, lack of exploratory research that analyses economic, social and biophysical dimensions of the SMEs and provides insights into the social-economic development process.

Inspired by the lack of research on the use of mobile phones in achieving Vision2020, this study seeks to investigate how mobile phones can be used for the social economic development of the SMEs that can assist governments in achieving Vision2020 goals. This study meticulously analyzes social, business and economic constraints of the SMEs and provides some avenues to support rural SMEs' poverty alleviations, economic and social growth programs. Thus, the aims of this study are (1) to provide insights into SMEs' obstacles due to poverty, lack of education, poor health and unemployment, and (2) to explore the use of mobile phones in delivering poverty reduction, educational improvement, health improvement services. The aims are realized through interviews with 32 in total SME owners, government officers, social development organization officers, IT professionals, doctors and bankers.

This study contributes significantly to the theoretical understanding of mobile phone usage in achieving socioeconomic goals by providing a distribution channel for good governance, poverty alleviation, health, education, human resource and empowerment. This study contributes to the existing knowledge of the mobile phones by providing empirical evidence in general and in particular in Bangladesh. The research is one of the few works that collected data from providers such as doctors, banks, MTOs and mobile phones experts' to explore various avenues of development.

### **Theoretical Foundation**

Over the last two decades, the world has witnessed a huge uptake of mobile phones in developing countries. The explosive growth of mobile phones in developing countries sparked the idea to utilize the mobile phone network for more than voice and SMS communication. Government, non-government organizations, businesses are increasingly turning their attention to the delivery of services through mobile phones in the areas, such as economic development, health, education and human resource development. Prior studies suggest that mobile phones impact on the social and economic development, at least in two ways, firstly, by linking rural, poor and marginalized areas to the information that increase market opportunity and secondly, by providing a cost effective platform for governments to offer development activities on e.g. capacity development, education or private sector modernization (Samarajiva, 2011). However, in Bangladesh, the key question is still unanswered, how the mobile phone can improve the rural SMEs' economy, health, education. The next section reviews the literature to introduce the enabling role of mobile phones for development.

Small and Medium Enterprises (SMEs) are very important in Bangladesh, an agriculture based country in Southeast Asia. SMEs provide the second source of livelihood in Bangladesh, after farming (Ardic et al. 2012; Davis et al. 2010). SMEs have been playing a pivotal role in fostering economic growth, sustaining global economic recovery, reducing poverty, and industrializing since the independence of Bangladesh in 1976 (Khan et al. 2012). In the future, to achieve the committed vision2020 goals, the development process of Bangladesh must strive towards the improvement of SMEs, especially the rural SMEs (Mahmuda et al. 2010).

In this research, SMEs are defined as the businesses which employ 10 or less people and have assets worth Tk 500,000 or less (1 Taka= \$ 0.07 Australian Dollar). This definition is appropriate to the SME foundation and the current industrial policy in Bangladesh. However, poverty, low financial capacity due to small investment, poor education of the entrepreneurs, inadequate health system, the lack of banking and finance are some highly referenced bottlenecks to the growth of SMEs in popular business and economics studies. Research supports that SMEs do not receive specific attention to overcome barriers to their growth and development. However, another stream of research studies from the Information system suggests that the huge uptake of mobile phones by the SME owners in developing countries is an opportunity to increase SMEs ability to take part in the information age (Aker & Mbiti 2010, Hellström 2011, Ojo et al. 2013, Rotberg & Aker 2013).

Social and economic development is paramount for the existence and social survival of any society and country. For millennia, social and economic development was governed by social and economic theories, programs initiated by the government and policy developed by nations unitedly, -with the notion of improvement of prosperity and standards of living, increments of the wealth of nations and- the notion of evolution of social change. (Hossain 2010, Uimonen et al. 2009). One of the most serious attempts in Bangladesh, to combat the challenge of poverty and other not developed areas, such as health, education etc. is the Vision2020. Together with the World Bank's study and the past government's (1996-2001) development agenda, the current government equipped with attaining the Vision2020. The goals and development agenda of Bangladesh for 2020 in social, economic, political, institutional and environmental terms, in

general envisages that by the time the basic needs will be met for the countrymen. This is an attempt to capture well-being that is broader than the traditional measure, per capita income, so it includes qualitative and quantitative targets. Democracy and effective parliament, good governance, economic development & initiative, employment creation, improving food and nutrition, betterment of healthcare, elimination of illiteracy and improvement in the quality of education are some major themes of Vision2020 in Bangladesh.

The impact of mobile phone in promoting good governance has attracted significant interest in developing countries (Aker & Mbiti 2010, Ojo et al. 2013). Good governance refers to the government's capacity in managing public life with fair, participatory, responsive, well-managed, and efficient policy. In a good governance, information delivery to the public is a key task of government and it is their responsibility to keep citizens informed of what is happening around them (Nwelih & Ukaoha 2010, Sri & Melissa 2012). However, during the past 10 years, mobile phones affected the way citizens interact with each other and with the society. Thus, mobile phone communication directly support a deepened democracy through encouraging the citizens' participation in state affairs, influencing the political decision making process, and helping in holding governments accountability (Hellström 2011). The mobile phone is also a 'voice' for the development needs (Aker & Mbiti 2010, Hellström 2011, Ojo et al. 2013). Moreover, in developing regions, mobile phones can act as a new interface between government and citizens and to make public services more accessible (Hellström 2011, Ojo et al. 2013). Lastly, public services are suggested to be combined with mobile phones, as the government processes in delivering public services in developing countries are always criticized for being low (Chowdhury & Satter 2012).

Mobile phone adoption and use have advanced economic development substantially in many developing countries by increasing the market efficiency. First of all, mobile phones provide access to critical information such as agricultural information, employment opportunities, business opportunity which connects the labor demand and supply network (Dannenberg & Lakes 2013). For example, mobile phones connect Indian fishermen and Kenyan farmers to the business network that improves their production, marketing and increase the overall income (West 2012). Mobile Phones help SMEs to serve broader geographic areas and to reach new consumers. Mobile phones also spanned a wide variety of businesses (Aker & Mbiti 2010). In developing countries, young entrepreneurs and the small shops increase income by selling airtime cards in the streets, shops are open to sell, repair and charge mobile phone handsets. These activities obviously create employment for numerous small-scale (and often informal) firms. Perhaps, the most astonishing story of mobile phone success is in Bangladesh, when mobile phones contributed significantly to employment generation for village women by renting their mobile phones in the early years of mobile phone adoption. Ukpere et al. (2014) also suggested the Relevance of mobile phone usage on the Business Ventures of Kenyan Women Entrepreneurs.

Mobile phones have proven to be a powerful tool for addressing the enduring health challenges in developing countries. Mobile phones speed up health information to the hard-to-reach medical, provides critical technical knowledge to physicians and nurses in the rural areas, remind HIV/AIDS and tubercular patients in Kenya, Malawi, South Africa to take their medicines, send patient reminders about upcoming appointments and alert citizens when epidemics or other crises occur (Rotberg & Aker 2013). Furthermore, in recent years, researchers have used mobile

phones as tools for encouraging physical activity and healthy diets, for symptom monitoring in asthma and heart disease, for supporting smoking cessation. Among other health care systems, the ones possible through a mobile phone are Cancer Care Management, improvement of maternal health services. For woman health, in Ghana, the mobile phone is used to facilitate breastfeeding via personalized counselling; in Rwanda the community health workers keep track of pregnant women, send emergency alerts, call ambulances, and offer updates to local clinics on emerging health issues (Rotberg & Aker 2013). More sophisticated usage of mobile phones in healthcare is the M-Pedigree, a new drug monitoring system in Rwanda, Kenya, Nigeria, and Ghana, which verify whether a particular medicine is counterfeit or genuine. Among other prospective uses of mobile phone are taking blood pressures, monitoring blood sugar, hearing heartbeats are in the development phase, those can significantly improve health management system of the developing countries citizens.

For sometimes, there has been widespread recognition that mobile phone based learning is very effective for developing countries. Empirical evidence suggests positive impact of a mobile phone-based literacy and numeracy program, especially for the adults. Learning using a mobile phone can be anytime, anywhere and is also cheap (Aker et al. 2010). Prior studies suggested that mobile phones aid education by supporting lifelong learning, which is very important for continuous improvement and professional development. Another possible use of mobile phone mediated learning is the opportunity of collaborative learning, defined as where two or more people learn or attempt to learn something together (Kim et al. 2014). However, computer-based collaborative learning has limitation to offer flexible adult learning, but mobile-based collaborative learning supports

interactions among students as well as instructor-student interactions (Ting 2013).

The mobile phone develops human resources by increasing the access to relevant information in a timely manner. Knowledge is a form of processed information, which is available at various nodes of social and economic networks. However, social and economic networks are not “flat” but are structured by hierarchy, as the actors involved have different types and levels of power (Carmody 2013). Mobile phones enable and strengthen this social network of the rural and poor citizens, which forms the transformational characteristics of the mobile phone (Smith et al. 2011). The mobile phone also develops human resources by connecting to the economic networks of the financial institutions. In developing countries where banks and financial institutes find difficulties in offering banking services to the rural and poor, connecting to the economic network within a social network can play a crucial role in smoothing development problems and maximizing human capabilities (Rotberg & Aker 2013). Lastly, mobile phones expand human resources by expanding market barriers and government networks of services, political mobilization, crisis management.

Mobile phones are revolutionizing the business, social, political structure in developing countries by empowering women, rural and poor citizens. First of all, mobile phone communication, which is at the same time free from the constraints of physical proximity and spatial immobility, has empowered weak and poor citizens (Rotberg & Aker 2013). This mobile communication enabled rural citizens to have access to the government and to the corporate’s top managers of the cities. The reinforcement of empowerment of the interacting systems also stimulates freedom, autonomy and social control of

the individuals or social groups, such as women (Roy 2013). Mobile phones also empowered small business owners in most of the developing countries by increasing the range of alternative options to sell their product.

### **Research Gap and Research Objectives**

Although previous studies suggest socioeconomic development using mobile phones in developing countries in a chiefly positive light, the impact of mobile phones on rural SMEs in Bangladesh has not been substantiated empirically. Thus, relatively little is known about how modern telecommunications services can benefit the rural SMEs. Currently Bangladesh is well-positioned for mobile phone based services to reduce poverty and to provide better governance, education, increase human resource capabilities and develop awareness, this is because of people’s choice of mobile phone and the government’s decision to implement a mobile phone in providing these services. However, it is important to understand the dynamics of the social, business and economic needs for the mobile phone based services.

### **Research Methodology**

This research applies a qualitative methodology to investigate the role of mobile phones in the achieving of Vision2020 goals for the rural SMEs in Bangladesh. The method is advisable when the study wishes to explore the complexity of the situation by the voices of the participants (Clark & Creswell 2011). The qualitative methodology in this research is based on an interpretive approach. The interpretive approach advocates the development of human behavior on a complex IT phenomenon, considering the surrounding social and business contexts. The mobile phone is a complex phenomenon as the use of mobile phone is a dynamic socio-technical process. In this

research, the focus is on the participants' perceptions, attitudes and experiences. Previous studies have not adequately addressed the development aspects of mobile phones in the rural context in Bangladesh.

Interviews have been chosen as a method of data collection because interviews will enable the researcher to obtain deeper understanding of the SMEs various problems in receiving government aids and developing agencies support on: good governance, economic development, health improvement, education attainment, human resource and awareness development. The interview is more appropriate for complex situation, where little information is discovered (Leedy & Ormrod 2000). Semi-structured interviews were used in this research. The literature review was the foundation of the semi-structured questions in this research. Six (06) sets of questions were developed, each for the SME owners, IT experts, Government officers, NGO experts and Marketing officials. The questions differed because of the participants' occupation and expertise. Three kinds of questions such as descriptive, structural and the contrast questions were asked in the interviews. Descriptive questions such as SMEs' obstacles in receiving poverty alleviation, education improvement, health services, SMEs' mobile phone usage pattern, and the advantages of mobile phone for SMEs were included. Structural questions such as mobile phone based services infrastructure, mobile phone based services initiatives and the possibilities of mobile phone based services were asked. Contrast questions such as mobile phone based services compared to computer based services, required legislations compared to the current one were also included.

The interview participants were selected based on their insights, experiences and thoughts, which are valuable for the

research (Yin 2011). They were identified and recommended by the researcher's own professional and personal communication. Besides the researcher's own contacts, the high officials of banks and teclos helped the researcher to identify the potential participants. The recommendations by the contacts were also judged by the participants' professional work and engagement. The sample included people working in: Small and Medium sized Enterprises (SMEs), Government officers from IT and Planning commissions, the (not for profit) social economy, research and consultancy. In total, 32 people were interviewed. The numbers were chosen not only because they will give enough information for the research, but also the numbers were physically possible to interview. This research includes 5 SME owners (coded as SME1, SME2, SME3, SME4, SME5), 5 IT experts (coded as IT1, IT2, IT3, IT4, IT5), 4 Government officers (coded GOV1, GOV2, GOV3, GOV4), 4 NGO experts (coded NGO1, NGO2, NGO3, NGO4), 4 university teachers (UT1, UT2, UT2, UT4), 3 Doctors (DOC1, DOC2, DOC3), 4 Bankers (BM1, BM2, BM3, BM4), and 3 Marketing officers (MK1, MK2, MK3).

For each of the participants an interview appointment was made after the approval of the organizations and after the participants' agreement. The participants themselves selected the interview venues. These were typically the interviewee's office, lounge area or local tea stall. However, as suggested by Neuman (2003) the interview venues were carefully selected where privacy was afforded and where the interviewee was not pre-occupied. Female participants mainly preferred their own premises to take the interview. Only 4 participants preferred the restaurant or local tea stall. Participants were briefed about the research before starting the interview. He/she was given the background information about the research. A consent form that highlighted the research policy, interview recording

procedures, privacy of the participants and complaints was provided to the research participants. He/she was asked to read the consent form and encouraged to ask any question if he/she had any doubt.

Once the participants accepted to take part in the research and expressed their understanding, they were asked to sign the consent form. Then, the actual interview started. Neuman (2003) advises to spend some time with the participants before the interview started. This is particularly true in Bangladesh, where social conversation and interaction helps to build a rapport. These informal conversations make the participants easy and more understandable to the research. Typically the interview lasted for 40-50 minutes and the recordings were done in a Sony voice recorder. The researcher also noted any details such as body language, facial expression or concern that could be recorded on the voice recording. At the end of the interview, the participants were given the researchers' contact details and informed that they can contact the researchers. After each interview, the audio file was transferred in computer to maintain safety and security.

The interview responses were converted into text data using MS word 2003 software. The data were then entered into the statistical data package in NVIVO for coding. The purpose of coding is to classify answers to a question into meaningful categories and to analyze data so as to bring out their essential patterns.

### **Interview Results**

The interview participants of this research suggested the following ways to use mobile phone in governance, economic development, education, health, human resource and awareness development programs:

### **Good Governance**

#### ***Mobile Phone Based Public Services to Offer Good Governance***

SME owners SME2 and SME3, NGO officers NGO1, NGO3, University teacher UT1, Doctor DOC1 and the banker BM1 suggested the Bangladesh government should implement mobile phone based public services, which will assist the government to offer good governance of Vision2020. The NGO1 commented on this theme by saying:

*"Not all the SMEs are an informal business without documents. We have also formal businesses those required tax file declaration ends of the financial year, police clearance for business purpose and quotation submission for bidding purpose. It is true that government is attempting to offer all these public services through electronic systems of computer and internet. But the computer is very costly and internet is still not available."*

#### ***Good Governance by Controlling Unethical Behaviors of SMEs***

4 SME owners (SME1, SME2, SME3, and SME5) those were the interview participants raised, some businessmen do not operate business honestly in the rural areas. The participants therefore suggested that the government can establish good governance by controlling unethical behavior by mobile communication. On this theme, BM3 (a bank manager) indicated his reservations saying:

*"Usage of formalin in the fruits, vegetables and fish is common in Bangladesh that lurks in the fearful minds of shoppers at markets of this country now. Government can control easily the arbitrary usage of formalin to preserve perishable food items through regular communication with food growers and suppliers. As rural farmers and fishermen are the main grower and suppliers*



*of these foods and government can establish control at the root. The government can establish good governance by providing SMEs the information of the probable physical threats of formalin and the legal enforcement they may face"*

### **Economic Development**

#### ***Opportunity for Economic Development by Providing the Latest Information on Business Demand***

The participants SME5, GOV2, UT4, and BM2 informed that most of the cases, Bangladeshi rural SMEs do not have information on the latest product and business demands in the local and international market. The SME5 specialist commented on this particular point:

*"Bangladesh government provides subsidiary and special support to some businesses, such as currently frozen fish and leather goods are in high demand, so government provide special financial benefits to these businesses. However, I am sure most of the rural SMEs have never heard this information"*

The software engineer, IT3 suggested the government, developing agency and mobile phone stakeholders should take mobile phone adoption as an opportunity to improve SMEs knowledge on business demand:

*"Since mobile phone is the only technology in many villages, government can broadcast information regarding the business demands of the local and international markets. So SMEs, those are struggling with current business can switch to a fruitful business. I can say the show repairers are in danger and we can guide them towards some prospective businesses by communicating them through mobile phone SMS."*

#### ***The Opportunity to Link Rural SMEs to the Global Economy by Enabling them Partnership***

IT4 pointed that the mobile phone is an opportunity to link rural SMEs to the global economy by saying:

*"We have neighbor countries, where SMEs can conduct business; especially those are close to the borders. Government can forward the international buyers' information to the rural SMEs and rural SMEs can communicate with them. This will provide an exposure of rural SMEs at international level"*

#### ***Economic Development of Improved Rural-Urban SME Business***

Banking and money transfer is an obstacle to the rural-urban SME supply chain, as informed by the interviewees. However, the government should encourage mobile money transfer at SME level, which will improve rural-urban SME business chain. One IT executive noted to the author:

*"Money transfer in business is a problem in Bangladesh. However, since we have mobile banking, government should encourage SMEs to use the service. This will increase more business in rural areas, and increase economic development of the rural areas"*

#### ***Support SME Business by Accelerating Marketing***

The participants GOV1, GOV2, IT2, NGO1, and BM3 identified that mobile phone can accelerate SME business by providing a marketing opportunity to the rural SMEs. Mobile phones can expand their prospective customers, they suggest. GOV2 supported by his statements,

*"Mobile phone can be used a marketing tool for the SME products. Using mobile phone cameras, the owners can take simple photos of his products and broadcast his products in*

*the market. However Government should come forward in advocating rural SMEs how mobile phones can be used as a marketing tool."*

## **Health**

### **Mobile Phone Healthcare Services Can Increase SMEs' Organisation Efficiency and Sustainability**

The interview participants, the BM1, SMERE2 and NGO2 informed the researcher that mobile phone based health care services should be offered in Bangladesh, which will increase organisational efficiency and sustainability of the rural SME. The BM1 shared his experiences of how poor health impact on the sustainability:

*"I have seen a lot of businesses (SMEs) were closed down as the owners were continually ill and could not run the businesses. Some businesses involve frequent travels to the city for selling and collecting raw materials. For example, bamboo furniture producers need to travel Chittagong to collect raw materials. However, if the business owner cannot travel, the only option left is to close down the business. Therefore, we need to inform these SME owners, how health is important to their business"*

### **Mobile Phones for Monitoring Healthy Life**

As anticipated, the interviewees SME2, SMERE1 and IT4 raised that SME owners usually work long hours. They also informed that the concept of healthy life by taking balanced diet is not considered so important in the rural contexts of Bangladesh, because of lack of education and unawareness. However the doctor DOC2, suggested

*"Like many rural citizens in our country, SME owners are not much concerned with wellbeing. We can improve the situation.*

*Mobile phones can be used to manage their food consumption and monitor their caloric balance in relation their physical activity. Daily reminder messages can be sent to encourage healthier dietary and to self-monitor their food consumption and physical activity"*

### **Mobile Phones for Finding Suitable Doctors**

The SME 2 explained how business owners find it hard to search for doctors in the new cities:

*"As we travel various districts, in a new place it is very hard to find a doctor. We also do not know a suitable doctor for any problem. There is some voice based helpline, but they cannot answer whom should I go to."*

### **The IT researcher therefore suggests:**

*"We can establish a district based database for the doctors and physicians, if possible for each village. This will enable not only for the SME owners, but also all the citizens in finding suitable doctors."*

### **Mobile Phone for Informing and Alerting on Contagious Disease**

Mobile phones can alert SME owners on contagious diseases control in villages suggested by TE1 by saying:

*"The SME owners are always high risk due to their constant travel to the cities. Mobile phones can be used in an emergency reporting system for infectious disease and surveillance of the disease"*

## **Education**

### **Increasing Literacy and Technical Literacy of SME Owners/Managers and Facilitating IT Adoption**

The participant BM2 considered mobile phone as an opportunity to decrease

illiteracy and increase technical literacy among the rural SMEs. On this theme, BM3 (a bank manager) indicated his reservations saying:

*"No wonder, in Bangladesh, not all the SME owners are educated. However, the use of mobile phone is an opportunity for government and NGOs to educate rural citizens. Creating some interactive content, we can encourage them in increasing literacy and numeracy."*

#### **Providing Business Education to Rural SMEs**

The NGO2, IT2 & UT3 informed that in Bangladesh, most of the SME businesses are mainly the entrepreneur's personal initiatives. These SME owners may not have enough business skills, managerial capabilities to run the business, therefore businesses are sometimes not sustainable. NGO2 explained the situation by saying:

*"In my area I have seen a lot of SMEs closing down. I found some of these SMEs even started their business with the wrong products, as raw materials were not available or expensive. SME owner should start a business that supply of raw materials is available and that cheap. For example, some SMEs start sofas made of BET, which is costly comparing to Chittagong. So I say that training on business is must for these owners"*

However, the software engineer is convinced that mobile phones can be used in providing business education and thus could have a positive influence on the SMEs. The following quote from him gives a clear view of this:

*"We have to use the mobile phones to provide training to the rural SMEs. Mobile phones are already proven as a suitable training delivery platform. Bangladesh government should make suitable contents, SMS or voice-based trainings on business as*

*well as on the products, rural SMEs deal with. I will say SME foundation should come forward in the mobile based training development"*

In Bangladesh, huge numbers of SMEs are in the manufacturing industry of shoe, leather products, handicrafts and carpet. Training is very important for them. The NGO expert, NGO5 suggested that the government should educate these manufacturers on the design by saying:

*"Most enterprises use traditional techniques without the use of modern tools. After 2000, the sales of handicraft products decreased because of old design and poor quality. The narrow product range and lack of new and innovative designs that is suitable for overseas markets are also some constraints for handicraft products. Government can engage designers and provide design instruction to these manufacturers using mobile phones."*

#### **A Device that Facilitates Lifelong Learning**

The bank manager BM1 suggested that mobile phones should be used as lifelong training and development tool. On this theme he indicated his reservations saying:

*"SME owners' training should continue until they retire. They should be provided training on banking, export policy and government's policy on SME as these policy changes frequently. We should use the mobile phone as a tool for lifelong learning. However, we should educate the SMEs and develop a mechanism in this regard."*

#### **The Opportunity to Offer Provide a Platform of Collaborative Learning**

Collaborative learning is very important for the small cottage, handicraft and handloom industry, especially those manufacturing in the villages, as informed by a handicraft manufacturer (SME2), an NGO expert

(NGO2) and a university teacher of fine arts (UT1). A marketing personnel, who collects order from the city based handicraft and cottage shops explained how mobile phones can enable the stakeholders in collaborative learning by saying:

*“Our products are mainly sold through the city based shops. The owner and sellers in the city have better knowledge of latest design perspectives, as they interact more with the customers than us. However, it is important for the rural manufacturers to deliver the design as expected and guided by the shops and sellers in the city. Now I can capture a photo when shop owner shows me an example of his demand and record what he explains. When I am back in the village, I can show rural SME the design that I collected from city.”*

### **Human Resource Development**

#### ***Improve SME Owners’ Capabilities by Transforming them to the Knowledge Economy***

The mobile phones can increase SMEs capability by providing various knowledge, informed by SME1, BM2, IT4, DOC2. On this theme, a participant SME1 (an established SME owner) indicated his reservations saying:

*“I had to do only those businesses, which were available in my. Since I started using mobile phone, my business contacts increased. I get various business offers from my contacts. I get information on prospective businesses, latest opportunities from my contacts. This knowledge helps me a lot in my business.”*

Another SME owner (SME1), who trades on seasonal products such as vegetables, rice crops, added to the above perspective by saying how the mobile phones have transformed the SME business:

*“Before using mobile phone, I had to start a business without knowing much about the profits. Let's give an example, now businessmen like me know what will be the rate of cooking oil at the time of Eid or the price of the Tomato at the end of the winter session. I get this information from the city based businessmen; those have more sources of information. Knowing the predictive future price, I decide if I will stock, onion or start cooking oil selling. Now I can make a call to a friend and discuss the feasibility of the business.”*

#### ***Provide Opportunity for Capacity Building***

One participant, UNI 2 emphasized to use mobile phones for capacity building of the young entrepreneurs, which will assist the government in archiving Vision2020 goals. He made his comments on this particular point by saying:

*“I know a shoemaker who uses watch designs on the YouTube. He is an exceptional proactive businessman. However, government and development agencies can take a comprehensive plan for capacity building of the SME business by this kind of innovative use of mobile phones.”*

#### ***Improve Coordination and Managerial Control***

Some SME owners do not live in villages, they operate their business (located in the village) from the city or the town. These SME owners inform that mobile phone adoption has increased human resource management of their businesses. The SME owner 3, who is a brick manufacturer and a resident of the city, points by saying:

*“Before it was very hard for me to manage my brick field living in the city, half day I was in the city for marketing, collecting money and banking, rest of the day I had to run to the village, to see if everything was running as expected. Now, I can instruct the manager*

whole day routine before the working hour starts, get updates when necessary and coordinates employees of the city. Even in an emergency, workers can call me to seek instructions.”

### **Empowerment**

#### ***Empowering Rural SMEs against the Poor Public Service***

The SME3 shared his view on how the mobile phone has empowered rural SME owners. He commented:

*“The mobile phones have given us some power. As a businessman, I have to go to the Police station, banks and government offices. Before, (introduction of mobile phone) we could not complain or inform anyone in the case of inefficient, improper services, or even in the case of bribery. However, now we have a say, we can quickly communicate to the higher authorities and inform the situation and raise our questions. The impact is the offender is always in fear cause information can pass very quickly.”*

#### ***Empowering Rural SMEs by Providing Access to Market Information and Trade Opportunities***

The bank manager BM2 informed that mobile phones empower SMEs, by reducing information asymmetries and providing market information and trade opportunities. He commented on this topic:

*“Now-a-days, you cannot buy fish in the village as we used to buy before. Now the fishermen now call the wholesalers and settle their trade with city based wholesalers. The use of mobile phones by SMEs has resulted in empowering them through the increased bargaining power, knowledge about market opportunities.”*

#### ***Empower Rural SMEs against Natural Disaster***

Mobile phones can empower rural SMEs in the situation of natural disaster by providing early warning. In this regard, one of the NGO expert suggests,

*“The fishermen, farmers and SMEs, that stock, rice, crops, maize always need an early warning of flood, drought and cyclone. Mobile phones can also empower the fishermen in the rural context by providing information on the sea conditions, the farmers by informing the drought information”*

However, an IT officer (IT3), workings as a programmer suggest:

*“We should create a native weather application (in local language) and based on the requirements of SME. Simply we can connect to the server of the Bangladesh Weather board, and the information can be delivered in the picture, graph or warning sign for a better outcome.”*

#### ***Empowering SMEs by Connecting to the World through Digital Media, Social Networks and Online Collaboration***

An SME owner informed, he feels empowered as mobile phone provides a global connection by Facebook:

*“I have a smartphone and I can access Facebook. I can post a picture and a message which can be viewed anywhere from the world. It is amazing that living in the village I know the world news using mobile phones”*

### **Discussions**

The interview data have broadened our understanding on how mobile phones can play a role in achieving Vision2020. The interview participants suggested some prospective use of mobile phones as a distribution channel of programs

undertaken by the government, NGOs and donor organizations in regards to- good governance, economic improvement, poverty eradication, promotion of education, and the provision of health, human resource development and awareness increments.

First of all, this research suggests that mobile phones can be used to create an informative and connected society, which is a prerequisite of good governance. This research suggests that mobile phones can establish good governance by offering public services and by controlling unethical behaviors of SMEs. Prior studies also suggest to use mobile phones for good governance (Aker& Mbiti 2010, Hellström 2011; Ojo et al. 2013). The findings of this research accord Mitullah and Kamau (2013), which suggest citizens' freedom of speech decrease levels of corruption and increase government's performance in establishing a democratic and transparent government. However, the usage of mobile phones in establishing good governance by controlling unethical behavior of SMEs has been overlooked by the previous studies.

The key opportunities of mobile phones for the rural SMEs health improvement, as identified in this research, can be summed up as follows: control of the communicable diseases by increasing awareness, improvement of SME work conditions by monitoring food and nutrition information, connecting to the city based health and medical services; those are unavailable in the rural areas. Food and nutrition is very important for SMEs, as they need to be healthy and active (Croucher et al. 2013). This research suggests, a major goal of Vision2020 to meet the food and nutrition can be achieved by providing mobile based food and nutrition information for healthy life through apps. Opportunities of increasing efficiency and sustainability of SME by improving the health of the owners and workers, improving the SME environment and the SME society are

overlooked in previous studies on mobile phones. However, the findings of this research support Johnson (2011), who recommended better health provides organizational benefits including increased performance, staff morale and productivity. Another very important finding of this research in supporting SMEs health by mobile phone usage, is connecting rural SMEs to city based better health and medical services, also consistent with studies by Rotberg & Aker, 2013. Mobile phone communication via voice, SMS and MMS can also support desirable health improvements informing and alerting on contagious diseases, as suggested by Lester et al., 2010.

Poverty alleviation and economic development are central Vision2020 in Bangladesh, and this research has empirically established that mobile phones can develop SMEs' economy by increasing prospective customers, by providing real time information on business and market demands, improving rural-urban business transaction by mobile money transfer and by linking rural SMEs to the global economy for partnership. The findings are consistent with those studies that suggested that mobile phone has the potential to improve the economy in developing countries (Aker at al. 2010, Dannenberg & Lakes 2013, Ukpere et al. 2014, West 2012).

There is a growing concern that Bangladeshi SMEs due to lack of education are facing serious constraints of selling their products (Chowdhury et al. 2013, Khan et al. 2012). This research also finds illiteracy, low level of education and lack of knowledge as some of the obstacles of rural SMEs, which is similar to Chowdhury et al. (2013), Khan et al. (2012). However, mobile phones are an opportunity for the government, NGOs, and donor organizations to increase literacy of rural SMEs and to provide business education on entrepreneurship skills, business skills, and

banking. The notion of literacy and educational improvement is also supported by previous studies on mobile phones, such as Semali & Asino (2014). However, most of the studies focus on the entire population of the country, but this study solely considers SME workers and owners providing insight to the business practices and social norms. Other contributions of this research are positioning the mobile phone as a device for business development by training of business skills and the capabilities of mobile phones for collaborative learning and a platform of lifelong continuous improvements are hardly suggested by previous studies.

Following the trend of mobile phones for educational improvement, this research also identified mobile phones as suitable tools for human resource development for SMEs. This study identified that mobile phones can accelerate the journey of the Bangladeshi government toward the Vision2020 by improving SMEs owners/worker's capabilities. Mobile phones can develop the rural SME human resource by transforming rural SMEs to the knowledge economy, by building SMEs capacity on production, by improving the coordination and managerial control. Recently, Denkinger et al. (2013), Muhanguzi and Kyobe (2013) suggested mobile phone use for human resource improvement. Perhaps more appropriately consistent with Muhanguzi and Kyobe (2013) study, that suggests mobile phones can align in SMEs' work practices, which will improve the performance of the SME.

Lastly, this research identified that mobile phones can empower SMEs by connecting to the information, society and country, and by providing access to market information and by linking to the outer world through digital media, social networks and online collaboration. Moreover, the mobile phone can empower rural SMEs by providing early warnings of natural disasters such as cyclone, flood and

drought. However, most of the mobile phone research on empowerment concentrates on women in developing countries (Roy 2013). However, this research sheds light on mobile phones' capability on rural SME empowerment, which will provide more insight into Vision2020 goals.

### **Conclusion**

Effective utilization of sophisticated mobile phone solutions for SMEs has great impact on SMEs' competitiveness. This study contributes significantly to the theoretical understanding of the socioeconomic development impact of mobile phones, which is a major contribution of this research to the existing knowledge of mobile phone use. From the practical perspective, this research is being undertaken at the right time as it is expected to support the national policies undertaken in Bangladesh regarding Vision2020.

Since mobile phone based services were not implemented when the research was conducted, the lack of previous practical knowledge of the interviewees is the main limitation in the study. Another limitation, all the data were the participants' own beliefs and perceptions of experiences. Therefore, the data are perceptions, not facts (Leedy & Ormrod). However, to generate a valid result, this research included confirmatory questions to seek confirmation of conflicting facts. Lastly, one can criticize the number of interview participants, however, in our defense, we might point that interviewing 32 participants was possible within the timeframe of the research.

The study of mobile phones' role in achieving Vision2020 goals for rural SMEs in Bangladesh has provided some basis for future research. Firstly, the opportunities and possibilities identified in this research need to be tested in Bangladesh. The

enabling roles are the interviewees' perceptions, therefore the opportunities should be quantitatively tested. Future research should collect data to analyze the customer perspective, organizational perspective and country-level factors that could play as barriers. This will enable us to understand more m-banking adoption. Lastly, future research should extend mobile phones' impact on the city based SMEs or to the SMEs with closer location of capital to throw some interesting insight on m-banking.

The merit of the research lies in presenting, for the first time, mobile phones as an enabler of achieving socioeconomic development agendas articulated in vision2020. Moreover, this research explores various socioeconomic obstacles of the rural SMEs. The privileged position of the rural SME owners/managers' use of mobile phones is a great opportunity for offering mobile based services on governance, education, health, and human capacity. Therefore, the research findings of this study not only address the call by the government for vision2020 but also enhance our understanding of mobile phones' capability. Compared to other research on mobile phones for economic development, this research is based on the demand side from SMEs, and supply side consists of government officers, NGO experts, mobile experts, software developers, bankers, and university teachers- and findings are from controlled face-to-face interviews. Furthermore, the study sets a starting point for future research to further explore the enabling role of mobile phones. The contribution is significant, a step forward in mobile phone research in Bangladesh.

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