



Potentiality on e-commerce in the rural community of Bangladesh

F Islam^{1, 2*}, MMH Kazal¹, MH Rahman²

¹Faculty of Agribusiness Management, Sher-e-Bangla Agricultural University, Dhaka 1207, Bangladesh

²Faculty of Agriculture, Tokyo University of Agriculture and Technology, Fuchu-Tokyo 183-8509, Japan

Abstract

Bangladesh is a least developed country where a large number of population in rural areas live under substantial poverty. Recently, a phenomenal growth has witnessed in accessing mobile phone and internet which showing a new way for trade and commerce (e-commerce). But it is a big challenge to establish and provide the facilities of e-commerce to the majority population live in rural areas. This study explores the potential role of e-commerce in promoting sustainable and equitable development in rural areas. We discuss the possibilities of using e-commerce technology in a way that will benefit the rural communities. The growth of mobile and internet users, the digital divide between rural and urban population, problems related with dispersing the service of e-commerce in rural areas and future prospects are presented. There are a number of challenges but however, recently introduced community e-centers has a good potential which can provide the services of e-commerce in rural areas. In addition, to support low-income rural population, there is a need for governmental funding for expansion and development of rural infrastructure. This study might be helpful for the policy makers to implement the appropriate development strategy for reducing poverty and betterment of living standard in rural areas.

Key words: E-commerce, rural area, poverty reduction, digital divide and community e-center

Progressive Agriculturists. All rights reserve

*Corresponding Author: s163138w@st.go.tuat.ac.jp

Introduction

E-commerce has become an effective mean of trade and commerce which is suggested as a new driving force for the economic growth in developing countries (Swatman, 1996; Humphrey *et al.*, 2003). In Bangladesh, E-Commerce started in late 90s but growth was slow because there was no system for electronic money transaction (BBS, 2013b). In addition, high cost of internet and low penetration meant that few people knew about it in that time. The real change came in 2009 when Bangladesh Bank allowed online transaction in the country thus, officially opening up the e-commerce sector. Compared to other countries, Bangladesh is a late entrant in e-commerce. But tremendous growth observed in this sector within a short period which has created a new way of communication. The challenges related with e-commerce in a developing country like Bangladesh are different from those in

developed countries. Thus, a number of recent studies have shown their interest on illustrating the present situation, constraints and future prospects of e-commerce in Bangladesh (Bhowmik and Daoyi, 2012; Hossain *et al.*, 2013; Mohiuddin, 2014; Islam, 2015).

E-commerce has enabled the development to take place by bringing about greater access to information and expertise, increasing competitiveness and access to new markets, administrative efficiencies through e-government, learning and labor productivity which lead to poverty reduction (Qureshi, 2005; Qureshi and Davis, 2006, 2007). In Bangladesh, almost two third (66%) of the total population live in rural areas (World Bank, 2014). It has been shown that rural areas are less developed and poverty rate is high (36%) in rural areas (BBS, 2010). Most of the rural inhabitants (85%) are directly or indirectly engaged

with agricultural activities and their economic condition is not satisfactory (BBS, 2013a). The main reason behind this is that various problems faced by rural population in agricultural products marketing (Abdullah and Hossain, 2013). They have limited access of market and always depend on the local market for selling and buying agricultural and other products. On the other hand, e-commerce enables the wide market access for all within a short duration which is one of the most important factors for economic growth. Recently, Bangladesh is enlisted as lower middle income country. To increase the national economy, it is essential to gear up the contribution of GDP from rural community through using efficient way for trading and commerce such as e-commerce which will ultimately reduce the poverty.

The beginning of the internet and communication technology made our life easy and comfortable. More specifically, internet and mobile phone provide the infrastructural support for dispersing various services of e-commerce among a large number of populations within short time (Hossain *et al.*, 2013; Islam, 2015). Therefore, it is in high importance that to connect rural people with e-commerce to get the more benefit in doing business electronically. Government and non-government organizations (NGOs) have taken a variety of programs and initiatives to disseminate information and communication technology (ICT) for development of rural areas and reducing poverty. But the practice of doing business electronically, dealing with non-cash payments and electronic-based intra and inter-business relations all of which are important in e-commerce are not common in developing countries especially in rural areas (Lawrence and Tar, 2010). Therefore, it is important to understand the present situation and problems of e-commerce for implementing in rural areas which will be easily accessible for all. The objectives of the study are to study the present status of e-commerce, digital divide between rural and urban community and clarify any improvement as required for dispersing the services of e-commerce in Bangladesh.

Materials and Methods

The study is based on secondary information. The various services of e-commerce started in Bangladesh recently. Thus the available information is limited and it is difficult to find publications that only highlight e-commerce practices in Bangladesh. For having a better understanding, we collected the information from international and domestic research articles, different recognized census, periodicals and newspapers. Besides this, internet has been used as another source of information. The main attempt of this study is to summarize the literature about e-commerce and its implementation in rural areas.

Result and Discussion

The infrastructural development plays a crucial role in dispersing the service of e-commerce. Internet, computer and mobile phone are some of the essential tools which are required to access of various services of e-commerce. The internet, information and communication technologies (ICTs) and growth of e-commerce has created enormous influence on services, market structure, competition and restructuring of industry and markets. These changes are transforming all areas of society, work, business and government (Sharma, 2003).

A number of earlier studies suggested that access to networks, hardware, software, and telecommunications infrastructure was the main factor that prevented emerging economies from accessing information and expertise (Lund and McGuire, 2005; Wresch and Fraser, 2005). Additional common factors mentioned site development and hosting, visibility on search engines, logistics, and banking and security (Wresch and Fraser, 2005). Lund and McGuire (2005) used three indicators such as access to personal computers (PCs), telephone usage and the average cost of a local telephone call to discuss the participation and infrastructural significance of e-commerce. Their evidence suggests that less than 10% of the population and far fewer in least developed countries could be ready for the participation phase of e-commerce.

Laisuzzaman *et al.* (2010) described that e-commerce is one of those sectors which need more attention in Bangladesh. In last few years, the mobile and

internet usage in Bangladesh has increased dramatically (Figure 1).

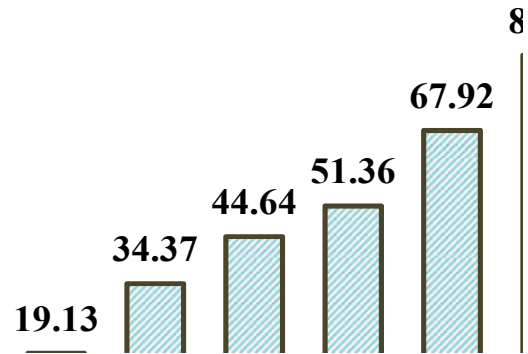


Figure 1. Mobile phone subscribers in Bangladesh from 2000 to 2014 (Source: ITU, ICT statistics, 2016)

Mobile network covers almost all the rural and remote areas of Bangladesh. At present the number of mobile phone subscriber were 121.8 million while total number of active inter user were 61.2 million (BTRC, 2016). The most of the internet subscribers use internet through mobile phone. Recently a various services of e-commerce are available and gain enormous popularity. The familiar and common e-commerce applications in Bangladesh are: online shopping, electronic mail or E-mail, online banking, outsourcing activities, electronic tickets, teleconferencing, domestic and international payment systems, instant messaging, online office suites etc.

These services of e-commerce create new scopes for individuals and small and medium entrepreneurs (SME) in doing business electronically. In addition, it also opens the opportunity for all to get the services at door step.

Digital divide between rural and urban areas of Bangladesh

The term digital divide means a lack of equal access to smart technologies such as computer and the internet in particular, creating a gap between those who have and those who have not (Sharma, 2003; De

Munster, 2004). In Bangladesh, the services of e-commerce are limited among the urban community therefore; as a result, to adapt the main stream of e-commerce application is far-far away. The poor population in rural areas cannot afford high cost for internet and modern ICT facilities.

The shortage in ICT facilities and skills at different categories at its population are the major problems for dispersing e-commerce (Shuva and Akter, 2011). The BBS (2013b) survey report showed that the penetration of mobile phone user was high in both in rural and urban areas. But computer and internet users are limited in rural areas (Figure 2). Moreover, in rural areas, very often they browse internet through mobile (Figure 3). The report clearly indicated that the rural communities are far behind in the use of internet which is one of the fundamental components for getting the services of e-commerce. There are a number of factors that make it difficult for people to obtain access to the internet in rural areas. These include things such as poverty, high price of the device, data and telecommunications charges, infrastructure barriers, digital literacy challenges and policy and operational barriers. Therefore, it is still a long way to go in bridging the

access gap to smart technologies between rural and urban areas.

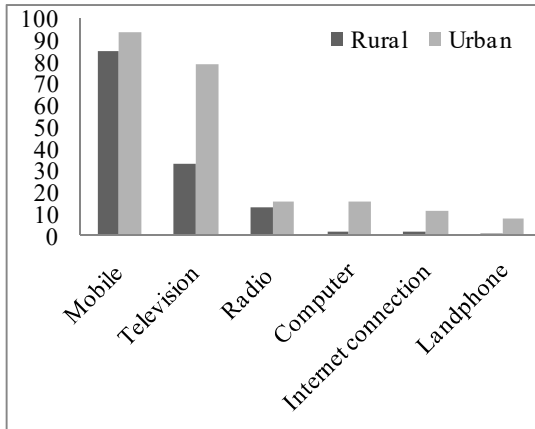


Figure 2. Access to the smart technologies in rural and urban areas by households (Source: BBS, 2013b)

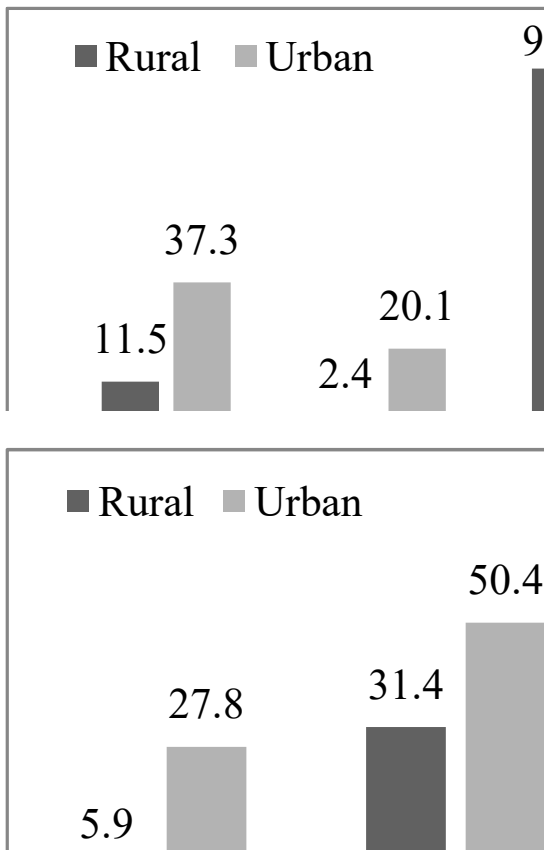


Figure 3. (a) Types of internet connections and (b) frequency of internet use in rural and urban areas (BBS, 2013b)

Effects of individual and social factors on the use of e-commerce

E-commerce is a part of human communication and social system, therefore, social variables should come into consideration (Safavi, 2009). Several socio-demographic, cultural and other social factors significantly influence the adoption of e-commerce.

The inequality between the rural-urban population in terms of per capita income, consumption, education, health facilities and physical infrastructure is an important developmental issue in Bangladesh. Rogers (2003) stated that the adopter of a smart new technology is typically younger, has a good income and appropriate level of education and more reactive to new innovation than the non-adopter. Rogers (2003) also indicates that demographic attributes and economic status (income) is highly correlated to initial adoption. Choudrie and Dwivedi (2005) confirmed that the economic status for individuals influences their ability to own and then use a technology. Dickson (2000) suggests that income and education levels are especially relevant in explaining the use of Internet services and other technological devices for instance, the adoption of home Internet services involves several costs, both in terms of the financial resources and skills needed for the use of new technologies. Burke (2002) suggests that education is positively related to an individual’s level of internet literacy. People who buy financial services over the internet have higher incomes and greater ICT use than those who do not. This means therefore that income and educational level have a positive relationship with the adoption and use of e-commerce services.

In Bangladesh, e-commerce has significant impact on societies and businesses (Hossain *et al.*, 2013). It was reported that the services of e-commerce has a bright future perspective even though there is positive and negative opinion among local people (Parvin *et al.*, 2007). There are gaps in the adoption of digital technologies among different social groups and firms, depending on income levels, education, gender, and ethnic groups and for firms, depending on industry structure, business size (large firms versus SMEs) and location (Sharma, 2003).

According to BBS (2013b) a large number of computer and internet user were highly educated while the access of computer and internet was limited among less educated population (Figure 4). These results indicating that education might be one of the most important limiting factors for the use of

internet and e-commerce sectors in Bangladesh. In addition, most of the highly educated population lives in urban areas (BBS, 2010). Kasem and Shamima (2014) reported that the frequency of internet use was high among highly educated urban population.

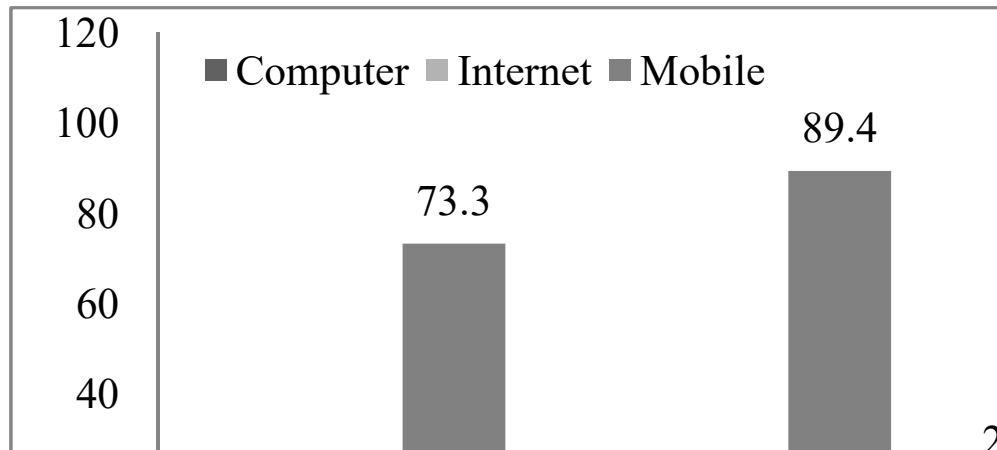


Figure 4. Distribution of computer and internet use by education (BBS, 2013b)

Effects of information and communication technologies (ICTs) on e-commerce

The flow of information from and to the rural communities is an essential pre-condition for the development of rural Bangladesh towards eradication of widespread poverty. There was a significant relation exist between ICT and e-commerce (Liu *et al.*, 2010). In developing economics, access to accurate market information can be limited by poor, underdeveloped, or even absent infrastructure. Countries are poor partly because markets do not work well and partly because of information problems. Isolated and poorly informed farmers, traders and business people cannot participate in commercial exchanges and even when they tend to have limited bargaining power (Jensen, 2007).

In Bangladesh, the internet browsing speed is not so fast but it has developed significantly in the recent past. The Government of Bangladesh and a significant number of non-government organizations (NGOs) are working to improve the socioeconomic conditions of rural poor by means of rural population transformation through a variety of programs (Islam and Mia, 2007). Uddin and Islam (2005) observed that the multifarious projections of ICT in human life

plead a wining case for institutional integration of ICT related components in rural support programs taken by Governments and NGOs. Ali *et al.* (2004) observed that maximize E-commerce efforts to focus on information dissemination, knowledge transfer, and technical assistance is required.

The recent development of ICT is greatly facilitating the flow of information and knowledge, beyond the border of social and economic status. It also revealed that poverty reduction cannot happen in an information-deprived environment. For example, earlier farmers living in the rural areas of Bangladesh, had no access to market information and they were always deprived by the local middlemen who manipulate the prices of agricultural products, but recently the Grameen Phone service bridged the information gap at a limited scale to get better price by collecting market information from different adjacent areas. The contribution of agriculture in the economy of Bangladesh is still highest even with its old technology and ICT can directly contribute in commercialization and increasing value added services within the sector which ultimately tends to empower the rural communities. Therefore, it is stated that poverty reduction is possible only in an

environment where public and particularly the poor have information on the issues that affect their lives. Bangladesh has experienced a very successful model of connecting rural people through mobile phone service. Grameen Phone made the achievement of ensuring communication facility for the rural Bangladesh through its mobile phone network. The initial connectivity had already been established for communication and now need is to expand services towards dissemination of relevant development and business services.

Market access problems in rural areas and e-commerce

Improved access to markets is an important element of rural development and poverty alleviation. There exists a high correlation between market access and poverty incidence in Bangladesh. Rural households have diverse livelihood strategies, for most, agriculture is the key income source. However, many are also engaged in non-agricultural activities, including microenterprises (agro-processing, trading and other off-farm occupations). Interacting with agricultural markets is thus an important aspect of the livelihood strategies of many rural households.

Markets are where, as producers, they buy their agricultural inputs and sell their products and where as consumers, they use their income from the sale of crops or from their non-agricultural activities to buy their food requirements and consumption goods. Virtually all households in rural areas are by preference both producers and consumers, buyers and sellers and many sell agricultural produce and buy their food at different times of year. Therefore, it is of importance to all rural households and assisting rural poor people in improving their access to markets must be a critical element of any strategy to enable them to enhance their food security and increase their incomes.

Less improved marketing channel for agricultural products is one of the major barriers in achieving the millennium development goal. Matin *et al.* (2008) stated that if the farmers' sell their agricultural products direct to the ultimate consumers then they will get more benefits, but it would not be possible because intermediaries were engaged to transfer of agricultural products from the farmer's field to

distant consumers. In addition, most of the agricultural products are sold at the local rural Haats (market place). This means that farmers may not get good price for the products as there is limited demand for the products in the local market which implies a low turnover, resulting in low income for the producer. Due to low income of rural population necessary steps cannot be made for improving the marketing system for agricultural products (Sultana, 2012).

In several studies, it was proposed that e-shop or online shop in Bangladesh (a platform of e-commerce for buying and selling of products) can be a boost if all the participants of the country join in internet based business. There is a lot of differences between the online marketing and traditional marketing because online marketing provides one to one communication on the other hand traditional marketing is done through one to much communication system (Johnson *et al.*, 2001; Armstrong and Kotler, 2009). As it is mentioned earlier that online shopping provides lots of advantage, among these two prominent advantages are large product variety and availability of many supplier, thus due to high competition price is cheap compared with local market (Brassington and Pettitt, 2000). However, even though there are many advantages of e-shop but it is still difficult to promote the e-business in rural areas due to lack of infrastructural development.

Community e-center: a tool for empowerment of rural population

Community e-center (CeC) was established for connecting and facilitating pro-poor services at the doorstep of rural community especially for the least served group. Many governmental, national and international organizations such as UNDP and ADB have initiated a number of projects to promote setting up CeCs in rural areas.

Community e-centres (CeC) are providing the ICT access facilities having computers, internet and other affiliated equipment for community access free or at affordable prices. Having the above in consideration, apart from privately owned 3000 (approximately) Telecenters or CeCs, there are more than 4000 Union

Information Service Centers in operation mainly to offer services like internet connectivity for the community population, ICT training, agro-based information service, photocopy service, digital photography, printing out government forms, telemedicine, courier service, mobile payment, accessing government and private organizations information. Organizations like DNet, international rice research institute (IRRI) and Bangladesh agriculture research institute (BARI) have already developed a lot of useful content for the rural community. However, a survey report of ADB showed poverty is still a significant barrier, which restricts community in taking the benefits of CeCs. The cost of CeC services is still too high, especially for women, students and the unemployed.

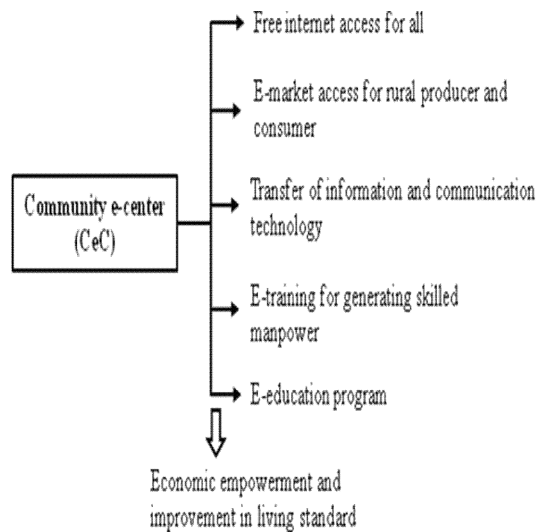


Figure 5. Role of community e-center for poverty alleviation and rural development

The access of market information provides the opportunity to take the appropriate decisions on the strength of current situation. CeCs broaden the market access for the rural community and farmers or SMEs or consumer can obtain a listing of price for any commodity sold at nearby markets. However, in addition to the market information provided by the CeCs, if these CeCs introduce the online buying and selling facility through E-shop, the CeCs may be more effective tool for economic development and poverty reduction. In the following diagram, we simply demonstrate the facilities should provide the

CeCs in rural areas for economic empowerment. However, further research is needed to develop a more precise and convenient way for connecting rural community with e-commerce.

Conclusion

Recently Bangladesh has adopted 3G technologies in internet which will create a new era in e-commerce. From the experiences of other developing countries, Bangladesh can learn a great deal in order to achieve the “Digital Bangladesh” where every person will use internet for their day to day work.

The theoretical contribution of this paper is to explain the ‘How’ e-commerce will contribute in poverty reduction in rural areas. The above discussion indicates that information and communication technology has been creating an efficient and competitive platform for e-commerce. The community e-center should be an excellent way to provide the services of e-commerce in rural areas. However, to overcome various social, economic and infrastructural issues, the government should take more effective strategy to deal with these factors.

References

Abdullah M, Hossain MR (2013). A new cooperative marketing strategy for agricultural products in Bangladesh. *World Review of Business Research*, 3: 130-144.

Ali M, Mahboob M, Chowdhury S, Yasmeen F (2004). E-business in the globalized world with special references to Bangladesh: an analysis. *Business Review*, 4 (1&2).

Armstrong G, Kotler P (2009). *Marketing: an Introduction* (9th ed.), Pearson Prentice Hall, New Jersey.

BBS (2010). Bangladesh poverty maps (Zilla and Upazila). Bangladesh Bureau of Statistics, Ministry of Agriculture, Government of the People Republic of Bangladesh.

BBS (2013a). Labor force survey report. Bangladesh Bureau of Statistics, Ministry of Agriculture, Government of the People Republic of Bangladesh.

BBS (2013b). ICT use and access by individuals and households survey report. Bangladesh Bureau of

- Statistics, Ministry of Agriculture, Government of the People Republic of Bangladesh.
- Bhowmik R, Daoyi S (2012). The Present E-commerce Situation in Bangladesh for B2C E-Commerce. *International Journal of Economics and Research*, 3: 77-91.
- Brassington F, Pettitt P (2000). Sales promotion in: principles of marketing. *Financial Times/Prentice-Hall*, Harlow. pp. 642-685.
- BTRC (2016). Internet subscriber in Bangladesh March 2016. Bangladesh Telecommunication Regulatory Commission Database. Retrived from, <http://www.btrc.gov.bd/>
- Burke RR (2002). Technology and the Customer Interface What consumers want in the Physical and Virtual store. *Journal of the Academy of Marketing Science*, 30: 411-432.
- Choudrie J, Dwivedi YK (2005). Investigating the research approaches for examining technology adoption issues. *Journal of Research Practice*, 1: 1-12.
- Dickson PR (2000). Understanding the trade winds: the global evolution of production, consumption and the internet. *Journal of Consumer Research*, 27: 115-122.
- Hossain MA, Ali MA, Kibria MG, Bhuiyan MN (2013). A Survey of E-Commerce of Bangladesh. *International Journal of Science and Research (IJSR)*, 2: 150-158.
- Humphrey J, Mansell R, Paré D, Schmitz H (2003). Reality of e-commerce with developing countries. London School of Economics, London, UK.
- Islam SM (2015). E-Commerce: its status and impact on business in Bangladesh. *Scholar Journal of Business and Social Science*, 1: 65-72.
- ITU (2016). ICT use statistics: mobile and cellular subscription. Retrived from www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.
- Jensen R (2007). The digital divide: Information (technology), market performance, and welfare in the South Indian sheries sector. *Quarterly Journal of Economics*, 122: 879 -924.
- Johnson MD, Gustafsson A, Andreasson TW, Lervik L, Cha J (2001). The evolution and future of national customer satisfaction index models. *Journal of Economic Psychology*, 22: 217-245.
- Kasem N, Shamima N (2014). An assessment of the factors affecting the consumer satisfaction on online purchase in Dhaka City, Bangladesh. *European Journal of Business and Management*, 6: 11-24.
- Lawrence JE, Tar UA (2010). Barriers to e-commerce in developing countries. *Information, society and justice journal*, 3: 23-35.
- Liu Y, Han S, Li H (2010). Understanding the factors driving m-learning adoption: a literature review. *Campus-Wide Information Systems*, 27: 210-226.
- Lund MJF, McGuire S (2005). Institutions and development: Electronic commerce and economic growth, *Organization Studies*. pp: 12-26.
- Matin MA, Baset MA, Alam QM, Karim MR, Hasan MR (2008). Mango marketing system in selected area of Bangladesh. *Journal of Agricultural Research*, 33: 427-438.
- Parvin I, Azim A, Sultana FN (2007). Information communication technology in rural development of Bangladesh. *The Journal of Rural development*, 35: 61-88.
- Qureshi S, Davis A (2006). The Effect of Ecommerce on Development. Proceedings of the 12th Americas Conference on Information Systems.
- Qureshi S, Davis A (2007). Overcoming the digital divide through electronic commerce: harnessing opportunities in IT for Development. Proceedings of the 40th Hawaii International Conference on System Sciences. pp: 68-68.
- Qureshi S (2005). How does information technology effect Development? Integrating Theory and practice into a process model. Proceedings of the 11th Americas Conference on Information Systems. pp: 500-509.
- Rogers EM (2003). Diffusion of innovations. New York, London: Free Press.
- Safavi R (2009). Human/social factors influencing usability of e-commerce websites and systems. In Application of Information and Communication Technologies. AICT 2009. *International Conference on IEEE*. pp: 1-5.
- Sharma SK, Gupta JN (2003). Socio-economic influences of e-commerce adoption. *Journal of*

- Global Information Technology Management*, 6: 3-21.
- Sultana A (2012). Rice marketing in Bangladesh: from the perspective of village study at Cox's Bazar district. *African Journal of Agricultural Research*, 7: 5995 -6004.
- Swatman PMC (1996). Electronic Commerce: Origins and Future Directions, 1st Australian DAMA Conference, Melbourne, Australia.
- Uddin K, Islam S. (2005). Contribution of information and communication technology to the development of rural Bangladesh. *Dhaka University Journal of Business Studies*, 2.
- World Bank (2014). World development indicators. Rural population (% of total population Bangladesh) data. Washington DC, USA.
- Wresch W, Fraser S (2005). IT foundations for e-commerce: a survey of executive in five Caribbean countries. Proceedings of the 11th Americas Conference on Information Systems. pp: 484-490.