

Rural Women in Information Communication System: Problems and Prospects in View of Digital Bangladesh.

Md. Abdur Rashid*, Abdullah Abusayed Khan**
and Md. Ferdush Rahman***

“Digital Bangladesh-2021” hawks the national policy for its successful implementation. This is an endeavor refers efficient and effective use of modern ICT in all spheres of the society with a view to establishing good governance. Almost 50% of the total populations are women in our country. Chronologically, three-fourth of the total women are from rural settings. The present study made an effort to determine the present status of access to ICT by the rural women. For this purpose few selected villages were taken with representative sample through interview by pre-tested schedule and PRA methods. The study reveals that access to ICT by the rural women was positively associated with the factor of empowerment, monthly income of the household and level of education in particular. Majority of rural women were keeping away from the mainstreaming digital network where about 62% have no concepts about internet and 91% respondents never used computer. Reasonably the present exercise envisages to highlights the inadequacies of earlier researches and tries to fill the gap in the field of database scientific information in considering the digital reality particularly in rural Bangladesh.

Field of Research: Rural Women , ICT, Digital Bagladesh

1. Introduction

Expressions such as ‘The fifty percent, ‘the other half’ have been used to describe the female population of Bangladesh. But numerical speaking, these expressions are most appropriate for the rural Bangladesh. According to census 2001 men preponderates women in the ratio of 105 but the sex ratio is 123.1 and 140.29 in the metropolitan areas and municipalities respectively. In the rest of the country which represent the rural Bangladesh the ratio is around 103.6. The unadjusted total female population of 59.96 million in the 2001 census. 46.79 million live outside the metropolitan and municipal areas. Thus rural women have the right to crash into every sort of activity by the sheer weight of number. Unfortunately women could not acquire as much weight in technology as in number. The flow of information from and to the rural women is an essential precondition for the development of rural areas. The recent development of information communication technologies (ICT) greatly facilitates the flow of information. ICTs are now widely recognized as a critical tool to tackle development issues in developing countries like Bangladesh. The revolutionary potential of new ICTs lies in their capacities to instantaneously connect

*Md. Abdur Rashid, Assistant Professor, Dept. of Social Science & Language, Hajee Mohammad Danesh Science and Technology University, Bangladesh, palash_sociology@yahoo.co.in

**Dr. Abdullah Abusayed Khan, Assistant Professor, Sociology Discipline, Khulna University, Bangladesh, khanbdnks@yahoo.com

***Md. Ferdush Rahman, Assistant Professor, Dept. of Business Administration, Begum Rokeya University, Bangladesh, ferdushhstu@yahoo.com

vast networks of individuals and organizations across great geographic distances at very little cost. As such, ICTs have been key enablers of globalization, facilitating worldwide flows of information, capital, ideas, people and product. They have transformed business, markets and knowledge sharing, empowered women and communities. ICTs have amplified brainpower in much the same way as the 19th century industrial revolution amplified muscle power. Innovations and improvement in ICTs during the last four decades have widened the scope of intervention in comprehensive development.

Considering the urgency, the present Government of Bangladesh was emphasized to visualize “Digital Bangladesh 2021” where information and communication technology is undoubtedly shares the majestic part. This article provides an overview of the use of ICTs in rural women and offers a vision for its developments as a trust area for intervention. This paper highlights need for ICTs for rural women, salient feature of ICTs policy, and status of the rural women of the use of ICT and its infrastructure, as well as service delivery through ICT in Bangladesh.

The general objective of the study is to examine the state of the access to ICT by the rural women for achieving Digital Bangladesh and to identify the factors affecting the issues. The specific objectives of the study are:

- i. to determine the types of ICT access to the rural women;
- ii. to draw out the concept of ICT and Digital Bangladesh among the rural women;
- iii. to search for available infrastructure facilities of ICT in the rural area;and
- iv. to find out the awareness buildup initiatives in the rural area on ICT.

Entire study is spread over beginning with an introduction of the problem and concluding with major findings and suggestions. Between these two ends, the methodology; research design and sampling followed by empirical data analysis and interpretation. This deals the primary discussion with significance the studies, prior researches, research gap etc. The universe of the study has been delimited and identified scientifically and systematically. By and large, the study contains an overview of ICT diffusion in Bangladesh including literature review. Detailed analyses and interpretation of various problems from the view of socio-technological status incorporated with relevant recommendations and policy implications.

2. Literature Review

Considering the issues related to information communication technology and its recent phenomenon have been prominent to the people particularly rural women in connection to develop digital society. Over the last few years there have been some significant research work in the field of digital technology and most of the studies are related to infrastructure development not exactly considering the vast majority of rural women and their livelihood. There still remains the lack of in depth studies in understanding of ICT based digital social pattern and its consequence to the gender particularly rural women in Bangladesh .There are various writings which have helped the researcher to gain and understand the actual status of the target group.

The main aim of this section is to identify the knowledge gap in the field of access to ICT by the rural women through the review of different research works conducted

in this area. By engaging in village phone activities, all the village phone holders (women) improved their income level and living standard. Before taking village phone, most of them (62%) used to earn taka 1000- taka 2000 but after taking village phone they added extra profit taka 2000-3000 (33%) to their existence income level. Although profession of about half of VP holders husbands is agriculture, most of them have got tin shed houses. Working women increased their empowerment by contributing financially to their family and in comparison to the past, they are more independent in police making in terms of financial, political and family matters. Thus it can be said that village phone has made tremendous impacts for they economics development of rural women in the study area (Fatema N.&R.M.M.,2006).Lack of access to information and communication technologies becomes a significant factor in the future marginalization of women from the economic , social, and political mainstream of their countries and of the world. Without full participation in the use of information technology, women are left without the key to participation in the global world in the twenty first century. According to the APC, IT will be one of – if not the major development issues of coming decades. If women are not actively present at all levels, we will see new forms of marginalization that could undermine others advances made by women in the twentieth century. This implies a crucial challenge to women to take on the issues.

The Internet was introduced in Bangladesh in 1996 - the number of Internet users has since increased multifold, at its present rate it is expected that by the end of this year about a half a million of people will have access to Internet. Bangladesh tops the list of other Least Developed Countries (LDCs) in personal computer and Internet subscriber trends between 1997 and 2002. The greatest numbers of PCs are in Bangladesh, Senegal and Sudan with an estimated 450,000, 200,000 and 200,000 respectively. The Internet subscriber-base increase in LDCs compares favorably with growth rates in the developed world, with Bangladesh, Senegal, Togo, Uganda and Yemen at the top of the list.

This is not to say that traditional ICT channels are not as important. The role of radio in women's lives cannot be understated and should be included in any work on enabling women to access information, resources and communication channels. Audience research in Bangladesh found that only 23% of males and 21% of females own working radios however, 71% of males and 44% of females surveyed have regular access to radio broadcasts (Wren Media 1999). At the time of writing, the technology of choice in terms of bridging the 'digital divide' between rich and poor, is the cellular telephone, and not the personal computer- "emerging markets will be wireless-centric, not PC-centric".⁴⁴ Mobile telephone subscriptions will continue to increase at a very dramatic pace, rising from an estimated 15 million in 2004 to 191.8 million by 2014 – raising the penetration level from 2.2% to 19.4% in all LDCs⁴⁵. Phones allow fisherman and farmers to check prices in different markets before selling their produce, make it easier for people to find work, can be shared by a village, pose no problems for the illiterate and the content is in local dialect and instantly shared. Moreover prepaid calling plans reduce the need for a bank account or a credit check. In anticipation of the potential growing markets in developing countries, cell phone manufacturers are designing cheaper more durable handsets.

4. An Overview of ICT Diffusion in Bangladesh

ICT is a combination of physical backbone and intellect. Basically information – handling tools- a varied set of goods, application and services that are used to produce, store, process, distribute and exchange information. They include the ‘old’ ICTs of radio, television and telephone, and the ‘new’ ICTs of computer, satellite and wireless technology and the internet. The trained human behind the backbone are the intellect. These different tools are now able to work together and combating to form ‘networked world’ a massive infrastructure of interconnected telephone services, standardized computing hardware, the internet, radio and television, which reaches into every corner of the globe.

ICT is often categorized into two broad types:

- The traditional computer based technologies;
- The more recent and fast growing range of digital communication technology.

ICT Profile- Bangladesh

Total population	138.23 million
Rural population as a percentage of total population	76%
Key economics sectors	Ready-made garments, frozen foods and shrimp, tea, raw jute, and jute products, chemical fertilizer, handicrafts, ceramic products
Literacy in the national language (s)	56%
Computer ownership per 100 inhabitants	0.78 ²
Telephone lines per 100 inhabitants	4.64 ³
Internet hosts per 10,000 inhabitants	0.015 (estimated)
Internet user per 10,000 inhabitants	19.04
Internet cafes/ telecasters per 10,000 inhabitants	0.19 (estimated)
Cell phone subscribers per 100 inhabitants	3.91
Number of website in the national language (s)	200 (estimated)
Number of website in English and other language (s)	600 (estimated)
National bandwidth within the country	68 Mbps (data) (estimated)
National bandwidth to and from the country	112 Mbps (estimated)

(Source: UNDP)1. Total Population: 138,226,485. Source: Bangladesh Bureau of Statistics; 2. ITU Estimate, 3.Number of Telephone: Fixed-1,007,450 Cell-5,413,800, Total – 6,421,250 (as on 9 may 2005). Source: Bangladesh Telecommunication Regulatory Commission; 4.The number of website registered with dot bd authority as on 30 April 2005.In Bangladesh, dot bd is not popular. Businesses and government agencies tend to use dot com and dot org domains.

Digital Divide:

Digital divide stems from the separation between those who have access to information and communication technology and those who do not have. Digital divide is very sharp between countries, regions within a country, between sexes and

between ethnic groups'. In Bangladesh digital divide persists as social and economic disparity is accompanied with the high cost of bandwidth, lack of proper regulation of resources and heavy mismanagement in ICT sectors. The country also faces the predicament of inadequate and properly trained technological manpower as well as an unreliable telecommunication infrastructure. Each of the aforementioned reasons behind the divide need separate attention in order to be resolved. This study addresses the issue of the pertaining problems of rural women in ICT facilitation in Bangladesh, what the present situation of IT prevalence is, recommends on how to resolve these problems and forecasts future perspectives based on research done via feedback forms.

Digital Bangladesh

Broadly speaking, a digital society ensures an ICT driven knowledge-based society where information will be readily available on line and where all possible tasks of the government, semi-government and also private spheres will be processed using the state of the art technology. So, a digital Bangladesh refers efficient and effective use of modern ICT in all spheres of the society with a view to establishing good governance. In other word, making Bangladesh a digital one, we have to establish technology driven e-governance, e-commerce, e-production, e-agriculture, e-health etc. in the society emphasizing the overall development of the common people, the major stakeholders of the country (Kabir, A. 2001)

"Digital Bangladesh" is currently the most commonly used words in politics, media, among the intellectuals and the civil societies. Since our Prime Minister Sheikh Hasina in her party's election manifesto pledged to develop a digital Bangladesh by 2021. Digital Bangladesh is a continuous process of development. For those who thinks that it can be developed in a specific time and budget is absolutely wrong. The whole process requires lots of tasks, for which we have to be prepared. After all, digitization is the only pathway to economic success, quality education, public health and also generating transparency in governance with full public participation. To materialize the idea of digital Bangladesh, development of countrywide backbone and expected number of human recourses is the basic needs. On the other hand, while mass people are concern, availability, accessibility and affordability must be ensured; otherwise the objective of building a digital Bangladesh could not be achieved properly (Abbas, M. 2009).

4. Methodology and Hypothesis

The main research hypothesis of this study is that the access to ICT is related with socio-economic condition of the rural women.

The specific research hypotheses are considered as follows:

- (a) The higher the income of women's household the higher is the level of women's access to ICT.

- (b) The higher the level of women's education, the higher is the access to ICT by the women.

The reason behind choosing the villages of Comilla district as it is located adjacent to Comilla town not only holds the largest informal sector job opportunities in

Bangladesh, but also significant for the trends and nature of male and female employment pattern at large. Through baseline survey this has been selected. The demographic compositions of these selected villages have been documented here that are highly relevant for this study.

Field survey was conducted at Hatigara, a village of Kalibazar Union under Camilla district through the systematic sampling technique adopting a semi-structured interview schedule with both open and close-ended questions administered on women along with some PRA. An expert team of field investigators was assigned for accumulating the data. Data were also collected by the researchers themselves along with investigators. Fieldwork and data were collected in August, 2009.. From the 850 women, a determining sample size drawn by allowing 5% standard error with 95% confident level. Following the statistical formula the measured sample is 265.

Data Analysis and Result Discussion

After the data were collected from the respondents, they were analyzed through SPSS program where descriptive statistics were used. In the frequency table of the program analyzed results are describe below with the help of different tables.

(i) Education level of the respondents

Education is the backbone of the nation. For the establishment of knowledge based society education is undoubtedly needed for the access to highly sophisticated technology like mobile, internet using. Where this technologies conserve the skeleton of the ICT. The following table is the statement of the educational situation of the respondents.

Table 1.1: Educational Background of the Respondents

Level of education	No of cases	Percentage
Illiterate	2	2.9
Able to sign	4	5.9
Primary	4	5.9
Secondary	41	60.3
Above secondary	17	25
Total	68	100

Source: Field Survey of Hatigara, August 2009.

The survey reveals that the highest concentration was towards secondary level (60.3%). Among others primary and able to sign consist 5.9% each, 25% crossed the secondary level. Interestingly 2.9% was only illiterate.

(ii) Occupation of the respondents

Occupational structure automatically reflects the socio- economic condition of any society. This is the base of any vision's successful implementation. If any data of a given area shows that most of the people are engaged in study, it is hopeful that the dream for digital Bangladesh can be practicable. The following table is a sketch of occupational structure of the respondents.

Table 1.2: Occupation of the Respondents

Occupation	No of Respondents	Percentage
House wife	17	25
Students	48	70.6
Service	3	4.4
Total	68	100

Source: Field Survey of Hatigara, August 2009.

The table shows that nearly one third (70.6%) of the respondents are students. Among others 25% are housewife and only 4.4% are engaged in service.

(iii) Monthly household income of the respondents

The per capita income of our country now a days are approximate 690 dollar per year. ICT equipments are costly to purchase them. Where as about 500 dollars is needed to purchase a computer only. So, the monthly household income is the precondition for the free flow of ICT. Surely the following table will help the policy makers for there job.

Table1. 3: Monthly Family Income of the Respondents

Income range (In thousand)	No of cases	Percentage
Less than 3000	6	8.8
3001-4999	13	19.1
5000-8999	16	23.5
9000 and above	33	48.5
Total	68	100

Source: Field Survey of Hatigara, August 2009.

Among the respondents maximum family haven aggregate family income of monthly above Tk. 9000 (48.5%) due to foreign currency, 23.5% families have income less than Tk. 8999 and 19.1% has income less than Tk. 4999. Only 8.8% families have income less than Tk.3000.

(iv) Respondent's status of acquaintance with ICT and Digital Bangladesh

In context to our desire, it is necessary to know the status of the acquaintance of the rural women with ICT equipments. Because access to ICT can be measured when it shows its existence in general. The following table presents the situation related to query.

Table1. 4: Respondents Status of Ear to ICT Techniques and Digital Bangladesh

Techniques	Comments			Percentage		
	Listen	Not Listen	Total	Listen	Not Listen	Total
Computer	35	33	68	51.5	48.5	100
Internet	32	36	68	47.1	52.9	100
IT	27	41	68	39.7	60.3	100
Digital Bangladesh	61	7	68	89.7	10.3	100

Source: Field Survey of Hatigara, August 2009.

The table shows that 51.5% of the respondents heard the name of computer whereas rest of them remains unheard. Among the respondents more than half (60.3%) never listened the word IT and 47.1% of them acquainted with internet in context to the individual technique. Hopefully, it may seem from the table that visualizing 'Digital Bangladesh 2021' is possible when 89.7% of the respondents responses to the term digital Bangladesh.

(v) Respondents status of having ICT items

Free access to any object is the precondition for its frequency of use which is related to its possession. Without regular use of ICT equipments, it is impossible to erect knowledge based society. The following table is the clear diagram of the state of having ICT items of the respondents.

Table1. 5: Respondents Possession of ICT Items

ICT Items	Have or Not			Percentage		
	Have	Haven't	Total	Have	Haven't	Total
Television	33	35	68	48.5	51.5	100
Satellite connection	4	64	68	5.88	94.12	100
Computer	3	65	68	4.41	95.59	100
Mobile	17	51	68	25	75	100
Internet connection	1	67	68	1.47	98.53	100

Source: Field Survey of Hatigara, August 2009.

The women of Hatigara got greatest chance to satiate television program when 48.5% household have television but in context to satellite connection poor picture comes with 5.88% connectivity . Computer yet to be the common one when shows its existence with 4.41%. But in the era mobile imperialism only 25% holds it.

(vi) Respondent's conception about Digital Bangladesh

Digital Bangladesh is the present govt's key to success. If they try to hold their popularity, they have to make Bangladesh digital in true sense that may be the outlet to the economic emancipation for the masses. In connection to the issue Digital Bangladesh the buzz word should not create ambiguity to the general people. Here, the following table shows the perception of the respondents about digital Bangladesh.

Table1.6: Perception about Digital Bangladesh

Comments	No of cases	Percentage
Changing the time by the Governments	13	19.1
Over all development of the country	18	26.5
No concept	37	54.4
Total	68	100

Source: Field Survey of Hatigara August 2009.

Though the present government's mission seems possible when hearing the buzz word digital Bangladesh covers 89.7% of the respondents but the table above miserably depicted the real picture where half of the respondents have no concepts about the desired, 19.1% of them weighted it as changing the time by the govt. Only one fourth of them were able to near the meaning.

Factors associated with Access to Information and Communication Technology

This section of the study attempts to relate different socio- economic factors with access to ICT by the respondents.

(i) Association between age and the access to ICT

In first place the researchers dealt with age of respondents, which is a major demographic factor in social inquiry. In this respect the respondents were categorized into to age group. Up to 18 years they were 13 of them had no access to ICT, where as 30 of that age group had access to it. Among

Table 2.1: Age group of Respondents & access to ICT

Age	Don't have access to ICT	Access to ICT	Total	Chi- square
Up to 18	13	30	43	.305*
19 and above	6	19	25	
Total	19	49	68	

*It is insignificant

Source: Field Survey of Hatigara, August 2009.

The 19 above respondents 19 of them had access to ICT but 6 of that age group had no access. For drawing out a relationship between the age group and access to ICT by the respondents a Chi- square test was done. But interestingly enough there was no significant relationship was found between the two variables. So, the policy makers and operating agencies should not worry about the age structure of the country for establishments of ICT based knowledge oriented society.

(ii) Association between Income level and access to ICT

Income level is the catalyst of socio- economic status of any society. So, a relationship was tried to make between the income level and the access to ICT use.

Table 2.2: Income level & access to ICT

Income level	Don't have access to ICT	Access to ICT	Total	Chi- square (2-sided)
Up to 8000	14	21	35	5.209*
8001 and above	5	28	33	

* Significant at 5% level.

Source: Field Survey of Hatigara, August 2009

The income level of the respondents was tabulated into two income groups such as up to 8000, and above 8001. A chi-square test was performed to find out the association among the two variables. The results show that there is a significant relationship between the income level and access to ICT by the respondents. That means higher the level of income is higher the accesses to ICT use. And this result also support the second specific hypothesis of the study and validate it. So, the policy making authority should be concern about raising the income level of the people as well as work opportunities for the accelerations of ICT use.

(iii) Association between Education level and access to ICT

For finding out how the education level of the respondents relate to the access to ICT a Chi-square test is done between the two variables.

Table 2.3: Education level & access to ICT

ICT Use according to category	Up to secondary	Above secondary	Total	Chi- square (2-sided)
Don't have access to ICT	18	1	19	5.478*
Have access to ICT	33	16	49	
Total	51	17	68	

* Significant at 5% level.

Source: Field Survey of Hatigara, August 2009.

A significant relationship between the two variable was found and we can draw a conclusion that the higher the level of education the higher the access to ICT. This result also supports the hypothesis formulated in the study and validates it. So, it is obvious that to make sure the vast use of ICT and for the establishment of Digital Bangladesh level of education of the rural women should be elevated.

6. Conclusion and Policy Implications

ICT sector lies at the heartland of an emerging information society and knowledge-based economy, developing new ICT products, systems and services with important economic and social implications. If we want to achieve Digital Bangladesh within 2021 it is essential to increase awareness program, availability of ICT resources, need more training besides implementation of ICT in all sectors of Bangladesh. Like The digital technology specially empowers women to have a better say in the family space as well as in the national and global communities. Although our proposed normalization indicators are not standardized and harmonized with the ICT statistics at the global level it agrees with the definitions, model questions and methodological notes provided by the core ICT indicators agreed at the WSIS Thematic Meeting on

Measuring the Information Society (Geneva, February 2005). Our work on normalization protocol can be a milestone for the policymakers to construct a national level platform for the future measurement of ICTs impact on women.

Based on the study finding some strategic recommendations for an overall strategy and discusses some specific action items for better access to ICT by rural women in Bangladesh.

- To make Digital Bangladesh in practical the government should try to extend the education level of the rural women. In addition to that it should be quoted that the increase in literacy rate will not be the exact solution.
- The government should take necessary steps for creating work opportunities leading to increase per capita income of the rural women. So they can be brought to the mainstream of the information and communication technology policy of the country.
- Priority and suffrage should be given in written clause form when formulating the consistent national policies on ICT like 2002 and 2008.
- Workshop and training centers like tele-centers of Grameen Phone with key gatekeepers and stakeholders can be conducted for awareness rising. Young groups are an important target group for training.
- Collaboration among government, development organization, NGOs and other stakeholders need to be encouraged in finding solutions to the common problems through application of appropriate ICT services in rural areas where the govt. sector still lagging far behind.

References

Association for Progressive Communication Women's Networking Support Programme, "Information and Communication Technologies: A Women's Agenda.

<http://www.gn.apc.org/apcwomen/resources/policy/womenrights.html>.

Bangladesh Enterprise Institute. Overview of the ICT Sector in Bangladesh.

Bhattacharjee M. K. 2002, Development Communication as it should be for Rural Development in the 21st Century: The Bangladesh Context, In (ed) 'Current Thought on Rural Development', Kotbari, Comilla, Bangladesh.

Chowdhury, N. 2000, Poverty Alleviation and Information/communication Technology: Towards a Motif for the United Nations ICT Task Force, Grameen Communications, Grameen Bank Group, Dhaka.

Dr. M. Kaykobad. 2003, ICT Education and HRD Strategy in Bangladesh.

Dr. Hafiz Md. Hasan Babu 2005, ICT Development and Bangladesh, The Independent, June 7. <http://www.bei-bd.org/Documents/ICT.doc>

Dhawla, R. 2004, Online Delivery of Land Titles to Rural Farmers in Karnataka, India: A case Study from Reducing Poverty, Sustaining Growth- What Works what does not and Why a Global Exchange for Scaling up Success' The World Bank, Washington D.C.

Development Research Network (D.Net). 2003, Access to Information for Improvement of Rural Livelihood 'Hand Book on Research Methodology for Social Science Researchers, Bangladesh Academy for Rural Development.

Fathema N., M.M.R. 2006, 'Role of Rural Women in Economic Development of Bangladesh: A Case Study on Village Phone- a Special Product of GP.' *The Journal of Rural Development*, Comilla, Bangladesh, vol.33, No.2, July, pp.-1-14

Irin Parvin, A. A., F. N. S. 2007, Information Communication Technologies in Rural Development of Bangladesh. *The Journal of Rural Development*, Comilla, Bangladesh, vol.34, No.2, July, pp.-61-88, BARD,

Kabir M. A. 2001, Promised digital Bangladesh and the young generation.
Monir Hossain and M. Ansar Uddin, 2004, Cellular Phones for Women's Empowerment in Rural Bangladesh.

M. Lutfar Rahman and Muhammad Mahboob Ali. 2003, "Digital Divide in Bangladesh: Present Status and Suggested Remedies, Abhigyan, The Quarterly Journal of FORE, New Delhi, India, Vo.XXII, No.3 (October-December, 2003,

Mohoshin Abbas. 2009, Digital Bangladesh and ICT development.

Md. Anwarul Kabir 2001, romised digital Bangladesh and the young generation.

Mohoshin A.,2009. Digital Bangladesh and ICT Development.

Monir H., M. A. U. 2004, Cellular Phones for Women's Empowerment in Rural Bangladesh.

Quddus M. A. 1996, Rural Development in Bangladesh -Strategies and Experiment, Bangladesh Academy for Rural Development, Kotbari, Comilla, Bangladesh