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Bangladesh Institute of ICT in Development (BIID), being a distinctive ICT based initiative, intends to take the opportunity to host the paper. BIID is a private sector initiative to contribute to economic development of Bangladesh through integration of ICT in the provision of essential services primarily targeted to farmers, entrepreneurs and potential income generating groups in the rural areas. BIID's activities cover Research & Development, Knowledge and Skill development, Design Business Model for Telecenter (Rural Information Centre) to promote rural businesses specially the micro, small and medium enterprises. BIID is also working in Africa in the field of ICT4D. Strategically, being the sole specialized paper in ICT for development field, has the potential to serve a number of purposes.

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WPS on ICT4D June 2015 Issue

Focus on Women, Environment, Politics and Education

Welcome to the eighth issue of the Working Paper Series on ICT for Development!

In this issue, we have focused on how information and communication technologies have facilitated development in the realms of women empowerment, environment, politics and education. In the first paper, entitled "Women's Inclusion in Digital Bangladesh," Genilo and Akther investigates the status of women's inclusion in Digital Bangladesh. They argue that enabling policy environments instituted by the Government of Bangladesh over the past six years have not necessarily improved digital inclusion, particularly with respect to women. Rather, the digital inclusion of women is facilitated by both the individual's socio-demographic context (age, education and experience) and the citizenship status of her local community in ethnic and religious terms as well as its proximity to the capital. To substantiate their argument, they compared ICT access and usage among men and women in the ICT telecentres in purposively chosen villages based on the ideological view (whether secular or Islamist) of those villages. From these, they construct a four-tiered structure of ICT access in rural Bangladesh with the men being on the top and housewives from Islamists villages at the bottom.

In the second paper, entitled "The Role of Television in Science and Technology Communication for the Development of Rural Women in India," Jothi and Neelamala documented various mass media strategies to deliver science and technology information to rural women in India. In authors' view, Indian scientists made a plethora of innovations in many fields of knowledge, but benefits of those innovations were limited to the educated and wealthy classes. To enable the poorest of the poor (rural women) to gain access to and be motivated by the use of information technologies, the government has utilized television. Herein their article has explored through different experiments about the best ways to deliver messages that is relevant and important to these rural women.

The third paper, entitled "Expansion of the Remote Sensing Research on Water Environments of Asia through KISSEL Server System," is a topical piece given the ongoing recent Climate Change Conference in Paris. In this summit, leaders from 196 parties would negotiate climate for 12 days to reach a legally binding accord to save the planet, i.e., reducing greenhouse gas emissions and cap global warming at 3.6 degree Fahrenheit over pre-industrial Revolution levels by 2100. The authors of this paper, Dahanayaka et al., extended and fine-tuned their databases based on remote sensing studies on the water bodies in select Asian countries. The authors have argued that the use of the KISSEL server system would be able to facilitate better pollution monitoring and sustainable use of the said water bodies. The databases now have high-resolution satellite-based water quality distribution maps with new algorithms, which will be useful in making predictions and recommendations. Hopefully, these will be helpful in implementing the Climate Change Accord.

The next two papers are on the use of ICTs for politics and education. In the fourth paper

entitled “Cyber Campaigning via Facebook in Dhaka City Corporation (DCC) Election 2015,” Hossain and Shifat explored how mayoral candidates in their campaigns for the DCC election of 2015 utilized social media to communicate with urban young voters. They looked into how the candidates’ Facebook pages discussed political issues, provided campaign updates, interacted with voters’ comments and shared videos, photos and links. In the fifth paper, entitled “Knowing the Learners: An Analysis of the Online Teaching-Learning Platform,” Ismail focused on the importance of e-learning applications to cater to the needs of Bangladeshi undergraduate students. According to her, e-learning applications can serve students who come from various academic, economic and social backgrounds as well as complement various types of learning methods. These applications fulfill the needs of students for visual stimuli, detailed discussions and interactive platforms.

We hope that these articles, would enable a better understanding of ICT applications in the development of women empowerment, environment, politics and education to our readers. We hope that you enjoy this issue.

On behalf of the entire editorial board,



Prof. Jude William Genilo
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Women's Inclusion in Digital Bangladesh

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Abstract

The paper documented and analyzed the application of ICT telecentres in achieving community objectives and creating spaces for women empowerment. This paper also documented how freely women can participate and benefit from Digital Bangladesh which is one of the election promises of present Government. Women participation is critical to the success of Digital Bangladesh. The study was qualitative, exploratory and descriptive in design. It utilized the case study approach – selecting women's particular villages based on a set of criteria – to facilitate the how state-community relations affect citizenship and how community informatics achieve local objectives and attain women empowerment. This paper investigated two villages: Kapasia, Gazipur and Sharsha, Jessore, Bangladesh. Using a case study method, key informants included experts, opinion leaders and community women of the said villages. Field observations included observations of communication practices and ICT usage in formal and informal settings.

Keywords

Women, Rural Bangladesh, ICT, Digital inclusion

Introduction

This is a study about the inclusion of women in "Digital Bangladesh". It argues that in the past six years, despite of a favorable policy environment, digital inclusion has failed to address gender issue adequately. Rather, the digital inclusion of women is facilitated by both the individual's socio-demographic context (age, education, occupation and civil status) and the citizenship status of her local community in ethnic, religious and ideological terms. Against this backdrop, this paper discusses the origins of "Digital Bangladesh", the initiatives taken towards digital inclusion and the existing digital divide among genders.

It should be noted that the slogan "Digital Bangladesh" was popularized by the Awami League (AL) during its 2008 election campaign. The slogan resonated with young voters (who comprised one-third of the electorate at the time) as they saw digitization as being synonymous with being modern and forward looking (Genilo, Islam and Akther: 2013).

As a consequence, AL won the election and the euphoria over ICTs ensued with various sectors developing their own interpretations of the buzzword—“Digital Bangladesh”.

The government then furthered the conceptual development of “Digital Bangladesh” and published three documents on building an information society - *Digital Bangladesh Strategy in Action*, *National ICT Policy 2009*, and *Strategic Priorities of Digital Bangladesh*. These documents had set the roadmap for Bangladesh’s ICT development.

Six years later, the government reports its achievements vis-à-vis digital inclusion in its National Web Portal (accessed 14 October 2014). According to that report, the government has established digital centers in 99.4 percent of the country’s 4,545 union parishad (lowest government service office). A total of 9,032 local entrepreneurs run these centers. These centers provide various public and private e-services. Asad-Uz-Zaman (2012) provides a list of public and private services of digital centers. According to him, public services include downloading of public exam results, application for land copy, online application for passport, electricity bill payment, birth and death registration, testing of water, life insurance, telemedicine, etc. Private services, on the other hand, include email, Internet browsing, ICT training, mobile banking, photo ID, scanning, photocopying, knowledge services, online job applications, etc.

Asad-Uz-Zaman (2012) further presents three cases of poor people benefitting from the digital centers set up under the support received from Prime Minister’s Office Access to Information (a2i) programme. These cases featured (a) a doctor providing health services to poor people through a digital center in Jamlapur District, (b) an unemployed youth who became a successful digital center entrepreneur in Jessore District and (c) a digital center entrepreneur in Meherpur District helped his fellow community members.

With an enabling environment on “Digital Bangladesh,” alongside the initiatives taken by the govt, several corporate and non-government institutions have undertaken initiatives towards making ICT’s reach to improve the lives of those living at bottom of the pyramid. The authors, after reviewing relevant literatures, found at least 25 projects aimed to make basic services (such as digital , safe drinking water, health care, medicines, computer literacy, weather updates, flood forecast, online education, agricultural extension, nutrition information and life insurance) available to poor people.

In particular, Grameenphone, one of the country’s largest telecommunication company, has more than 550 Community Information Centers (CIC) (also called digital centers or telecenters) in rural areas. Each CIC provides Internet access and other information-based social services. These centers are equipped with computer, printer, scanner, webcam, EDGE modem and Internet connectivity. The company also has a community service called “Village Phone” aimed at providing telecommunication services to rural people who cannot afford to own a phone. Thus these CICs are creating income opportunities for those who own phones. In 2014, the company launched a campaign entitled “Internet for All” with partners such as media (Daily Star newspaper), mobile phone companies (Symphony), development agencies (BRAC), digital companies (Telenor Digital) and computer organizations (Bangladesh Computer Council and Bangladesh Computer Samity). It should be noted that Grameenphone believes that a 10 percent increase in data penetration results in a 0.5 percent increase in Gross Domestic

Product (GDP). For this reason, it is important to have Internet for all members of society. The Telecommunication Regulatory Commission's National Media Survey placed the total Internet users in Bangladesh at 30.48 million as of January 2013; Internet penetration stands at 20.3 percent. The main Internet connection types are 94 percent mobile Internet, 4 percent Internet Service Provider (ISP) and 2 percent WIMAX. The Facebook population in Bangladesh is estimated at 3.39 million among whom 78.7 percent are male and 21.1 percent are female. In many ways, Bangladesh has made inroads towards digital inclusion where the population not only has access and use of ICT but also quality usage of ICT.

The problem, however, is that, Bangladesh's key ICT policy documents, while having identified areas and strategies for building an ICT-driven knowledge-based society, do not have a gender perspective given (among other reasons) in their inherently capitalist orientation. Bhuiyan (2013), after conducting a critical discourse analysis of the ICT policy documents, declared that its "implicit purpose seems to be making Bangladesh a neoliberal capitalist society after four decades of state capitalism." In Digital Bangladesh, according to him, private capital benefits at the expense of the country's citizens. It gives agency to the technology and hides the actual actors in the process. In the end, he called the documents "over-generalized," "ambiguous" and "at times contradictory."

In addition, the ICT policy documents ignored possibilities of digital exclusion of women and gender inequality in ICT education and consequently, the under-representation of women in ICT professions. These documents simply assumed that women could freely participate and benefit from Digital Bangladesh. Islam (2012) opines that "there are no reliable statistics on women's use of ICT in Bangladesh but it is clear that the numbers are small. Most women who use information technology use it at work. Except in upper income enclaves, access to a computer or the Internet at home is not a typical phenomenon." For him, many factors affect the digital inclusion of women such as literacy and education, language, time, cost, geographical location of facilities, social and cultural norms, and women's computer and information search and dissemination skills.

The Bangladesh Online Research Network (2009) raised the same concern about women being grossly under-represented in ICT-based occupations. As a result, they miss the benefits ICTs offer. The digital divide between men and women has caused corporate executives and computer professionals to establish in 2010 the Bangladesh Women in Technology (BWIT). The organization aims to empower women with technology in order to build a critical mass of women ICT workers in Bangladesh.

This study, in light of this, compares ICT access and usage among men and women in the digital centers or telecentres of purposively chosen villages. It first explores the role that citizenship variables play in digital divide. In Bangladesh, citizens divide themselves into various political and cultural communities. Boundaries of these communities are based on political ideology (whether secular or Islamists), religion (Muslim, Hindu or others) and ethnicity (Bengali, tribal or others). Such political and cultural identification impacts on ICT access and usage among community members. This study further investigates individual differences (sex, age, education, occupation, civil status, etc.) that may affect one's digital inclusion or exclusion. Both citizenship and individual variables are able to offer important insights about women's inclusion in "Digital Bangladesh".

Research Questions. The set of research questions of this study includes: What are the citizenship and individual characteristics that affect the digital inclusion/exclusion of men and women in select villages in Bangladesh? Under what circumstances have access to ICTs been made useful and usable to men and women in the select villages? What new policies need to be generated (taking into account the said citizenship and individual factors) to improve women's inclusion in Digital Bangladesh?

Aims and Objectives. The study aimed at investigating two villages in order to generate insights on women's inclusion in Digital Bangladesh. Specific objectives of the study are:

- To investigate whether citizenship factors (particularly, community ideology whether secular or Islamist) affect the inclusion or exclusion men and women from digital participation in terms of access to devices, access to Internet connections, computer and language skills and social network support.
- To understand the individual characteristics (sex, age, education, occupation, civil status, etc.) that enable a community member's access and usage of ICTs.
- To make policy recommendations to improve women's inclusion in Digital Bangladesh.

Literature Review. Several studies have dealt with digital inclusion in Bangladesh. Most of these studies are related to national strategies on ICT access, the expansion of ICT services to the rural areas and on the adoption of digital services by marginalized groups such as farmers and fisherfolk. Some other studies have addressed the issue of ICT and women in Bangladesh. However, these studies are focused on affluent educated urban women who are able to access, understand and use digital technologies. In other words, these studies have ignored the poor uneducated rural women who are greater in numbers comparing to their urban counterpart.

In their paper "Digital Bangladesh: Shared Meanings, Shared Concerns," Genilo, Islam and Akther (2013) interviewed representatives of various societal sectors such as government, media, business, academe, IT and civil society regarding their perceptions of Digital Bangladesh. For most sectors, they saw digitization as a means for the country to leapfrog in its development bringing about an improvement in the quality of life and an end to poverty. Bhuiyan (2013), on the other hand, conducted a critical discourse analysis of three key ICT policy documents. He concludes that the National ICT strategy is pro-business but contains several pro-poor messages (resulting in a tension between marketization and egalitarianism of ICT). In other words, the digital inclusion of all sectors in society is not guaranteed in the said documents.

In terms of rural communities accessing ICTs, two studies show the extent to which marginalized sectors in the country access ICTs. Zainudeen, Galpaya and Senaratna-Perera (2013) explained the relevance of digital centers or telecentres in the delivery of government services in both Bangladesh and Sri Lanka. In Bangladesh, people are more dependent on telecenters for e-government services comparing to Sri Lanka given the former's number of owned devices, literacy, income, etc. Also, since these telecentres are co-located in union parishad, they gain some sense of legitimacy as a provider of government forms and services. Their survey (comprising 2,750 respondents in Bangladesh) finds that 67.5 percent of their respondents have heard of telecentres and

of those aware of the existence of telecentres, 52.1 percent have visited. Asad-Uz-Zaman (2012), meanwhile, discussed the achievements of the Bangladesh government in terms of establishing telecenters (called Union Information and Service Centre) throughout the country. With the establishment of telecenters, information services are brought at the doorstep of rural citizens who can now save their time, energy and money.

Aside from these, several studies have been undertaken to illustrate how various marginalized sectors have benefited from ICTs. Akbar and Nour (2013) presented how farmers utilized a rural telecenter to improve crop production. They obtained advice from agriculture experts by sending information about their crops (leaf color, pests, etc.) and soil fertility. Azam and Jalil (2013) as well as Wagemaker, Verkaik, Boortman and Davids (2013) documented how the mobile phone helped to provide sustainable solutions to farmers and gave opportunities for better water management and food security in the countryside. Salam and Arman (2013) narrated how fishermen in Kutubdia Island used ICTs to share weather updates, track fish swarms, increase income, save time and assist shipping.

Regarding women access and usage of ICT, studies largely documented success stories. Tandon (2006) explain that there is a growing demand for ICT workers given the country's aspiration to become an international ICT hub. However, for this to be successful, the government needs to attract more women into the field. In light of this, Genilo, Akther and Haque (2013) profiled the type of women who are successful in studying and joining the ICT sector. These women are basically urban, affluent, educated and liberal or secular in thinking. Further studies have been done concerning the profile of women who are using ICTs. Hossain and Sultana (2014) and Haque (2013) interviewed women entrepreneurs who managed to become successful online clothing store owners. These entrepreneurs found a way through Facebook to promote their store and products circumventing the difficult bank loan procedures for women. Haque and Qader (2014), in another study, interviewed women who are successful online bakery shop owners.

Study Framework. This study is guided by three theories – community informatics (CI), digital inclusion and citizenship theory. Since the study looks at two rural villages in Bangladesh, community informatics offers a useful conceptual guide. Gurstein (2007) defines community informatics as the application of ICTs to enable and empower community processes. The objective of CI is to use ICT to enable the achievement of community objectives including overcoming 'digital divides' both within and between communities." It also examines how and under what conditions ICT access can be made usable and useful to the range of excluded populations and communities and particularly to support local economic development, social justice and political empowerment using the Internet.

It is mentioned that in Bangladesh, the government has endeavored to establish digital centers or telecentres throughout the country in the hope of providing access to e-government services. However, not all members of the community can access and utilize these telecentre as they may be digitally excluded. Mancinelli (2007) details the extent of digital exclusion at the community level. For her, "the digital divide is basically about social access to digital technologies" given "social relations around the use of ICT. It includes access to devices, access to Internet, computer and language literacy, social network support to digital use and extent and quality of use. The factors surrounding

social access to digital technologies may include age, sex, education and income.

The disparity in ICT access and use is not limited to individuals in a community. It also exists from community to community depending on community-state relations, which is encapsulated in the multi-tiered theory of citizenship. Painter (1998) explains that “citizenship is commonly defined as ‘membership of a political community.’” In many ways, the idea of citizenship is linked to cultural identity – a feeling of belongingness to a particular group or an imagined community. Hence, even if the law confers equal status on each individual, one may find disparity in access to ICT due to one’s cultural identity. Kofman (1995) points out that the ability to exercise one’s rights depends in part on being recognized as a citizen in daily life by other members of society, which often in practice seems to mean sharing some of the same cultural values or identity. Those who are judged unfitting by the majority collective perception are thus excluded from full participation in social life.

In Bangladesh, a community’s cultural identity falls along ethnic, religious and/or ideological lines. Of the country’s 166 million population, 98 percent belong to the Bengali ethnic group while only 2 percent are tribal groups and non-Bengali Muslims. Likewise, 89.5 percent of the population is Muslim, 9.6 percent are Hindus and 0.9 percent belongs to other religions. Since the majority collective perception is Bengali and Muslim, persons who belong otherwise may not be allowed to fully participate in aspects of social life such as accessing and using ICTs in telecenters.

Be this as it may, being Bengali and Muslim is no assurance given an ideological divide in the county. To this, Van Schendel (2009) speaks of “culture wars.” When the country gained independence in 1971, the leaders imagined a society based on democracy, socialism, secularism and nationalism – the symbols of which are the name “People’s Republic of Bangladesh” and the image of a “Golden Bengal.” Samad (1998) views such secular orientation as “a matter of ideological mooring of the ruling elite,” which contrasts with the religious orientation of majority of the people. While urban centers upheld this orientation, the rural areas continued living out their racial and/or religious identity. Siddiqui (2011) agrees by stating that “old school secularist take an atheist standpoint, put up the overtly Bengali outlook and thus present secularism as a space for the educated, those with pedigree. There is a real disconnect between the secular discourse of Bangladesh and the grassroots level realities.”

At any rate, the inability of the secular leadership to uplift the plight of the majority has caused disillusionment among the population which also has enabled Islamism to rise according to Bouissou (2013). In this regard, Bouissou (2013) argues, “Islamism fills a gap in the political and ideological spectrum left vacant by the parties that coalesced around the independence movement, worn out by subsequent quarrels and scandals.” In a sense, Islamism represented the values of those who were critical of government corruption. Van Schendel (2009) identifies other factors such as the inflow of Islamic decorum brought back by migrants from the Gulf and financial aid to Islamic groups by rich states in the Middle East.

The rise of extreme Islamism has repercussions to women’s emancipation in the country. For example, a fundamentalist Islamist group, Hefajat-e-Islam Bangladesh, was formed in 2010 to protest against government policies on secular education and women’s equal rights. In 2013, the group held large rallies in the capital; demanding a 13 point charter,

which includes banning women from working outside their homes and the mixing of the sexes in public spaces. Such ideological positioning can prevent women from going to telecenters and owning and learning to use ICT devices. Van Schendel (2009) notes that “liberal and Islamic visions of Bangladesh culture clash on many fronts: language use, dress, gender relations, festivities and music.”

Given this, the authors turn to a gendered reading of citizenship. Nira Yuval-Davis (1997) expresses that a comparative study of citizenship should consider the issue of women’s citizenship not only by contrast to that of men, but also in relation to women’s affiliation to dominant or subordinate groups, their ethnicity, origin and urban or rural residence.” In other words, access and use of ICTs will definitely vary from village to village depending on women’s affiliation in terms of ethnicity, religious group and community ideology. Digital inclusion is not solely determined by one’s individual characteristics. The study framework may be visualized as follows:

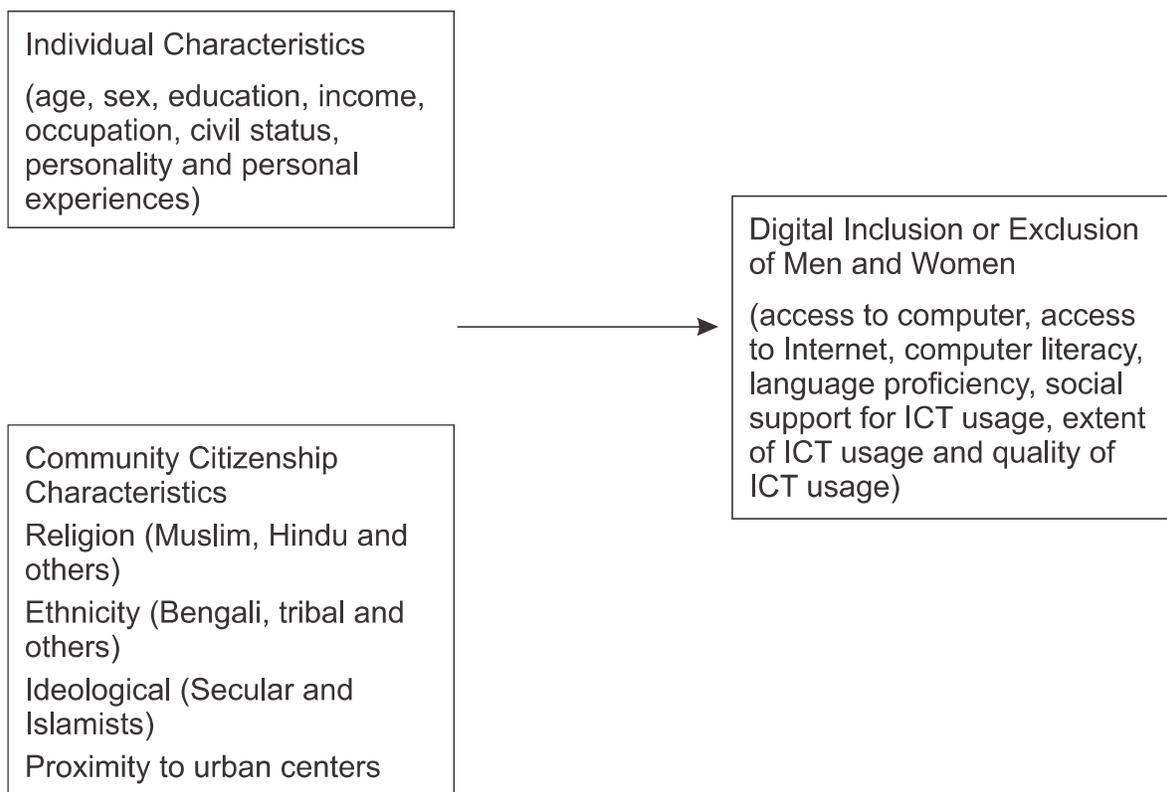


Figure 1. Study Framework showing the relationship between individual and community citizenship characteristics to ICT access and usage.

Research Methodology. The study is qualitative and exploratory by nature and descriptive in design. It utilizes the case study approach – selecting particular villages based on a set of criteria – to facilitate how individual and community citizenship characteristics impact on the digital inclusion or exclusion of men and women. Being a qualitative study, data were generated from in-depth interviews, expert interviews, field observations and document analysis. Expert interviews were conducted in May 2014 with three ICT and women empowerment resource persons in Dhaka City. Types of documents that were examined included training materials, promotion materials, price lists of services and registration certificates of telecentres and socio-cultural and demographic statistics of the villages where the telecentres operate.

In-depth interviews were conducted in the first village (Kapasias, Gazipur, Dhaka Division) from June to July 2014 and in the second village (Sharsha, Jessore, Khulna Division) in August 2014. Ten men and ten women (or a total of 20 respondents) from each village were interviewed. The field study took two weeks to complete. The interview guide was divided into the following parts: respondent's profile, ICT access and usage, telecentre visits, media ownership and usage, perceptions on gender roles and women's role in household, community and political affairs. The sampling technique utilized quota and it was purposive. The interviewers needed to interact for a minimum of one hour per subject. The respondents were selected on the basis of visiting or using the telecentre during the data gathering period.

Apart from telecentre consumers, the telecentre operators were interviewed regarding their customer profile, e-services rendered and promotional activities. Opinion leaders in each village (political and education leaders) regarding community characteristics and community support for the telecentres were interviewed as well. During the time of the field study the interviewers conducted field observations in order to derive a sense of communication practices and ICT usage in formal and informal settings.

It is mentioned that a total of two communities were studied. Selection of these communities were premised purposively using the following criteria: (1) existence of infrastructure in the community that enable digital access and usage; (2) existence of a telecentre in the community (with computer, mobile and Internet facilities) that has been operating for at least six months; (3) the telecentre in the community provides public and private e-services; (4) the telecentre in the community has been engaged in a development-oriented project; and (5) the villages have different citizenship ideological characteristics – one being secular and another being Islamist. The researchers assumed that the relatively secular community is located nearer the capital Dhaka (the seat of secularism and nationalism) while the relatively Islamist community is located farther away from the capital. In this sense, the researchers saw Kapasias village located in Gazipur District, Dhaka Division as the secular community and Sharsha village located in Jessore District, Khulna Division as the Islamist community.

The researchers approached the Bangladesh Institute on ICT for Development (BIID) to screen, select and gain access to the telecentres. BIID has been engaged with the said telecentres for its e-agricultural and e-health service projects.

Using an analytic induction method, the data collected were then subjected to a systematic examination of similarities – facilitating a search for broad categories and for

the later development of subcategories. The method, hence, allowed for the modification of categories throughout the research process with the goal of most accurately representing social reality.

Results and Discussion. The results and discussion section is divided into the following structure: (1) profile of villages, telecentres and respondents; (2) men and women inclusion in “Digital Bangladesh”; (3) gender role perceptions and media consumption patterns; and (4) gender role perceptions and cultural identity. Afterwards, the researchers discussed case – two from Sharsha and two from Kapasia.

Profile of Villages, Telecentres and Respondents. The two communities included in the study are from Kapasia, Gazipur, Dhaka, and Sharsha, Jessore, Khulna. The village near the core is Kapasia upazila in Gazipur district under Dhaka division. Established in 1947, the village has a total population of 321,454 – male 50.50% and female 49.50%. In terms of religion, the village may be divided into Muslim (94.3%), Hindu (5.54%) and others (0.16%). The average literacy rate is 56.4%. Sharsha Upazila, on the other hand, is located in Jessore district under Khulna division. It has a total population of 309,633 – male 51.17% and female 48.83%. In terms of religion, the village may be divided into Muslim (97.03%), Hindu (2.6%), Buddhist (0.061%) and others (0.184%). It has an average literacy rate of 42.72%.

Both villages are easily accessible through paved roads via public transport. To go around the village, one can hire rickshaws and auto rickshaws or ride their own bicycles and motorbikes. Telecommunication companies such as Grameenphone, Citycell, Airtel and Banglalink operates there. In terms of electricity supply, Sharsha has better services in comparison with Kapasia. On an average, everyday Sharsha receives 12 hours of electricity supply where as Kapasia, on the other hand, would have only one-fourth of the day with electricity and the rest without. For this reason, villagers have resorted to other means for power generation including solar panels and fuel generators among others.

Table 1: General Profile of Kapasia and Sharsha Villages

Section	Kapasia Village	Sharsha Village
Division	Dhaka	Khulna
District	Gazipur	Jessore
Total Area	356.98 square kilometers	336.34 square kilometers
Population	321,454. 50.50% male and 49.50% female	309,633; 51.17% male and 48.83% female
Average Literacy	56.4%	42.72%
Main Income Sources	Agriculture, business, foreign remittances, transportation and communication	Agriculture, business, transportation
Religious Institutions	Mosque (594), Temples (41); 94.3% Muslim, 5.54% Hindu and 0.16% Others.	Mosque (175), Temples (8) and Churches (2); 97.3% Muslim, 2.6% Hindu, 0.061% Buddhist and 0.184% Others.

Section	Kapasias Village	Sharsha Village
Cultural Organizations	22 clubs, 1 public library, 1 cinema hall and 3 theatre groups, 38 library, 8 women's society, 11 cultural organization.	25 clubs, 3 cinema halls, 1 public library, 4 opera party, 1 women's organization and 48 playgrounds.

Sources: Banglapedia, National Encyclopedia of Bangladesh (2015)

The researchers recognize that from the general profile, it could not be immediately established that one community is relatively secular and the other relatively Islamist. Such is the case since the divide is an ideological one. It is a divide that impacts on men and women inclusion in a modern, forward-looking, market-oriented, secular and nationalist Digital Bangladesh. It should be noted that throughout the 2008 election campaign, the then candidate for the office of Prime Minister Sheikh Hasina connected Digital Bangladesh with the 1971 Liberation War – firmly projecting that digitization is secular in nature (Genilo, Islam and Akther: 2013). The ideological divide between communities manifests in later discussions.

In the two villages, the telecentres are located in the market or bazaar. The telecentre in Kapasia is managed by a family (husband and wife) where another male and a female work as their employee. The one in Sharsha is owned by a male entrepreneur and is helped by two male assistants cum instructors. In Kapasia, the union parishad council extended its full support to start up the telecentre. The union parishad chairman expressed that the union council members provided the telecentre a room, projector, digital camera, computer, IPS, etc. They felt that the telecentre will be helpful for community members, particularly in regard to bill payments, communicating with relatives abroad and getting government certificates and travel documents. Later on, the telecentre was able to find space in the market with a very low rent. Telecentre owner explained that the stall owner was skeptic as they thought that the telecentre would not make money.

Table 2: Telecentre Profile of Kapasia and Sharsha Villages

Section	Kapasias Village	Sharsha Village
Year Established	2005	2007
Location	Bazaar	Bazaar
Management	Partnership (Husband and Wife)	Sole Proprietorship (Male)
Personnel	Two computer and machine operators (male); two computer instructors (female)	Two computer and machine operators who also serve as computer instructors (male)
Number of Computers	Four	Seven
Internet Access	Grameenphone EDGE Modem	Grameenphone EDGE Modem

Best Selling Public Services	Downloading of public exam results, online application for passport and visa, electricity bill payments, land copy application.	Online application for passport and Indian visa form completion, downloading of public exam results.
Best Selling Private Services	ICT training, email, Skype chat, Skype weddings, Internet browsing, printing, photocopying, online job applications, photo ID, Facebook messaging.	ICT training, English and Bengali language training, email, Skype, Internet browsing, photocopying, photo ID, online job applications, printing.
Involvement in Development Projects	e-agriculture (on-going), e-clinic (completed)	e-agriculture (on-going)
Promotion Activities	Farm to farm awareness campaign, free printing for farmers, leaflets, word of mouth.	Word of mouth
Customer Profile by Sex	70% male, 30% female	70% male, 30% female

Interestingly, in Sharsha, the telecentre did not get any help from the Union Parishad. The school headmaster explained that before the establishment of the telecentre, villagers had no idea what a computer is. When it was established, nobody were against it as they did not know its benefits or demerits. The telecentre owner had no idea whether he would make money or not. Eventually, both telecentres thrived and are operating sustainably. They offer a full range of private and public e-services and are involved in development-oriented activities executed by Katalyst and/or BIID. An important private service provided by these centers is ICT training. Both have developed training modules on Microsoft Office, Internet browsing, social networking, computer graphics and multimedia editing. The trainings vary from three to six months.

The Kapasia telecentre conducted several promotional and marketing activities to increase patronage. The owners distributed leaflets and even went farm to farm. The Sharsha telecentre merely relied on word of mouth. The owners of both telecentres claim to have a predominantly male customer base (70 percent).

Table 3: Profile of Male and Female Respondents

Occupation Groups	Kapasia	Sharsha
<i>Male Respondents</i>		
Students	Total of 4. Ages range from 21 to 30. Higher secondary school (1), Diploma course in agriculture (2) and MBA (1).	Total of 7. Ages range from 16 to 27 years old. Secondary school (2), higher secondary school (1), university (3) and masters (1).
Professionals	Total of 2. Ages range from 55 to 79. Married with three to six children. Job: pharmacist and teacher. Engage in small business.	Total of 3. Ages range from 25 to 48. Married with master's degree. Job: teachers and private firm employee.
Businessmen	Total of 4. Ages range from 32 to 53. Married with zero to three children. Businesses: poultry, clothing and trading.	None
<i>Female Respondents</i>		
Students	Total of 2. Ages range from 17 to 19. Higher secondary school (1) and university (1).	Total of 9. Ages range from 16 to 22. Secondary school (1), higher secondary school (6), university (2) and masters (1).
Professionals	Total of 2. First respondent: Local public servant; 40 years old; married with three children; first year honours. Second respondent: primary school teacher; 30 years; married with two children; secondary school.	Total of 1. Professional in the development sector with a bachelor's degree. Age is 27 and single.
Housewives	Total of 6. Ages range from 28 to 50 with one to three children. No education to secondary education.	None.

Table 3 looks at the profile of male and female respondents included in this study. The authors decided to present the respondents in terms of occupational groups given similarities in individual characteristics among group members and given the differences in treatment among occupational groups as a consequence of community ideology. For males, the occupational groups found were students, professionals and businessmen, and for females, these were students, professionals and housewives. In Sharsha, the

field interviewers found a few businessmen visiting the telecentre but they did not wish to be interviewed. No Sharsha housewife visited the telecentre during the data gathering period and the telecentre operator cautioned against going to their homes for interview purpose; stating that their husband would not like this. All respondents are Bengali Muslims except for one male respondent in Kapasia who is a Bengali Hindu.

Men and Women Inclusion in Digital Bangladesh. This subsection presents the inclusion of men and women in Digital Bangladesh in terms of access and usage to ICTs, language proficiency and computer literacy. Although women have become more included in Digital Bangladesh, the level of inclusion is still farbehind as compared to their male counterparts. Moreover, in both villages, the level of inclusion is higher among females belonging to the student occupational group. Female professionals and housewives in Kapasia are likewise more included while Sharsha housewives are most digitally excluded. For the men, there is not much difference among occupational groups in both villages. They have more or less equal access to ICTs albeit they utilize these differently.

Table 4 presents the villagers' access to computer and Internet. Basically, all occupational groups in both villages visit the telecentres to access computers. The difference is that, unlike females, many male respondents in both villages also have their own ICT devices (desktops, laptops and mobile phones). Popular mobile phone brands in the area are Nokia and Symphony. They can also access computers in their workplaces as well. On the other hand, female respondents in both villages have access to the ICT devices of male family members such as their husband, uncle, brother and son. Five female respondents – three in Kapasia and two in Sharsha – were found with their own mobile phones. Many female respondents do not have access to the Internet as they simply (or are allowed to) study computer software programs. All male respondents can access the Internet without any prohibition either at the telecentre, workplace or at home using Flash (Teletalk) or Zoom Ultra (Citycell) Internet modems.

Table 5 compares computer and Internet usage by male and female respondents in the two villages. While male students use computers and the Internet for entertainment, information and social networking purposes, female students utilize the computers more to learn software programs. As a result, female students spend more time using the computers in the telecentre (2 to 6 hours per day) compared to their male counterparts (1 to 3 hours per day). Female students can only learn to use computers in the telecentres since they do not have their own computers and need to request male family members' permission to access their devices. The few female students who have mobile devices use these mainly for communication – not for Internet browsing. They keep their phones open from 30 minutes to two hours per day. Male students, on the other hand, use computers for all purposes. For entertainment, they download music, play games and watch movies. For information, they retrieve news and job vacancy announcements from various websites. For social networking, they log into Facebook and youtube. Many of them have their own mobile phones and leave these open for 24 hours a day. Kapasia male students use their phones for communication around 4 to 6 hours daily while their Sharsha counterparts use it when needed.

Akin to the male students, male respondents who are businessman and professional in

Kapasias and Sharshas have no problem accessing computer and Internet whether at the telecentre, workplace or home. Whenever needed, they utilize ICTs for information, business, social networking and entertainment. Male professional respondents in Kapasia work as pharmacist and a teacher but have small agriculture-related businesses on the side. In this sense, they obtain information on agriculture and fisheries over the Internet. In Sharsha, the professional respondent mentions using ICT to listen to religious programs. Businessmen in Kapasia use ICTs for communicating with suppliers, computing taxes and making bill payments. They also download the exam results of their children. All male professional and businessmen respondents in both communities have mobile phones. Depending on need, they have Internet connection. Their mobile phones are open all the time and use these phones for communication, entertainment, information and social networking three to four hours a day.

Table 4: Access to Computer and Internet of Male and Female Respondents

Occupation Groups	Kapasias	Sharsha
<i>Male Respondents</i>		
Students	Access from the telecentre and from school. Laptop and desktop computers (3). Laptop computer only (1). Internet access: all devices.	Access from telecentre during their spare time. Laptop computer at home (1). Mobile phones with Internet access (2).
Professionals	Access from telecentre. Mobile with Internet access (1). Computer at home (0).	Access from the telecentre and from the school they are working in. Laptop at home (2).
Businessmen	Access from telecentre. Laptops (2) and mobile phones with Internet (2).	None.
<i>Female Respondents</i>		
Students	Access from telecentre; only one uses the Internet.	Access from telecentre and device owned by male family member. Mobile device without Internet access (1).
Professionals	Access from telecentre; only one uses the Internet. Access to child's laptop computer (1).	Access from work and telecentre.
Housewives	Access computer only (2) and computer with Internet (4) from telecentre. Access to child's mobile device with Internet connection (1).	None.

The female professional respondents and housewife respondents in Kapasia have limited access to the computer and Internet. The female professionals in Kapasia do not hold any administrative posts in their organizations – one is a teacher and the other a public servant. In light of this, they utilize ICT in the same way as the housewife respondents in their community do. All of them go to the telecentre to know exam results, get certificates, pay bills and download travel documents. Some of them use emails and social media, particularly to communicate with their husbands who are working abroad. The female professional respondent from Sharsha used to have Internet access in the office. But, when she left the job, she needed to access computers and the Internet from the telecentre. She uses ICTs for online shopping, job circulation and obtaining current news. In light of this, she visits the telecentre only when needed. Regarding mobile phones, which some of them have, they use it strictly for communication purposes. Unlike the men, they do not keep their phones open for 24 hours a day. Rather, their phones are open for two to three hours daily to conserve the battery.

Table 5: Access to Computer and Internet of Male and Female Respondents

Occupation Groups	Kapasia	Sharsha
<i>Male Respondents</i>		
Students	Entertainment, social networking, education, news, job information, etc.	Entertainment such as playing games, listening to music. Use ICT for social networking (facebook and twitter), get news information and learn computer programs.
Professionals	News, business and entertainment. Also, information on agriculture and fisheries.	Work purpose, social networking, news and religious programs.
Businessmen	Business purpose such as communicating with suppliers, computing taxes, bill payment, etc. One gets exam results and one used it to make posters for his election bid.	None.
<i>Female Respondents</i>		
Students	Learn software programs, get current news and for entertainment such as music, videos, pictures, etc.	Learning computer software. Some use it for entertainment and getting news.
Professionals	Get certificates, know exam results, find out current events and for entertainment.	Online shopping, job circulation and obtaining news.

Housewives	Social media and emailing to communicate with family members abroad. Also, for paying bills, knowing exam results, downloading travel documents and obtaining certificates.	None.
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Regarding computer literacy and English language proficiency, there is a marked contrast between occupational groups. Male and female student respondents in both villages have a good working knowledge about computers due to the training received in the telecentres. They learned to operate Microsoft office, instant messaging, emailing, browsing, blogging, social media and others. Likewise, they have some working knowledge of the English language. Most student respondents describe themselves as having moderate to excellent English proficiency. All of them claim to be able to navigate the Internet in English. On the other hand, professional and businessmen respondents in both villages know how to use Microsoft office, emails, instant messaging and browsing. However, their level of competence is far behind comparing to students as they (professional and businessmen) require a longer period of time to accomplish these tasks. Hence, they prefer to go to the telecentre to use ICTs as an operator based in the telecentre could assist them. Another alternative for them is to ask their children (or wife if she is competent enough) to help them using ICTs at home with their devices. Although they have moderate English proficiency, they are not confident to navigate the Internet by themselves.

Table 6: Levels of Digital Inclusion/Exclusion of Male and Female Respondents

Tier	Gender and Occupational Groups	Description
1 (Most Included)	Males: Students, Professionals and Businessmen	<p>Access to computer and internet at the telecentre, workplace and/or school. Unrestricted and very frequent visits to telecentre.</p> <p>Access to ICT device at home and ownership of multiple ICT devices with Internet access such as desktop, laptops and mobile.</p> <p>Moderate to high computer literacy and English proficiency.</p> <p>Extensive usage of ICT devices.</p> <p>Usage of ICT devices for entertainment, information, education, communication, business, bill payments, exam results and social networking.</p>

2 (Relatively Included)	Females: Students in both villages	<p>Access to computer (mainly) and Internet (sometimes) at the telecentre and/or school. Frequent visits to telecentre for training purposes.</p> <p>Access to ICT device at home if permitted by male family member.</p> <p>Some own mobile phone and fewer with Internet access.</p> <p>Moderate usage of mobile phones.</p> <p>Moderate to high computer literacy and English proficiency.</p> <p>ICT devices used mainly for education and communication. To a limited extent, for entertainment and information.</p>
3 (Relatively Excluded)	Females: Professionals in both villages and Housewives in Kapasia	<p>Access to Internet at the telecentre and/or workplace. Moderate number of visits to telecentre.</p> <p>Access to ICT device at home if permitted by male family member.</p> <p>Some own mobile phone and most without Internet access.</p> <p>Limited usage of mobile phones.</p> <p>Poor to moderate computer literacy and English proficiency.</p> <p>ICT devices used mainly for bill payments, exam results, social networking, online job applications and communication.</p>
4 (Most Excluded)	Females: Housewives in Sharsha	<p>Access to Internet at the telecentre. Rare number of visits to telecentre.</p> <p>Access to ICT device at home if permitted by male family member.</p> <p>Few own mobile phones.</p> <p>Poor computer literacy and English proficiency.</p> <p>Very limited usage of mobile devices (for communication purposes only).</p> <p>ICT devices used mainly for communicating with family members living abroad.</p>

In this manner, competence of those respondents in Kapasia who are housewives may seem to be at the similar level of the professional respondents. Although they do not know any computer program, they are still able to access computers and the Internet with the help of the telecentre operators. They claim to have moderate English proficiency, especially since their husbands work abroad and try to teach them some English, but this knowledge is not enough for them to navigate the Internet by themselves. In Sharsha, the telecentre operator mentioned that very few housewives go to the telecentre and if they do, it is mostly to use Skype with their husbands who are working abroad. They do not go to the telecentre for any other reason. Women Empowerment Specialist Afroza Akhter, one of the experts interviewed for this study, explained that rural women in Bangladesh do not have access to computers and Internet mainly due to limited knowledge about the device and the potentials the device have to offer them to improve their lives. To quote: these women “do not know how to use these devices in its optimum level and to their maximum benefit.” Poor English proficiency and computer literacy are only secondary reasons for not accessing and using ICTs.

The extent of digital inclusion or exclusion of men and women in the two villages are presented in Table 6 using the multi-tiered approach to and gendered reading of citizenship. At the highest level, one would see male respondents whether students, professionals and businessmen. Media specialist AHM Bazlur Rahman, another expert resource person interviewed for this study, explains that rural women's access to digital devices depends on the support of men. The male family member buys the SIM card and the mobile phones. The female member may use the mobile phone but they are not the real owners. They need to seek permission from their husbands. They are also digitally excluded due to weak English language skills and also, they are not really interested in knowing about digital technologies.

From the field interviews, it is clear that the support of male family members is the key for rural women to be included in Digital Bangladesh. In both Kapasia and Sharsha, female student respondents have the financial support of their fathers or male relatives to study computers. Male relatives motivate them to study and in return, the female students help them navigate the Internet or teach them about computer programs. Some fathers are, however, cautious and allow their daughters to use computers only (not the Internet). In Kapasia, many male members allow their wives to access and use ICTs for various reasons. For one, the husband or male relative is working abroad and the wife needs to fill in as head of the household in his absence. For another, the husband needs the help of his wife to navigate the Internet, particularly if she is smart and competent. There is only one case of a female respondent who did not need the approval of a male relative to use computers. The respondent, however, is financially independent and does not bother with the protestations of others in regard to her usage of ICT facility.

Gender Role Perceptions and Media Consumption Patterns. This subsection discusses the perceptions of respondents regarding gender roles at home and their media consumption patterns, including the frequency of telecentre visits. Such discussion sheds light on the multi-tiered digital inclusion/exclusion of respondents in the two villages being studied. When asked about gender roles in society, all respondents

answered that men work outside to earn money while women do the house work. They did not find any discrimination in such constructions in this arrangement and thought this to be normal. It is worth quoting a male student respondent in this regard who stated: "Mothers are not busy with job or studies so they have to do the work at home." A female student respondent echoed her male counterpart: "Fathers need to go to the city for work and leaves the wife and children at home. Father is the bread winner and mother takes care of the home and children."

Table 7: Perception about Gender Roles in the Home of Male and Female Respondents

Occupation Groups	Kapasia	Sharsha
<i>Male Respondents</i>		
Students	Decision-making: husband and wife. Wife's decision domain: health and education.	Decision-making: husband and wife. Housework: Men can help.
Professionals	Role: Husbands as heads of the family. Housework: Men should help.	Role: Husband takes lead role. Wife can express opinions. Housework: Men can help.
Businessmen	Housework: Men and women must help. Role: Women can study and work.	None.
<i>Female Respondents</i>		
Students	Decision-making: husband and wife. Wife's decision domain: education, health and family planning.	Decision-making: Husband and wife share opinions and participate. Housework: Men can help.
Professionals	Decision-making: women are listened to. Housework: women do but male members help out.	Decision-making: family consensus. Housework: all.
Housewives	Role: Since husbands are abroad, wives play the role of both father and mother.	None.

Table 7 presents the perception about gender roles in the home of male and female respondents. Based on the interviews, discussions about gender roles in the home revolves around three areas – who is the head of the household, who does the household chores and who makes the important decisions. As a general rule, respondents believe that the father is the head of the household. As the head, he ensures financial sustainability of the family – food on the table, schooling for the children, medicines during illnesses, clothes on their backs and roofs over heads. In this regard, the father needs to go out of the homes or if needed, to the city or to distant lands. The mother, on the other hand, takes care of the day-to-day operations of the household and the needs of the children. She makes certain that the chores of cleaning, cooking, washing, ironing, etc. are taken care of.

The respondents mentioned that they believe the mother should receive help in performing her duties. Whenever they have time, the father and children support in housework. The main responsibility of the father is to be the bread winner and the children, to study. Given such composition of gender roles in the family, the mothers are tied to the home while the rest of the family members enjoys greater mobility. The father goes about their business unhindered while children move about as long as these are related to learning.

These gender roles are reflected in the media consumption and utilization patterns in the two villages. All respondents have a rather rich media environment in their homes with daily newspapers (Prothom Alo, Kaler Kontho and Bangladesh Protidin); weekly newspapers (Bonik Barta, Spondon and Lokosomaj), radio (AM and FM); and television mostly with cable connection. Two households in Kapasia even have video players for the purposes of watching movies. Media consumption and utilization patterns have much to do with gender roles vis-à-vis decision-making. In Kapasia, although the father makes the key decisions in the household, the mother is consulted before a decision is made and can be the main decision maker in matters concerning education, health and family planning. Since husbands of some housewives work abroad, wives need to be the main decision makers, yet it is found that they keep their husbands informed about it via Skype. In Sharsha, there is some variation. The father is the main decision maker and the mother is “allowed” to express her opinion and participate in the process. The only exception was the female professional respondent who stated that decision making in her home is a consensual process. The student respondents in both villages are consulted on matters that affect them such as where to go for higher education.

In this sense, media consumption and utilization is influenced by one’s level of decision making and degree of literacy. Men are found to be more literate than women. In Kapasia, the average literacy rate for men is 57.4% percent and for women, 55.5% percent. In Sharsha, the average literacy rate for men is 47% percent and for women, 38.25% percent (Banglapedia: 2015). Male respondents in both villages read newspapers to know national news, foreign news, development news, agriculture, politics, job announcements and sports. They read newspapers from 30 minutes to two hours per day. They listen to radio for news and religion for about 30 minutes to one hour per day with one professional male respondent in Sharsha even listening to BBC Radio, Iranian Radio and Voice of America. They watch television for news, information and entertainment. Among housewife respondents, only two are found to read newspapers

irregularly. Female student and professional respondents, on the other hand, read newspapers for national news, politics, sports and job search for around one hour per day. Student respondents are found to listen to music over the radio. All female respondents watch television for news, teleserials, movies, lifestyle, musical shows and celebrity gossip for around one to three hours per day. As male respondents are expected to be main decision makers in the family, they need to gather more information and listen to the advice of knowledgeable persons (whether from journalists, politicians or religious leaders). Table 8 lists the reasons for media utilization of male and female respondents.

Women empowerment specialist Akhter explains that there exists a cultural mindset that women should not be seeking out information of significance such as national news, world news and politics. Hence, they tend to utilize the media for entertainment purposes such as watching teleserials, Hindi films and celebrity gossip. Also, given their overwhelming household responsibilities, women are constrained to go out of their homes to seek information. Rather, women are prone to seek information through television, newspapers and traditional social networks. ICT specialist Shahid Uddin Akbar, another expert resource person interviewed for this study, agrees with the claim of Akhter and state that women “do not get enough time to manage their family and do not even have time for their own selves.” Hence, women do not actively seek information.

Table 8: Reasons for Media Utilization of Male and Female Respondents

Occupation Groups	Kapasia	Sharsha
Male Respondents		
Students	Newspaper: country situation, job advertisement, politics, sports, celebrity gossip. Radio: music TV: entertainment, talk show, news, teleserial, movies, sports.	Newspaper: Current events, sports, lifestyle Radio: News, music TV: News, teleserials, movies, sports, music,
Professionals	Newspapers: News about country, agriculture, entertainment, foreign affairs, health, politics and sports. Radio: news TV: news, music.	Newspaper: Politics, sports, job circulation Radio: News, religion TV: news, sports, talk show, teleserials,
Businessmen	Newspaper: current affairs, politics, sports, country situation, business, world news, development news, accidents.	None.

	Radio: news and music TV: Teleserial, talk show, news, lifestyle	
<i>Female Respondents</i>		
Students	Newspaper: Sports and entertainment information. Radio: Music TV: News, quiz shows, lifestyle, teleserials and movies.	Newspaper: Current events, lifestyle, job searching. Radio: Music. TV: Musical shows, entertainment, news, teleserials, documentary, Hindi films
Professionals	Newspaper: News, job search and sports. TV: Entertainment, movies and news. Computer: Depends on what is needed.	Newspaper: current events, sports and job search. TV: news, entertainment and music.
Housewives	Newspaper: Politics and entertainment. TV: Teleserials, movies, news and media gossip.	None.

An important finding was that many respondents thought that the geographical locations of telecentres are usually in areas which are far from their homes. One female respondent in Kapasia mentioned that she has a hard time going to the telecentre given that it is “far away” from her home. Community Media Specialist Rahman states that telecentres are usually located in the union parishad offices, which are situated far away from schools and homes. Men have the necessary mobility and therefore, they can travel to those telecentres. By contrast, women are tied to their homes due to their chores and can hardly go to the telecentre. He suggests, “perhaps, the telecentre should be the one that is mobile.”

Table 9: Frequency of Rural Telecentre Visits of Male and Female Respondents

Occupation Groups	Kapasia	Sharsha
Male Respondents		
Students	Once to four times per week.	Three to seven times per week
Professionals	Twice a day or as needed.	Once or twice a day.
Businessmen	Once a day.	None.
Female Respondents		
Students	If there is computer training, once a day. If no computer training, once a week.	If there is computer training, once a day. If no computer training, once or twice a week.
Professionals	Twice to four times per month.	Once or twice a day.
Housewives	If husband resides abroad, three to four times per week. If no husband abroad, twice to thrice per month.	None.

Table 9 shows the frequency of telecentre visits of male and female respondents in both villages. Male respondents in both villages visit the telecentres more often with professional and businessmen respondents visiting once or twice a day. Male student respondents frequently call on telecentres without any restrictions. Their female counterparts, however, can go once a day conditionally if there is computer training. Otherwise, they need to come up with a good reason to visit those telecentres such as data encoding and browsing to do class assignments, having their pictures taken, obtaining school information and buying mobile loads. The visit of female professionals and housewives in Kapasia depends on need from paying bills to photocopying, from securing government documents to knowing exam results of their children. It is found that housewives with husbands working abroad visit more often as they need to receive foreign remittances and speak with their husbands via Skype. It is found that a female professional respondent from Sharsha visits the telcentre frequently during the data gathering period as she is searching for a new job and also because her father wants her to conduct a research about pest control. Apparently, her father was having problems in his farmland.

Gender Role Perceptions and Cultural Identity. This subsection illustrates the perceptions of respondents regarding gender roles in the community and how these are reflective of their cultural identity (secular or Islamist). In the home, there are many similarities about gender role perceptions among respondents in Kapasia and Sharsha. Community identification towards being secular or Islamist is not very evident. However, when it comes to gender roles in the community, there exists a wide gulf between them. In Kapasia, male and female respondents mentioned the women can have dreams for

higher education and for careers. Female student respondents actually plan to work after graduation and there is no barrier for them to do this. A male respondent who is a businessman said that he gives priority to his daughter's education. He described his daughter as being very smart like her mother and would see it such as waste of her talent if she did not pursue higher education.

In addition, women members of the union parishad can participate freely in discussions and work side by side with men. Such a situation in Kapasia is significant as explained by Community Media Expert Rahman: "There are many projects at the union parishad where women participation is mandatory by law. However, in reality, the situation is different. Women participation is only in paper. They do not attend meetings and do not participate in decision making. When they join meetings, they do not talk or ask anything but they are sometimes listed as the chair of the project." So, active participation of women in the union parishad activities in Kapasia is extraordinary.

Table 10: Perceptions about Gender Roles in the Community of Male and Female Respondents

Occupation Groups	Kapasia	Sharsha
<i>Male Respondents</i>		
Students	Education and work: more opportunities now but still less compared to men. Social events: limited role but it is changing.	Education: some scope for higher education. Work: few have jobs. In general, not appreciated by most people.
Professionals	Social events: women and men are becoming equal in taking responsibility.	Education and work: religious norm prevents women from working and going for higher education. Social events: women are prohibited. Marriage: child marriage is practiced.
Businessmen	Work: Women can work but men get to do it first.	None.
<i>Female Respondents</i>		
Students	Work: women can work outside the home.	Education and work: women cannot have higher education and cannot work outside the home. Marriage: women should marry early or else they get spoilt.

Professionals	Social events: women can be a member of the union council and work side by side with male colleagues. Also, can be active member of a dance club.	People here do not like it that women are working.
Housewives	Social events: With the absence of their husbands, they deal with the community directly.	None.

One female professional respondent in Kapasia expressed that she participates in the union parishad and feels that male members value her work. She also believes that her opinions are respected. A male respondent who is a student explained that the acceptance of women engaging in politics really depends on her qualifications. Apart from these, women are allowed to join social clubs and events such as being a member of a dance club or being involved in a development project. One female professional respondent admitted to be very active in the dance club and her male relatives do not say anything against this. A female professional respondent joined the “One House, One Farm” project. The project is an initiative of the government to ensure the survival of agro-livelihoods and family farming through e-financial inclusion and empowerment of smallholders and the underprivileged. It started in 2009 with the following target beneficiaries: poor women-headed households, households with homesteads only, those who sell manual labor with no regular income source and those who own land up to half an acre.

The advancements in women empowerment in Kapasia, however, should be taken with a note of caution. All respondents stated that men still have more opportunities to study and work. Men also have greater freedom in joining social clubs and participating in political activities. A male respondent who is a businessman mentioned that in terms of religious organizations in their village, “women still are not welcomed to hold important positions.” However, as a male professional respondent predicted, “change is happening and doors of opportunities are opening for women.”

In Sharsha, a different picture emerges regarding gender roles in the community and politics. It is found that generally, it is not acceptable for women to pursue higher education and to work outside home. A male respondent who is a professional mentioned that “there is a religious norm which prevents women from working, receiving higher education and engaging in social events. Women are supposed to stay at home and bear children. This is one reason why child marriage is still practiced here.” One female student respondent explained that there is pressure to marry early, as the perception is that women easily become rotten like perishable vegetables if they do not marry early. “Women cannot aspire for higher education and she cannot work outside the home,” she expressed. The few women who broke the norm were subject to ostracism and social ridicule.

A female respondent who is a professional narrates her own experience. She is thankful

that her father is broad minded and allowed her to work in a development agency. However, men in her community did not like the fact that she is working and do not consider her as a good marriage material. So, she remains single at the age of 27. A similar case is true for women in the village who have gone abroad to work. Das (2012), in her study, studies lowly skilled and poorly educated female migrant workers from Sharsha who have gone abroad as domestic helpers. Their families are looked down upon by their neighbors. Respondents also discussed norms with respect to women participating in community activities. One female respondent who is student stated that women are not allowed to engage in social work and organize community events. They cannot be the chief guest in formal meetings, but the rule can be flexible for social events. Villagers frown on women engaging in politics. Although women have the right to vote and be elected into office, it is very difficult for them to do so. One female student respondent complained that “some women prevented them from voting. Someone else votes for them. Women cannot hold public office.”

But, there are exceptions to this rule. A male respondent who is a student spoke of a woman being the land officer in the village but this is due to her extraordinary qualifications. Also, a female student respondent volunteered to be a guide for Norwegian development workers who conducted basic social services to poor people in the area. The involvement was, however, a short one. One organization where female students can participate in without prejudice is the Islamic Foundation for the promotion of student welfare.

In general, most Sharsha respondents have an issue with mixing with people from other religions and the mixing of genders in public spaces. Although most have a positive attitude towards meeting other people, they prefer meeting educated people, honest and (most important of all) follows the same religion. They are afraid that a non-Muslim friend may misguide them and cause them breaking their religious practices. So, in their own circle of Muslim friends, they discuss about personal matters, self improvement, jobs and religion. The male professional respondents are also very active in the mosque committee and one even founded an Islamic orphanage. One respondent stated that they “live in peace because the people here share the same values and religious practices.” Another respondent explained that “they are Muslims and Muslims are dominant in the community, so there are no problems in the village. There are no unorthodox ideas.”

With such an Islamist cultural identification, they do not wish for women to mix with men freely in public as this is not in accordance with local religious norms. Such is the reason why female student respondents need to wear headscarves and long dresses in public; and why housewives are not encouraged to visit the telecentre as this is considered a public space. ICT expert Akbar warned that “women are not habituated to use computer in public spaces like cyber cafes and any shared access points like telecentres.” Women empowerment specialist Akhter adds that telecentres are not gender sensitive. There are “very few telecentres across the country whether government or privately owned that provide computer trainings exclusively for women. Also, most of the computer instructors are male, which may be a disincentive for conservative women. The social mindset and lens in the country is not favorable to womens’ mass participation in technology.”

Such dominance of Islamist cultural identity is causing the more secular-minded women in the village to migrate elsewhere. The Sharsha female professional respondent believes that it would be better to live somewhere else if they wish to have a career. “The people here do not want me to work. This village is Muslim dominated. So, I am seriously planning to leave this place even if that means missing my father and mother.”

Case Studies. The cases of some respondents – two from Sharsha and two from Kapasia – are presented in this section. Sharsha cases illustrate two types of women: the first being fully compliant with the prevailing Islamist community ideology but was successful in creating an ICT-related social space for herself while the second rebelled against the cultural mindset and as a result, was ostracized by villagers. The cases from Kapasia, meanwhile, showcase the circumstances that enable relatively greater women digital inclusion: the first case features a father with a liberal cultural mindset towards women in his family and the second case features a married woman with no options but to play the role of both father and mother to her children since her husband works abroad. It should be noted that the names used in the cases are not real.

Tale of Two Women in Sharsha. Ameena Begum is a 19 year-old single woman studying in a local college. She started using computers in 2013 and accessing the internet in 2014. Her usage of ICTs was life-changing in many ways. First, she learned how to use computer software programs like MS Office. As her uncle had his own computer, she was able to practice what she learned at home. Later, she learned how to use an email, browse the Internet and communicate via social media. As she is conversant in both English and Bangla, the telecentre operator asked her to help out in their e-agriculture project. Herein, she studied many things relating to agriculture and she became one of the links between the farmers and the agriculture department. Farmers called her up to ask agriculture-related information such as pests, fertilizers, soil, crops, etc. Some even inquired about politics, sciences and health. She became some sort of “educated person.” Soon after, farmers from adjacent villages also called her up.

Within this process, Ameena realized a change in her. She became more positive in meeting new people. She now believes that meeting new people means learning new things. Her activities and dynamism became known to a Norwegian development organization, which appointed her as the chair of their site in Sharsha. As chair, she shared updated information on products, market to the community people. Ameena considered herself fortunate because her family fully supports her activities at the telecentre. However, she is aware that there is gender discrimination in her community. Women are not allowed to work outside their home. They are supposed to marry at a young age to be socially acceptable. She just hopes that she can go for higher education and work as a professional.

Feeroza, on the other hand, is a 27 year-old educated woman. Like Ameena, she aspired to work as a professional and when villagers frowned on her ambition, she did not mind. Instead, she went to work for a renowned NGO called BRAC. This was in 2009. Two years later, she transferred to the country’s largest telecommunication company Grameenphone. In her work, she learned how to use the computer and Internet. However, due to some reasons, she had to quit her job and move back to her village to help her family. As her father is old and ill, she needs to take care of family farm and

mango trees. She regularly purchases agriculture inputs and implements. Although her family appreciates what she has done and what she is doing, she feels pressure from the community as they treat her as an outcast. They already consider her “spoilt”. No one would marry her in the village.

For this reason, she frequently visits the telecentre to update her curriculum vitae and apply for work. She also browses to learn about business management and agriculture. She hopes to get a job outside the village soon. She wants to meet people who are open-minded and appreciative of women who are working as professionals. She also wants to be involved in politics but she knows this will not be permitted in her community. For Feeroza, finding a job outside the village will save her from subtle social discrimination.

Kapasia’s Digital Inclusiveness. Aminul Hossain is a 32 year-old businessman. He started using computers in 1997 for business, entertainment and information purposes. As he is computer illiterate, he needs the support of the telecentre operator to use MS office and navigate the Internet. Although he owns a mobile phone with Internet access, he could not operate it. For this reason, he turns to his wife and daughter to seek help. They help him in sending SMS and browse the Internet. Aminul has no problems with women helping him with ICTs. For him, women are just like men. He gives special attention to his daughter’s education and thinks that his wife is smart and can manage a lot of things for him. He feels lucky to have such intelligent wife and daughter. He has no insecurities. It should be mentioned that he is also general secretary in local mosque and holds important positions in the Bazaar Business Committee and Sromik League (Laborers’ League).

Rijia on the other hand is a 35 year-old married woman. Her husband worked abroad several years ago. Being the only adult in the household, she needed to be both father and mother to her children. She had no option but to learn ICTs and visit the telecentre as she needed to communicate with her husband via Skype and collect remittances from abroad. She started using computers in 2012 and a year later, she used the Internet for the first time. At first, it was very difficult for her as she just completed Grade 5, does not know English and never used a computer before. But, she got a lot of help from the telecentre operators. Now, she is proud that she can download her daughter’s examination results. Rijia is a loner. She is not affiliated with any formal or Informal organization. She prefers to be with her children. But, she visits the telecentre three to four times a week. She complains that the telecentre has frequent power disruptions and slow Internet connectivity. But, she feels that ICTs have helped her cope with her situation.

Summary and Conclusion. As can be gleaned from the previous section, it is palpable that individual and community citizenship characteristics affect the digital inclusion of men and women in the select Bangladeshi villages. Table 11 spells out the notable individual characteristics – occupation, civil status, education and husbands as migrant workers – that affect women’s digital inclusion.

Table 12, meanwhile, describes how ideological characteristics of community such as secular and Islamist affect women’s inclusion. These ideological characteristics, however, should be looked upon more as a scale rather than a dichotomy. Although the Kapasia villagers expressed a more secular view, they are firm believers in Islam, they

stay true to many of its teachings and actively involve themselves in its Islamic activities. They similar to their urban counterparts, have found to be much more liberal. In those studies, women belonged to freethinking urban households and can make decisions on their own regarding their field of study, career and/or business. Women likewise had easy access to ICTs and most of them own their devices (laptops, desktops and mobile phones being very common). At any rate, when speaking about rural villages, Kapasia would be relatively secular.

Table 11: Description of Individual Characteristics affecting Women's Digital Inclusion in the Select Villages

Characteristics	Description
Occupation	Students have a high level of digital inclusion in both communities. This is because it is the students' job to learn and computers are part and parcel of the learning process. Professionals likewise have a moderate level of digital inclusion given their need to search for jobs, communicate with colleagues and look for work-related information.
Civil Status	Once married, the key responsibility of women is to look after the home and their children. The enormity of the responsibility affects their mobility (like going to the telecentre).
Education	Students have a high level of digital inclusion since they are computer literate and have a working knowledge of English – the language most used in the Internet. However, telecentre operators are present to assist the other groups of women who may not be tech savvy.
Husbands as Migrant Workers	Since husbands are working abroad, the housewives need to fill in their shoes in terms of becoming the head and main decision maker of the household. They need to be mobile and search for information in order to make better decisions.

Table 12: Description of Community Citizenship Characteristics affecting Women's Digital Inclusion in the Select Villages

Characteristics	Description
Secular (Kapasia)	Women are mainly responsible for the children and home but can make decisions on certain matters such as education, health and family planning. They are allowed to study higher education and embark on a professional career as long as they fulfill their household duties. They are not prohibited to join social clubs and organize social events. Women with good qualifications are encouraged to hold political positions. The participative role of women in household, community and politics warrants their access and use of ICTs.

Islamist (Sharsha)	Women are mainly responsible for the children and home. They cannot make decisions without the consent of their husbands but are allowed to voice their opinions. They are not encouraged to pursue higher studies or embark on professional careers. Rather, they are motivated to marry early. They can participate in religious projects and foundations but dispirited to organize community events. Some are prevented from voting and engaging in political activities. As a norm, married women should not freely mix with men in public spaces. The passive role of women and restrictive cultural norms become hurdles in accessing and using ICTs.
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In light of this, the paper reiterates its argument that enabling policy environments instituted by the Government of Bangladesh over the past six years have not necessarily improved digital inclusion, particularly with respect to women. Rather, the digital inclusion of women is facilitated by both the individual's socio-demographic context (education, occupation and civil status) and the citizenship status of her local community in ideological terms (in a scale of being secular or Islamist).

Policy Relevance. Although the paper has many policy implications to women empowerment in general, it puts primary focus on the Prime Minister's Office program on Access to Information (a2i), which has established digital centers or telecentres all over the country. Based on the findings, some policy recommendations are presented to improve women's inclusion in Digital Bangladesh as follows:

- **Need for an Awareness Campaign.** Rural women still lack awareness on the benefits of ICTs. For this reason, many of them do not bother to visit telecentres. For these women who are already aware of the importance of ICTs, their digital inclusion is dependent on the support of men. In this sense, it is necessary to improve their awareness of rural men and women regarding ICTs. Men should see its relevance not only for their female children but also for their wives. The a2i program can include a more extensive awareness campaign in the rural areas in its plan.
- **Need for Digital Content for Women.** ICTs will only be accessed and utilized by rural women if they find these meaningful and relevant. Hence, there is a need to develop content for their specific needs. The a2i can have a unit dedicated to the development of localized content, which women can use as a platform in fulfilling their duties at home, community or elsewhere.
- **Need for Mobile Telecentres.** Rural women are tied to the home given their responsibilities in maintaining the household and rearing their children. They may not have time to go or be constrained by cultural norms to visit telecentres. In light of this, the a2i program may consider a mobile telecentre component.
- **Need for Telecentres to be more Gender Sensitive.** In the more Islamist villages, rural married women may be discouraged to enter telecentres since

these are considered public spaces where genders freely mix. It may be necessary to make telecentres more gender sensitive where there are separate areas for men and women; exclusive trainings for women; and female telecentre operators and instructors. The a2i program may place such innovations to make telecentres more inclusive.

- **Need to support female telecentre entrepreneurs.** The a2i program simply states that the telecentres should be managed and operated by one male and one female. This simple assumption of equality is erroneous in the Bangladeshi context given the difference in access to economic resources. The program may consider creating a special fund, which women telecentre entrepreneurs can utilize.
- **Need for monitoring systems.** The a2i program lists several impacts such as greater citizen participation in development, improvement of women's livelihood as well as the financial and social sustainability of telecentres. However, there is a need to build a monitoring system for measuring program impacts.
- **Need for including longer term enabling policies.** The study findings reveal that cultural mindset has a lot to do with women's inclusion in digital Bangladesh. Current government ICT policies need to be reviewed; gender aspects need to be incorporated as a vital concern. A shift in the role of women at home, community and society has to be achieved.

The paper also recommends further study into the dynamics of community citizenship characteristics and how these affect women's digital inclusion. The present study merely focused on ideological identifications of two villages and more villages should be investigated. The range of secular to Islamist cultural identity should also be looked into further. Other community citizenship characteristics along the lines of religion (Muslim, Hindu, Christian and others) and ethnicity (Bengali, tribal and others) should be conducted as well.

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INTRODUCTION

Internet and mobile phone penetration has opened-up new horizons for ICT based services to benefit communities at the bottom of the pyramid. Primarily driven by donors, development agencies, local and international NGOs, civil society, mass media, these services have extended even to the rural areas. Telecenter networks, for example, have reached previously inaccessible places using nonprofit and for profit models.

Although a large amount of work has been done in using ICT for Development, there has been no conscious effort to explicitly capture these initiatives. Hence, there is a pressing need to document success stories, lesson learnt and shortcomings. There is a call to write case studies on projects, programs and policies in this regard. As knowledge has become central to development, it is timely to publish a journal that specializes on ICT for Development issues. Academicians, practitioners and researchers can use the journal as a reference point for their work. It will contribute a great deal to strengthen knowledge management. Simultaneously, it will also enable them to share their experiences, works and knowledge.

OBJECTIVES

The ultimate objective of the working paper series is to articulate, capture and document success stories, best practices, lessons learnt and shortcomings of ICT4D projects or researches in developing countries.

TOPICS:

Academics/researchers/practitioners are invited to submit their work that addresses issues related to adoption, diffusion, and implementation and monitoring/impact assessment of ICT for development projects in developing countries. In fact, ICT4D being a crosscutting issue the working paper series will feature writing from almost any sectors or area namely E-Agriculture, E-Livelihood, E-Governance, E-Health, E-Education, E-Commerce, E-SME, E-Environment, Climate Change, etc in relation to ICT. The WPS encourages papers that are problem-finding, problem solving, forward-looking, sharing relevant experiences and investigating controversial and important issues.

AUDIENCE

The target audience of this working paper series are those who wish to learn how to encourage adoption of ICT, applications and impact assessment, and also researchers who are interested in the diffusion of ICT for developmental projects in developing countries. Therefore, the target audience includes ICT service providers, policymakers, and academics/researchers, students of social science, information systems, and information technology and development studies.

SUBMISSION REVIEW PROCEDURE

Researchers and practitioners will be asked to submit an abstract of the paper. Those whose abstracts have been approved will be invited to submit complete papers. Papers must be written in English. The full paper must be between 4,000 to 9,000 words including all diagrams and references, and in MSWord or PDF format. All submissions must have names, affiliations and full contact details (including email addresses) of all authors. Authors should utilize the APA Stylebook.

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