Measuring The Impact Of ICT On Women In Bangladesh

Alauddin Ahmed, Durdana Islam, Ahmed Ryadh Hasan
Independent University, Bangladesh (IUB), Chittagong Campus , School of Engineering and Computer Science, 12 Jamal Khan Road,   Chittagong-4000, Bangladesh

Nayel Jamilur Rahman
Independent University, Bangladesh (IUB), Chittagong Campus, School of Business, 12 Jamal Khan Road, Chittagong-4000, Bangladesh

Abstract — In Bangladesh women's involvement in ICT industries and ICT based government and non-government organizations changes the behavioral aspect of women's lifestyle and thereby affects the society as a whole. In this paper we study which social issues are influenced by the involvement of women's in ICT. We introduce a protocol for the development of women's informatization indicator, which refers to using, exchanging, and producing information and knowledge, utilizing ICT to advance women's status and their quality of life.

Keywords: Women, ICT, Gender gap, Informatization Indicator, Bangladesh.

1.0 Introduction

Information technology[1] has become a potent force in transforming social, economic, and political life globally. More and more, development strategists see the need for developing countries to embrace information technology both as a way to avoid further economic and social marginalization as well as to offer opportunities for both growth and diversification of their economies [1] .The uneven distribution of these technologies within societies as well as across the world has been termed "the digital divide." It reflects a division between the information "haves" and "have-nots" on many lines that often overlap—within countries by race, ethnic group, class, age, region, and gender; between countries; and globally, between those who have access to abundant information resources and those who do not have this access. Women within developing countries are in the deepest part of the divide, further removed from the information age than are the men whose poverty they share. The gender gap in the digital divide is of increasing concern; if access to and use of these technologies is directly linked to social and economic development, then it is imperative to ensure that women in developing countries understand the significance of these technologies and use them [2]. If not, lack of access to information and communication technologies becomes a significant factor in the further marginalization of women from the economic, social, and political mainstream of their countries and of the world. Without full participation in the use of information technology, women are left without the key to participation in the global world of the twenty-first century. According to the APC, IT will be one of—if not the—major development issues of the coming decades. If women are not actively present at all levels, we will see new forms of marginalization that could undermine other advances made by women in the twentieth century. This implies a crucial challenge to women to take on these issues [3].

ICT can be a powerful catalyst for political and social empowerment of women, and the promotion of gender equality [4]. The Beijing Declaration and Platform for Action [5] adopted at the Fourth World Conference on Women in 1995 drew attention to the emerging global communications network and its impact on public policies, as well as the attitudes and behavior of individuals. It called for the empowerment of women through enhancing their skills, knowledge, access to and use of information technologies [6]. It also included a strategic objective: "Increase the

---

[1] The term "information technology" (IT) tends to be used interchangeably with information and communications technologies (ITs). The latter recognizes the multiple technologies involved as well as the ubiquitous convergence of communications with information technology. However, the term "information technology" has come to include the idea of many technologies as well as the communications element. In general, IT tends to be used more in the United States, while ICT is the preferred usage outside the U.S.

participation and access of women to expression and decision making in and through the media and new technologies of communication"[7]. The WSIS plan of action [8] contains references to the special needs of women in relation to capacity building (removing the gender barriers to ICT education and training); enabling environment (promotion of participation of women in formulating ICT policies); ICT applications (e-health and e-employment); cultural diversity and identity (strengthening programs focused on gender-sensitive curricula in formal and non-formal education and media literacy); media (balanced and diverse portrayal); follow up and evaluation (gender specific indicators on ICT use and needs and measurable performance indicators to assess the impact of ICT projects on the lives of women and girls should be developed).

The paper is organized in the following way. In section 1 we discuss the importance and objectives of our paper under the heading introduction.   In section 2 we identify the important factors which differentiate the women informatization indicators in Bangladesh from all other core ICT informatization factors considered by United Nations, WSIS thematic meeting and various other ICT related working groups. In section 3 we propose a protocol to design informatization factors for ICT and women in Bangladesh with a flexible options to extend this modeled protocol for other third world countries.

2.0 ICT and Women: A Bangladesh Perspective

In Bangladesh, as elsewhere in the developing world, women play a central role in family, community and social development. However, women often remain invisible and unheard. Women more than men have to balance the complexities of surviving in extreme poverty, yet these women are excluded from discussion because they are often illiterate, they lack confidence and they lack mobility. ICT offer the opportunities for direct, interactive communication even by those who lack skills, who are illiterate, lack mobility and have little self-confidence. Here are some aspects of life which have a direct influence of ICT especially on women:

(i) Women's increased access to job Market and improve entrepreneurship using ICT: In the past women were only considered for household work and were left outside the mainstream of development. In today's Bangladesh, The scenario has not changed much. But with the advent of ICT, this conservative outlook about women is diminishing gradually. As a result we find more women are employed in various knowledge based industries such as computer-aided designing, graphic designing, composing etc. With this growing number of women employment the job environment is becoming more convenient and friendly for women. The provisions for ladies common room, green room etc are considered as a necessity now a day. This changed scenario indicates a positive attitude towards women employment. Consequently parents are becoming more aware about ICT and are interested to send their daughter to study computer science for better prospects in life even if they have to pay a fortune for their child's education. ICT is not only creating employment for women but also creating a chance for them to emerge as entrepreneurs especially in SME. Women are encouraged to take initiatives to invest in ICT and they are also improving their competence using ICT as an entrepreneur in different sectors. For example Gameen Telecommunications has explicit goal of helping Grameen Bank members shift from relatively low-yield traditional ventures, like animal husbandry, into the technology sector by creating micro-enterprises that can both generate individual income and provide whole village phones. And it has succeeded in many cases in this regard. Village Phones have increased income and savings accumulation among phone owners, mostly women. Moreover women entrepreneurs in other sectors apart from ICT are having more access to market information and as a result they enjoy distinct competency.

(ii) Increase of average household income in villages: The women phone operators are generally poorer than the average villager is. However, the income that they earn is significant, generally accounting for 30-40% of household income and averaging $300 per year in a country where average per capita income is $286. The operators are likely to be married (90%), and half of them have no formal education. Another quarter has primary education and the remaining quarter, some secondary education. 36 % identify themselves as housewives, and only 6% have some kind of formal employment (in government or business) [9]. The women operate their phone businesses while doing household chores or operating another business. The phones are used primarily for calls relating to financial matters, particularly relating to remittances, which are a significant source of village income. Strikingly among poor villagers, 38% of phone users had one or more family member living abroad.

(iii) Women empowerment: Women role in the family affairs, especially in decision-making, are no longer ignored. Now women earn for their family by means of ICT and this substantial revenue stream has elevated the women positions in their own households, and the society they belong to. The role models of women who actively participate in the socio-economic development can increase self-esteem and self-confidence of other women and therefore encourage them to push for changes in their own social status. Information and communication technology (ICT) is not just a technology but an inalienable weapon of women empowerment. in

the era of knowledge-based culture, Bangladeshis can achieve excellence through proper use of the ICT. For example Grameen telecom, Bangaldesh have created a 'phone culture' among women by enabling their access to communication tools from which they might otherwise be excluded. They have also shown that poor, largely uneducated women can master the skills and run a small business. Women phone operators have achieved economic and social empowerment within their households and communities.

(iv) Shrinking Information Asymmetry: Women in Bangladesh now acquiring more bargaining power as they are exposed to ICT specially World Wide Web through mobile phone, computer, Internet. They have become a potential store house of various news and reports. As Women entrepreneurs globally have said that access to information, especially market information, is their first priority in accelerating the growth of their business [10], We can ameliorate the economic status of women by shrinking information asymmetry through ICT.

(v) Improved Governance: ICT is also particularly useful in increasing the transparency and accountability of government, an application from which women can particularly profit .One example demonstrates how women used ICT to call upon a national government and a local administration for greater accountability and transparency. When women students in Bangladesh faced administrative inaction in response to increasing instances of campus rape, they publicized their situation on the Internet. The resulting international and national response pressured the university administration to conduct an inquiry .

(vi) Indigenous Knowledge: Traditionally, women have been the incubators and transmitters of knowledge relating to food processing, preservation, and storage, the growing of specific crop, nutrition, and health. Much of the knowledge that women in rural areas possess are scientific. IT can help organize and transfer this knowledge to outside communities that might benefit from it [11]. Thus IT can also help empower women through codification and dissemination of their indigenous knowledge. For example a knowledge centre in Bangladesh is assisting the Self-Help Groups of the village to establish a transparent database of saving and credit, and village youths are being enabled in computer application training and services. All these dreams of the past have come to reality now. The process is working well in the southern region of Bangladesh, where 20 villages have been brought under a program called 'Amader Gram Knowledge Centre, Bangladesh' by Bangladesh Education Friendship Society to develop a participatory monitoring and learning system at the village level by using ICT tools. The program is aimed to improve the quality of lives of the poor and the unemployed.

(vii) Easy-Family communication: The use of mobile and Internet even at home has given a widen opportunity to women in general to communicate the world. Women remaining in close-doors or of a conservative atmosphere to have the privilege to know about, the where about their relatives and friends by the blessing of ICT.

(viii) Increase Social awareness: Mass media have up righted the position of women in ICT sector all the more, advertisements, cartoons, telecasting, broadcasting all this projects female-awareness in society. Female no more lack in knowledge in fitting themselves in right places. This positively highlights the influence of ICT.

3.0 Women Informatization Indicators for Bangladesh: A Proposal

Over the past decade, the United Nations intergovernmental processes have played a leading role in identifying key issues and proposing strategic actions to enhance women's empowerment through ICT. For monitoring and evaluating the impact of ICTs on economic and social developments of women comparable statistics are critical. However, internationally comparable information society statistics on women are very limited, particularly in the case of Bangladesh. In this paper we propose women informatization indicators with a basic protocol of selection criterion of indicators which will be helpful for Bangladesh government, Non Government Organizations, donor agencies, research institutions, academic institutions and private sectors to design and implement ICT based studies for future decision making and policy issues. It is hoped that for developing countries women informatization indicators are to be of use to develop their statistical data collection programs on the women empowerment through ICT. The list of ICT indicators proposed in this paper was the outcome of an intensive consultation process with the women academicians, girl student, ICT employees, media participants, media personalities, Husbands, children, religious leaders, journalists and researchers. We did an extensive literature review and took guidelines provided by WSIS meeting reports, United Nations reports and reports published by "Partnership on Measuring ICT for Development".

The key factors those are important in designing women informatization indicator protocol are shown in Fig.1. Unlike developed countries and other developing countries in Bangladesh women freedom   to accommodate with the ICT advantages depends on a complex mechanism of socio economic blending with religious and cultural values. To design a best fit protocol for women's in Bangladesh we have closely examined different unconventional social issues such as (a) social partnership in rise of productivity and information update, (b) improvement of rural demand-supply network, (c) revolution in rural health care and in education and (d) fast disaster response and crime control. The key factors of women informatization indicators are as follows:

A.   Woman's Psychological Resistance
A1: Proportion of women interested to take the full advantage of ICT
A2: Proportion of women interested to use computers for their family management.
A3: Proportion of women interested to use telephones for their communication
A4: Proportion of women interested to use mobile phone for family communication.
A5: Proportion of women interested to use mobile phone for business purpose
A6: Proportion of women interested to send their girl child to participate in   TV or RADIO performance.

B.   Women attitude toward another woman
B1: Number of Women employed by Women employer in the ICT industry (Per hundred).
B2: Number of Women interested to work under the direct supervision of another woman (Per hundred).
B3: Number of Women accepting female family members working in ICT industry (Per hundred).
B4: Number of Women supporting Female Leadership in ICT industries (Per hundred).
B5: Number of Women who suppressed by female colleagues in ICT industry (Per hundred).

C.   Level of Family constraints
C1: Number of women (per hundred women) unable to work in computers because of childcare
C2: Number of women (per hundred women) unable to work in ICT because of childcare
C3: Number of families (per hundred women) willing to support wife to work in ICT industries
C4: Number of Women (per hundred women) dissatisfied with their household work as compared with ICT jobs.

D.   Level of religious Zealotry
D1: Ratio of Muslim families in comparison with other religious groups in Bangladesh willing to send their daughters to work in ICT industries.
D2: Ratio of Muslim families in comparison with other religious groups in Bangladesh willing to send their daughters in media and mass communication.

E.   Overcoming gender gap
E1: No of women (per hundred) enrolled in ICT related disciplines as compared with number of men.
E2: Ratio of men- women in ICT related jobs
E3: No of leading women (per hundred) executives in ICT related organizations in comparison to Men.
E4: Ratio of men- women in ICT related organization at operational level.

F.   Level of Access
F1: Number of ICT institutes having separate courses for Women (Per hundred).
F2: Proportion of Women who have access to Internet and other latest technologist.
F3: Proportion of Job Opportunities reserved for Women in ICT industry.

G.   Response against social violence
G1: Number of Women facing discrimination working in ICT industry (Per hundred).
G2: Number of Women being socially stigmatized for working in ICT industry (Per hundred)..
G3: Number of Women being forced to leave their job because of social violence in the industry (Per hundred).

H.   level of social acceptance
H1: Number of Women receiving support from the family for working in the ICT industry (Per hundred).
H2: Number of Women supporting their family by working in the ICT industry (Per hundred).
H3: Number of Families accepting ICT industry as a feasible working place for Women (Per hundred).
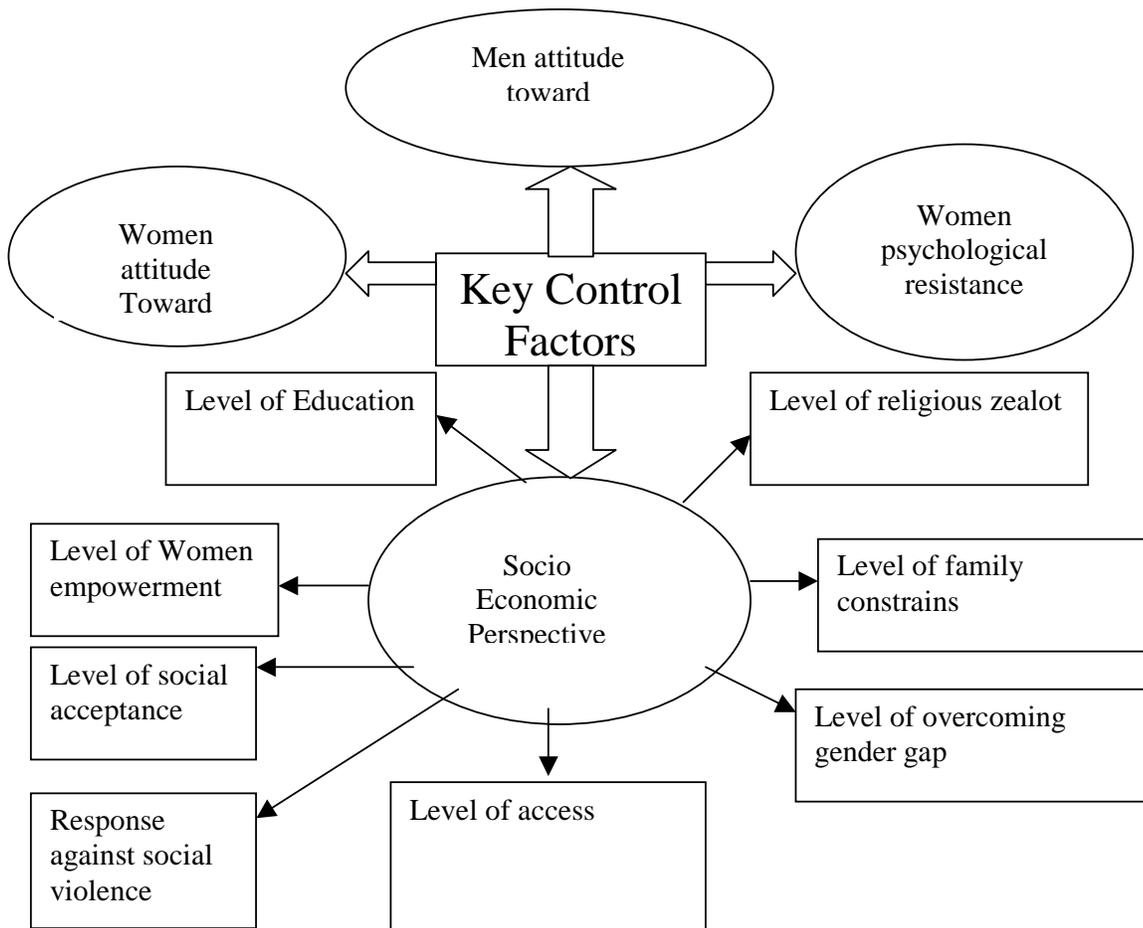H4: Number of organization accepting ICT industry as a feasible working place for Women (Per hundred).

Fig. 1: Protocol of the identification of informatization indicators for Bangladeshi women.

I.   Level of Women Empowerment

I1: Number of Women working at the independent decision maker in the ICT organizations (Per hundred).
I2: Number of women entrepreneurs in the ICT industry (Per hundred).
I3: Proportion of Women contributing in the household income by working in the ICT industry.
I4: Number of Women use ICT as a productive tool (Per hundred).
I5. Number of women interested to introduce and participate in the e-governance process (Per hundred).

J.   Level of Education

J1: Proportion of Women Students in ICT related disciplines at the University Level
J2: Proportion of Women engaged in ICT related job after completing their ICT education.
J3: Number of women getting chance in studying in ICT related disciplines (Per hundred).
J4: Number of organizations recognizing female ICT graduates as competent as their male counterparts (Per hundred).

K. Men's' Attitude toward Women

K1: Percentage of Women Working outside home in the ICT Industry
K2: Percentage of Women Allowed to Continue Education After Marriage
K3: Percentage of Girls Allowed to Attend Education in ICT

.

4.0 Conclusion

ICT sector lies at the heartland of an emerging information society and knowledge-based economy, developing new ICT products, systems and services with important economic and social implications. Social justice considerations suggest that women should have 'a fair share' of the high-status, high paid and influential jobs in this sector. In addition, governments and industry increasingly argue that improving gender inclusion in ICT is necessary in terms of economic performance. Women are seen as a largely untapped resource to overcome the skills shortage in core ICT occupations. The digital technology specially empowers women to have a better say in the family space as well as in the national and global communities. Although our proposed informatization indicators are not standardized and harmonized with the ICT statistics at the global level it agrees with the definitions, model questions and methodological notes provided by the core ICT indicators agreed at the WSIS Thematic Meeting on Measuring the Information Society (Geneva, February 2005). Our work on informatization protocol can be a milestone for the policymakers to construct a national level platform for the future measurement of ICTs impact on women.

5.0 References

[1] Jeffrey Sachs, "A new map of the world," *The Economist,* 24 June 2000; Manuel Castells, "Information Technology, Globalization and Social Development," Paper prepared for United Nations Research Institute on Social Development Conference on Information Technologies and Social Development, Geneva, 22-24 June 1998. http://www.unrisd.org/infotech/conferen/castelp1.htm.

[2] Ms. Nancy J. Hafkin, Knowledge Working (USA), "Gender Issues in ICT Statistics and Indicators, with Particular Emphasis on Developing Countries", Joint UNECE/ UNCTAD/ UIS/ ITU/ OECD/ EUROSTAT Statistical Workshop: Monitoring the Information Society: Data, Measurement and Methods (Geneva, 8-9 December 2003)

[3] Association for Progressive Communication Women's Networking Support Programme, "Information and Communication Technologies: A Women's Agenda." http://www.gn.apc.org/apcwomen/resources/policy/women-rights.html.

[4] Women2000 and Beyond: Gender Equality and the Empowerment of Women through ICT, Gender equality and empowerment of women through ICT, United Nations Secretary-General, Kofi Annan Statement to the World Summit on the Information Society, Geneva, 10 December 2003, UNITED NATIONS, Division for the Advancement of Women Department of Economic and Social Affairs, *women* 2000 *and beyond,* September 2005. http://www.un.org/womenwatch/daw/public/w2000-09.05-ict-e.pdf (17/02/2006)

[5] United Nations, 1995.

[6] Ibid, Critical Area of Concern J, Women and the Media, Strategic Objective J.

[7] Ibid., Strategic Objective J.1.

[8] United Nations, 2003a, op. cit., para. 12.

[9] Nancy Hafkin, Nancy Taggert, Gender, Information Technology and Developing Countries: An Analytical Study, USAID, June 2001, p.55-56.

[10] Dr. Janice Brodman of Education Development Center (Newton MA) and Mohammad Yunus of Grammen Bank are working on a project on using IT to market women's indigenous knowledge, with the aim of Meeting on Gender and ITs in a Global Economy, Hardvard University, 1 May 2001

[11] Julie R. Weeks, " The face of Women Entrepreneurs: What We Know Today,"P.7. Paper presented to Second OECD Conference on Women Entrepreneurs in SMEs: Realizing the Benefits of Globalisation and the Knowledge-Based Economy. http://www.oecd.org/dsti/sti/industry/smes/act/women2000/weeks.pdf.