

ICT as a tool to Empowering of Indian Women

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Abstract— In India 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 review literature on ICT and empowerment of women, drawing upon several e-commerce/ e-retailing projects as case studies to identify a set of best practices that underlie a successful project. 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, E-commerce, E-tailing, India

1. Introduction

This study is motivated by the potentially powerful role that information and communication technologies (ICTs) can play in the empowerment of women in the poor and underdeveloped societies in the world. ICTs are increasingly promoted as a key solution for comprehensive development, poverty eradication and the empowerment of historically disadvantaged groups, such as women and minorities in the Global South (Bhatnagar & Schwabe, 2000; Friedman, 2005; Hafkin & Huyer, 2006; Hafkin & Taggart, 2001; Heeks, 1999, Huyer & Mitter, 2003; UNCTAD, 2002; International Telecommunication Union, 2005). An International Telecommunication Union (ITU) study (2005) describes ICTs as potentially powerful "development enablers" and the World Bank currently supports more than 1,000 projects with an IT component (The World Bank Gender Group, 2006). Simultaneously, the Declaration of Agreement in Support of Girls and Women in Information and Communication Technology, introduced at the United Nations World Summit on the Information Society in Tunis, Tunisia on November 16, 2005, stresses that "ICT allows women increased participation in political, social, and economic arenas and supports empowerment for themselves, their families, and their communities." However, it also warns that "[f]ailing to recognize and remedy women's severe under-representation in the development of ICTs and ICT policy, including both access and leadership, limits our

ability to advance our global society." Information technology¹ 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. 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, gender and religion; 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. 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. ICT can be a powerful catalyst for political and social empowerment of women, and the promotion of gender equality. The Beijing Declaration and Platform for Action 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. It also included a strategic objective

“Increase the 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 India from all other core ICT informatization .

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, 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 India with a flexible options to extend this modeled protocol for other third world countries.

2. Women Empowerment through ICT

The literature on the enormous opportunities ICTs can provide for women's empowerment is vibrant and wide ranging. The use of ICTs contributes to women's empowerment and capacity building in numerous ways, frequently with synergetic effects:

- Training in the use and design of computer applications, such as e-mail, word-processing and design applications, builds marketable skills;
- Marketable skills create alternative possibilities for income generation and the possibility of upward mobility.
- An independent income is the basis for individual autonomy, increased agency and control and, frequently, increased self-esteem and self confidence (Huyer, 2006, p. 30; Garrido & Roman, 2006, p. 170). The Economist quotes a female volunteer who helps run an ICT-based "Knowledge Center" in Embalam near Pondicherry in India as attesting that the status of women in Embalam has

improved as a result of using the computers. "Before, we were just sitting at home," she says. "Now we feel empowered and more in control Increased agency and self-confidence allow women to travel more and develop a wider network of contacts. Such travel and networking expose them to the availability of more economic opportunities (Eggleston, Jensen & Zeckhauser, 2002; Rice, 2003; Kenny, 2002; Bayes, von Braun, & Akhter, 1999);

- ICTs open new avenues for education, communication and information sharing;
- ICTs can be a valuable tool for the organization and mobilization of women's advocacy and interest groups (Friedman, 2005; Nath, 2006);
- Education and information increase knowledge about the world and the political, economic, social and cultural factors that shape women's lives.

3. ICT and Women: An Indian Perspective

In India, 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

3.1 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 India, 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.

A prime example is the development of ICT/ e-commerce projects under the umbrella of Kudumbashree, a Kerala State government organization. It facilitated the formation of the women's micro-enterprise project group for the Kasargod computer facility, provided additional training on business-related topics and helped the women form suitable contacts to procure business deals.

3.2 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, India is can achieve excellence through proper use of the ICT.

For example Case studies such as the Computer Facility at Kasargod, Kerala, India, and e-Seva Centres in Andhra Pradesh, India, also highlight the import role of institutions and government in providing the initial impetus and the ongoing momentum for these ICT-based projects.

The mediating institutions provide the momentum for the project by organizing the women in small groups, identifying suitable projects, providing the training and initial networks needed to start the project and even providing some government contracts 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. Those women have achieved economic and social empowerment within their households and communities.

3.3 Shrinking Information Asymmetry

Women in India 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, we can ameliorate the economic status of women by shrinking information asymmetry through ICT.

3.4 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 India 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.

3.5 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. Thus IT can also help empower women through codification and dissemination of their indigenous knowledge. For example, The e-Seva Centres are staffed and run by women. They provide a wide range of services including bill payments, issuance of land/birth certificates, Internet browsing, telemedicine and tele-agriculture, access to online auctions, the ^aling of complaints and grievances, and matrimonial services. The actual number of computers at each e-Seva Centre varies from place to place based on local needs. The women who are a part of this project have benefited in many ways. They are able to find local employment and increase their income significantly. On average, each woman is earning US\$45 per month. In addition, they also receive substantial training and development opportunities, and they are able to provide valuable services that benefit their rural communities.. The process is working well in the southern region of India, All this program has increased their own self-respect and the regard and respect for them in their communities

3.6 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. For example: India Shop is a successful online shop that sells indigenous products such as sarees, leather goods, sculptures, and other handicrafts made by rural artisans and women cooperatives in Tamil Nadu.

Promoted by FOOD (the Foundation of Occupational Development), a 20-year-old nonprofit organization based in Chennai that seeks to encourage economic empowerment of the rural and urban poor, India Shop enables rural artisan women to directly market their products to local, regional, and global customers, thus cutting out the middleman and ensuring higher profits.

3.7 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.

4. Women Informatization Indicators for India: 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 India. In this paper we propose women informatization indicators with a basic protocol of selection criterion of indicators which will be helpful for Indian 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 Indian 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 India 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 (Per hundred).

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

C. Level of Family constraints (Per hundred)

- C1: Number of women unable to work in computers Because of childcare.
- C2: Number of women unable to work in ICT because of Childcare.
- C3: Number of families willing to support wife to work in ICT industries.
- C4: Number of 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 India willing to send their daughters to work in ICT industries.
- D2: Ratio of Muslim families in comparison with other religious groups in India willing to send their

daughters in media and mass communication.

E. Overcoming gender gap (Per hundred)

- 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 relate organization at operational level.

F. Level of Access (Per hundred)

- F1: Number of ICT institutes having separate courses for Women.
- F2: Proportion of Women who have access to Internet and other latest technologiest.
- F3: Proportion of Job Opportunities reserved for Women in ICT industry.

G. Response against social violence (Per hundred)

- G1: Number of Women facing discrimination working in ICT industry.
- G2: Number of Women being socially stigmatized for working in ICT industry.
- G3: Number of Women being forced to leave their job because of social violence in the industry.

H. Level of social acceptance (Per hundred)

- H1: Number of Women receiving support from the family for working in the ICT industry.
- H2: Number of Women supporting their family by working in the ICT industry.
- H3: Number of Families accepting ICT industry as a feasible working place for Women.
- H4: Number of organization accepting ICT industry as a feasible working place for Women.

I. Level of Women Empowerment (Per hundred)

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

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.

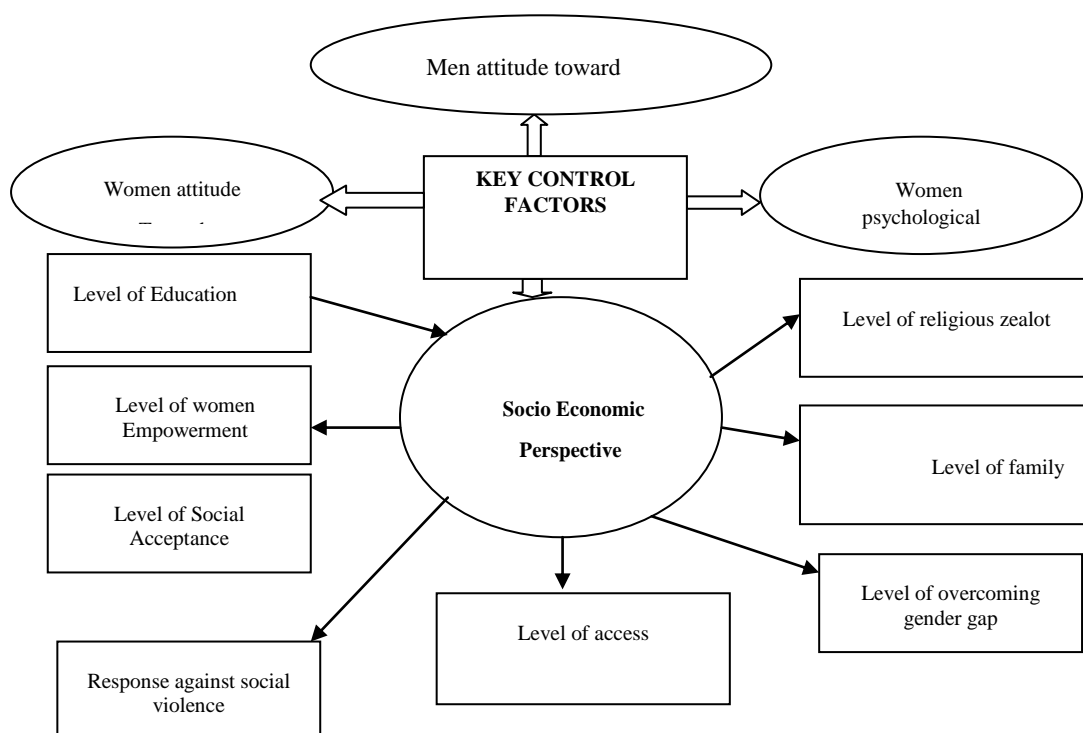


Fig. 1: Protocol of the identification of informatization indicators for Indian women.

- J3: Number of women getting chance in studying in ICT related disciplines.
J4: Number of organizations recognizing female ICT graduates as competent as their male.

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.

5. Conclusion

The main goal of this paper was to develop a set of best practices in the areas of ICTs and the empowerment of women. 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 ICT's impact on women.

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