ICT in Women Entrepreneurial Firms - A Literature Review

Ananya Goswami[1], Sraboni Dutta[2]

[1](Business Management, Techno India College of Technology, India)
[2](Business Management, Birla Institute of Technology, Mesra, Kolkata Campus, India)

Abstract: *Entrepreneurship has emerged as an invaluable tool for economic empowerment of women. Information and Communication Technology (ICT) is an essential element in today's competitive business world. The survival of business organizations are largely depending on the effective and efficient use of ICTs in enhancing their competitive position. ICTs are providing women entrepreneurs with unique and vast opportunities to empower themselves in multifarious way. In this paper, we review literature on ICT and empowerment of women, focusing on their motivation and barriers in ICT usage. The several initiatives undertaken by different institutions to empower the women entrepreneur via ICT have also been studied. We anticipate that the insights generated from this review will be useful for effective program development and policy design.*
Keywords: *Empowerment, Enterprise, Entrepreneurship, ICT, Women.*

I.   Introduction

Globally it has been realized that entrepreneurship is an invaluable tool for ensuring women empowerment as it leads to economic independence for women. In India, empowering women through entrepreneurship has become an important part of the development efforts as it leads to women development, economic growth and social stability [1].

In today's technologically advanced world, Information and Communication Technology (ICT) has initiated a multiplicity of changes in several spheres. ICT has become a key solution for comprehensive development starting from poverty eradication and empowerment of minority groups, such as women and minorities in Global South [2][3][4][5][6]. Also, it has been observed that effective application of any technology is not gender neutral, neither in design nor in implementation[4][7][8]. Also ICT needs to be popularized within existing cultural and social structures without inadvertently reinforcing existing gender divides or resulting in further marginalization [9][10].

In this context, we posit that an important catalyst for women entrepreneurship is the knowledge and usage of Information and Communication Technology (ICT) tools. ICTs are providing women entrepreneurs with unique and vast opportunities to empower themselves in multifarious way. ICTs are opening up the potential for a number of business ventures for women entrepreneurs.

II.   Women's Empowerment Through ICTs

ICTs have provided a wide range of opportunities for development of women. It is a powerful catalyst for political and social empowerment of women and the promotion of gender equality[11]. IT has redefined the traditional role of women and the dissemination of technology usage has benefitted the women in a large scale [12]. Women are increasingly adopting ICT for various business related tasks like preparing letters and memos, producing report, data storage and retrieval, budgeting, planning and analyzing problems and alternatives [13]. ICTs have been a major force in women development since they provide and foster communication which enhances exchange of important information for marketing, purchasing and also knowledge creation and dissemination [14]. ICT has changed the way women entrepreneurs work, consume, purchase and interact [15]. Women are found to be active and enthusiastic on computer training, computer repair work and e enabled businesses [4][16].

The women entrepreneurs in the Middle East and North Africa use information and communication technology (ICT) for their businesses at rates well above the per capita average worldwide [17]. Thus, women are extensively using ICT in making successful business ventures.

III.   Factors Motivating the Usage of ICT

Women entrepreneurs are being induced to incorporate the ICT in their businesses ventures to manage the operations as the extensive uses of ICTs are changing the way people or companies work. Modern and advanced ICT tools are very powerful in delivering quality and contributing towards financial growth and progress. The adoption or non adoption of e commerce, m commerce or social media is having direct impact on the failure, survival, growth or success of their entrepreneurial venture[18].

Use of ICT has become relevant in every business sector as it brings increased profits through business networking. IT increases productivity, improve job performance and enhances job effectiveness in women oriented businesses [13]. ICTs allow women entrepreneurs to sell their products in the most profitable markets and determine the optimum timing of scale [12]. Incorporation of ICT in businesses have reduced transaction costs for women run businesses and also enhanced market performance [19]. Women entrepreneurs can easily plan their product mix and input purchases in an efficient manner as information on prices are readily available [20]. This leads to reduced broker's exploitation and thus, minimizes the information gap between the market and the women entrepreneurs [11]. ICTs open new avenues for education, communication and information sharing and the marketable skills of women entrepreneurs are enhanced through training in emails, word processing and internet[21][22][23][24].

IV.   Barriers Challenging the Usage of ICT

The main barriers in using ICT in businesses are lack of training, lack of access, the high costs of equipments, connections, hardware and software applications [12][25][26][27]. Women are still not conversant enough to use ICT in their businesses. This is due to the social norms and unavailability of adequate business networks [25][27][39]. Availability of network infrastructure is also a major challenge among women entrepreneurs [28]. Network failure and network trafficking are the reasons for the failure of on time communications which hampers the effectiveness of business operations. The high costs of ICT impacts adoption by SMEs managed by women entrepreneurs [12][29].

Women entrepreneurs' attitude, knowledge and experience also play an important role in adopting new technologies [30]. The absence of technological know-how also poses a challenge for women entrepreneurs [26]. Language barrier is also an important factor for SME owners[31]. Most of the sites use English as a medium for communications and the SME owners are mostly familiar with the local language.

V.   Institutional Initiatives for ICT Skill Development amongst Women Entrepreneurs

One of the main difficulties for SMEs in extracting the benefits of ICT applications is lack of awareness and insufficient ICT training [32]. Government should come forward in providing ICT education at all levels of education which will encourage the youths to take up various opportunities offered by ICT [33]. Women lack the requisite level of education and training, including business and technical skills and entrepreneurship training. They are often unaware of training opportunities and are less likely to be able to afford the cost of training provided by the private sector [34][35]. Also due to lack of education, the women entrepreneurs in India remain in dark about the development of new technologies and it was suggested that Government should devise and implement training programmes for the upliftment of the women entrepreneurs [36]. Women Entrepreneurs in the Middle East and North Africa are eagerly looking forward to entrepreneurial trainings on how to use technology to grow a business [17].

Inspite of the immense scope for training in this field, there have been attempts to overcome the obstacles of women's access to ICT. In recent years, World Bank and Canadian International Development Research Centre (IDRC) have increased the funding on ICT projects that are specifically aimed to empower women (Maier and Reichert, 2008). Several e-commerce projects have become popular in global markets. The Georgetown-initiated Cottage Industry-Global Market CI-GM Project, Tortas Peru, EthioShop, the Indian Shop and the Rupununi Weavers Society are the examples of successful e commerce projects [12].

In India, Government promotes continuous training programmes and awareness workshops on the use and potential of ICT throughout the country. Aamagaon Soochna Kendra (My village's information center) is a project undertaken by Government of Orissa for setting up 73 Information and Communication Technology (ICT) kiosks in the rural areas of 12 districts of Orissa. Under a partnership with Mission Shakti, women SHG members are being trained on computer fundamentals and Internet basics at the IT Kiosks on payment of an affordable fee [37].

Government of Kerala and NABARD (National Bank for Agriculture and Rural Development) has jointly implemented The Kudumbashree, with an aim to eradicate poverty from the State with a special focus on women and children from Below Poverty Line. Women were motivated to set up their own micro enterprise after obtaining training in data entry, data processing, desktop publishing (DTP), and IT education. Entrepreneurship development training was imparted to them under the Kudumbashree project. The first micro-enterprise unit was started in Trivandrum on 15, September 1999. The unit was named as Techno World Digital Technologies [38].

In Gujarat, women dairy producers use the Dairy Information System Kiosk (DISK), which manages a database of all milk cattle, provides information about veterinary services and other practical information about the dairy sector [40]. This information helps women producers maximize productivity and earnings.

The 'Inter-city Marketing Network of Women Entrepreneurs' project in Chennai, India has set up a communication network among women's community-based organizations (CBOs) to market their produce. The

CBOs are provided with cellular phones, and women have been trained to market their products through telephones and sell the same not only in their neighborhoods' but also in potential markets in the city. With the use of this technique, poor women from CBOs who are constrained by pressure of time and mobility are able to assess and aggregate market demand by communicating with their peer CBOs [37]

Although, the Governments of developing countries have started taking initiatives to educate women on ICT tools, the implementation of most programmes has been slow. In order to sensitize the women entrepreneurs, training courses on mobile applications and services should be provided on third generation mobile phones, Blackberries and mobile modems [19].

VI. Conclusion

The ICT sector is now a growing sector for employment, and a key factor for both national and international development. Without its adoption, there is a very limited scope for the nation as well as a region to develop. Women entrepreneurs are still unable to completely tap the potentialities of ICT for the development of their enterprise. Gender gap in the digital divide is still much prevalent in the developing countries.

The present review of literature highlighted the role of ICT in the business environment of women entrepreneurs. ICT can provide wide variety of benefits to different types of firms. Moreover, ICT reduces business costs, improves productivity and strengthens the firm in the competitive market. Simultaneously, women entrepreneurs are being faced with lots of challenges in terms of ICT training, financing, social norms and linguistic issues. Hence, Government should come up with special policies and schemes on financial support, infrastructural support and training facilities in school to promote and develop the usage of ICT among women entrepreneurs both in rural and urban areas to make them self independent and self confident.

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