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Are the Icts Able to Empower The Rural Women in The Developing Countries? A Socio-Economic Comparison between Egypt and India.

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ABSTRACT

Information and Communication Technologies (ICTs) have been 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 world. ICT-based initiatives and projects have been hailed as “potential goldmines” for women’s empowerment. However, research and experience shows that to be successful, initiatives and projects must balance the need to overcome structural barriers to women’s advancement with sensitivity to the limited space within which many women in the world navigate. In this paper, we review literature on ICT and the social as well as economic empowerment of women, drawing upon two empowerment initiatives and programmes from two developing countries (i.e. India and Egypt) as case studies to compare the gender empowerment status through such ICT- based initiatives in the developing nations. Some of the findings have been found such as: 1) Government and institutional support is a major factor that affect the gender empowerment, 2) The women societal involvement has to be targeted while forming a smart empowerment strategy, 3) The ICT- based training is one of the most required activity towards gender empowerment, 4) The ICT- based initiatives are opening a wide arena for both women and men. We anticipate that the insights outcomes from this study will be useful both for purposes of effective program development and policy design from both the two countries especially as well as the world generally.

Keywords: ICT – Gender Empowerment- Development Initiatives and programmes



INTRODUCTION

Today a new paradigm of agricultural development is fast emerging: in both developing and developed countries the overall development of rural areas is expanding in new directions; old ways of delivering important services to citizens are being challenged; and traditional societies are being transformed into knowledge societies all over the world.

This study is motivated by the powerful role that information and communication technologies (ICTs) can play in the gender empowerment in underdeveloped societies in the world (the study focus is particularly on India and Egypt). In this essay, we review the literature on ICTs and empowerment of gender, drawing upon the two studied empowerment initiatives as case studies to compare the status of gender empowerment through such initiatives by which we can underlie a successful gender empowerment strategy.

Both of India and Egypt are belongs to the world developing countries, India as an Asian country while Egypt is an African, various characteristics gathering the two nations, in that regard we are trying through this research to bring out the gender empowerment similarities as well as the differences in this two nations for building a set of best practices could be part of creating a comprehensive gender empowerment strategy.

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 developing world (Resnick, M., 2002), (U.N. General Assembly, 55th Session, 2008)

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 according to 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 “failing 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.”

Recently, therefore, development agencies, such as the World Bank, USAID and the Canadian International Development Research Centre (IDRC) have substantially increased funding for ICT projects that specially aim to empower women, such as e-commerce, e-government, business development and networking projects. Women have increasingly proven to be active and enthusiastic participants in a large variety of ICT-enabled projects, such as computer training and data entry facilities, call centers,

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billing, computer repair work, and e-enabled businesses. (Hafkin&Huyer, 2006; Sciadas, 2005). E-commerce projects (traditional or otherwise) that tap the skills of women and exploit their potential have been particularly popular in global markets. The Georgetown-initiated Cottage Industry-Global Market CI-GM Project, Tortas Peru, the India Shop, ElSouk in Egypt, EthioShop, Women Entrepreneurs and Handicraft Producers in Bhutan, the World Bank-funded Knitting Together Project and the Rupununi Weavers Society are examples of a successful initiatives and projects in such context. Projects like those by the Delhi-based Datamation Foundation, the Information Village Project in Pondicherry, India and the Grameen Phone Project in Bangladesh serve as models of the potential of ICT-based programmes. (Maier and Nair-reichert, 2008)

While many papers have addressed the theory related to this topic, and there are individual case studies examining the impact of ICT on the empowerment of women, we have, to the best of our knowledge, not seen any systematic work on “best practices” in this area to do such comparative analysis between (at least) these two countries of the developing world. Our paper, therefore, is motivated by the question: How do ICT-based initiatives facilitate the empowerment of gender, and what are some characteristics of successful initiatives and programmes? For the purpose of this paper, we take two of the ICT-based initiatives in India and Egypt for the purpose of the comparative analysis.

The best practices can be defined according to Maier and Nair-reichert, (2008) as “sets of actions, managerial practices, and policies undertaken by either the government or NGOs that lead to the gender empowerment for both men and women working in those businesses and those others who regarded it as a role model to emulate”. We are limited by the availability of data since our specific focus is particularly on this two models of gender empowerment and we include mainly case studies we found during our literature search that specifically relate to gender empowerment (rather than the general use of ICTs).

According to Jorge, (2002) the ICTs provides a great development opportunity by contributing a massive contribution to the process of information dissemination, providing an array of communication capabilities, increasing access to technology and knowledge, among other women.

The results of Cecchini and Scott, (2003) study has shown that ICT can reduce poverty by improving the poor people the access to education, health, government and financial services. According to this study ICT helps small

farmers and artisans, rural women by connecting them to markets. They have argued that in rural India, as like as in much of the developing world nations, realization of this potential was not guaranteed.

Within the francophone countries the study of Hafkin and Huyer, (2007) shows that the gender divide is clear in the context of ICT with a handful of exceptions, the proportion of female Internet users in most countries is below 50%.

These two ICT-based initiatives are mainly directed to the social purposes such as Agriculture, Health, Primary Education, Rural Energy, Social welfare and e-Governance as well as nutrition, home, furnishings & Decoration as a major concerns that affect the whole society especially women. Since these two particular ICT- based programmes are almost built for the same focus area.

Henk, Sarah, (2005) stated that women needs information and to engage in communication that will improve their livelihoods and help them to achieve their essential human rights. This is a harsh challenge facing all societies in today’s world, especially developing countries. She claimed that due to systemic gender biases in ICTs and their applications, women are far more likely than men to experience discrimination in the information society. Drucker (2001) has called ICTs the “great equalizer” .

Hijab and Zambrano, (2008) stated that developing countries have not been able to harness the potential of ICTs at the same speed as industrialized nations. Issues of access to ICTs and investment in ICT infrastructure, among others, have limited the uptake in such countries. As a result, many of the initial ICT for Development programmes and initiatives focused on access, complemented in many cases by support for local capacity building.

The Global Study on the Mobile Phone Gender Gap in Low- and Middle- Income Countries, led by the Global System of Mobile Communications Operator Organisation (GMSA) clearly indicates that there is a significant difference between men and women in terms of mobile phone coverage. (GSMA, 2010)

The study done by Bezbaruah, (2012) showing that the gender equality in the workplace is a function of a number of institutional, organizational and cultural factors, but is ultimately shaped by broader social attitudes towards women.

According to Malhotra.A. (2002) there are certain indicators could measure the various dimensions of gender empowerment he has listed as below Table No. 1:

Table 1. Dimensions of gender empowerment.

Dimension	Indicators (Malhotra, 2002)
Psychological	Self-esteem; self efficacy
Economic	Women’s control over income; relative contribution to family support; access to and control of family resources
Familial/ Interpersonal	Participation in domestic decision-making; control over spouse selection and marriage timing; freedom from domestic violence
Political	Knowledge of political system and means of access to it; exercising the right to vote
Legal	Knowledge of legal rights; domestic support for exercising rights
Socio-Cultural	Women’s freedom of movement; lack of discrimination against daughters; commitment to educating daughters
Informational	Gender equality in terms of the accessibility and use of the information sources

RESEARCH METHODOLOGY:

The present study followed an *ex-post-facto* research design. According to Kerlinger (1964) an *ex-post*

facto research is a systematic empirical enquiry in which the scientist does not have direct control over the variables because their manifestations have already occurred or

because they are inherently not manipulate able. Both primary and secondary data were utilized for the study. The primary data was collected through survey method using interview schedules (structured and semi- structured) focused group discussion, and observation as major tools. The secondary data were collected through annual reports of the two initiatives websites.

The methodology we developed for this study is to first review the literature and identifies factors that facilitating successful ICT-based initiatives and factors that may stand against such initiatives. We then identify two of initiatives in the two targeted countries to analyze (e.g. InDG initiative from India and Byotna initiative from Egypt) to understand the extent of which the theoretical findings are validated by the field experiences.

Through this process we are trying to compare between the two countries (India and Egypt) in terms of the

status of gender empowerment through such initiatives by which underlie a successful gender empowerment strategy. We started our research process to achieve the main objective of this paper which is; to conduct a comparative analysis between the two developing countries in terms of the best practices have been followed through the ICT-based initiatives to achieve gender empowerment.

So we selected our sample consisting of beneficiaries and non beneficiaries respondents from a randomly selected states (one state from India and one governorate from Egypt) through the random selection based on the Gender Empowerment Index (GEI) - state wise we selected one state of each randomly (using random selection technique of MSEXCEL) we then got two states with total respondents of 120 were distributed as follows in (Table 2):

Table 2. Distribution of the respondents

India GEI Rank 128		Egypt GEI Rank 112		total
Initiative: India Development Gateway (InDG)		Initiative: Byotna portal		
Punjab (Rank 19)		Algiza (Rank 3)		
Beneficiaries (30)	Non Beneficiaries (30)	Beneficiaries (30)	Non Beneficiaries (30)	120 Respondents

The selected ICT-based initiatives:

India Development Gateway (InDG) initiative is according to United Nations E-Government Survey (2012) is a nation-wide government initiative that seeks to use the power of ICT to empower the poor and under-served through provision of information, products and services covering select livelihood domains in local languages. Developed as part of the initiative, is the multilingual web portal –www.indg.in. The portal covers six key livelihood domains – Agriculture, Health, Primary Education, Rural Energy, Social welfare and e-Governance. The portal hosts over 3,21,228 pages of content and large volumes of multimedia content shared by about 200 agencies in ten regional languages. Outreach and capacity building programmes are organized at various levels to enable content sharing and dissemination. The portal, since its launch in July 2008, has attracted close to 8 million visits and 25 million page-views.

Byotna by kenana online initiative is an arena that provides various articles, forums and e-services that cater to the needs, concerns, and questions of the Arab families. The main tackled topics by this portal are: health, nutrition, home, furnishings & Decoration, motherhood, childcare, elegance, beauty, cooking, sports ...etc. The content of the portal is greatly dependant on the contribution of the users,

experts, and professionals. (Egypt ICT Trust Fund Report, 2012)

RESULTS AND DISCUSSION

1. Variables and their Measurement:

The appropriate variables for the present study were operationalized as in Table 3 based on the objectives of the study, review of literature, discussion with experts and also the observations made by the researcher. The following socio-economical and communication variables were chosen as independent variables for the study:

Table 3. Researchable Variables and Their Measurements

Socio-economic variables	Tools used for measurement
Age	Chronological age (years)
Education	No. of years of formal education
Occupation	Modified scale of Man Singh (1993)
Social participation	Scheduled developed
Information seeking behavior	Scheduled developed
Media exposure	Modified scale of Nirban (2004)

1. Age of the respondents:

As mentioned in table 4 It is measured in terms of the number of chronological years completed by the respondents at the time of data collection. Age of the respondents is categorized as below:

Table 4. Distribution of respondents according to their age (N=120)

Sr. No.	Age	Category	Frequency (F) India (Punjab)	Percentage (%) India (Punjab) N=60	Frequency (F) Egypt (Giza)	Percentage (%) Egypt (Giza) N=60
1	Below 33 years	Young	28	46.66	16	26.66
2	33 to 47 years	Middle	11	18.33	26	43.33
3	Above 47 years	Old	21	35.00	18	30.00

2. Gender of the respondents:

The Distribution of respondents according to their gender is shown in table no. 5

3. Educational Status: Educational status was operated as the level of literacy. Based on the level of literacy possessed by the respondents, their educational status was classified into six categories as followed in table no. 6:

Occupational status: Occupational status refers to the major activity of the respondent in which he or she was involved for most part of the day, and which generates the major part of family income. For this, Scoring was made as follows In table no. 7

4. Family type: It was measured in terms of cooking arrangements and pooling of income. The families that

had pooled all their income and had common cooking arrangement despite the presence of more than a couple were considered joint family and otherwise, nuclear. Data were collected with interview schedule and the scoring pattern followed in table no. 8:

5. Annual family income: The total income (converted to the INRs) of a family per year was asked and classified according to the income classification given by National Council for Applied Economic Research in India (NCAER) in table no. 9.

Table 5. Distribution of respondents according to their gender

Sr. No.	Gender	Frequency (Punjab India)	Percentage (Punjab India N=60)	Frequency (Giza Egypt)	Percentage (Giza Egypt) N=60
1	Male	18	30.00	27	45.00
2	Female	42	70.00	33	55.00

Table 6. Distribution of respondents according to their education

Sr. No.	Education	Frequency (Punjab India)	Percentage (Punjab India) N=60	Frequency (Giza Egypt)	Percentage (Giza Egypt) N=60
1	Illiterate	11	18.33	12	18.18
2	Primary school	18	30.00	31	51.66
3	Secondary school	13	21.66	9	15.00
4	Graduate	18	30.00	8	13.33

Table 7. Distribution of respondents according to their occupation (N=120)

Sr. No.	Occupation	Frequency (Punjab India)	Percentage (Punjab India) N=60	Frequency (Giza Egypt)	Percentage (Giza Egypt) N=60
1	House worker	32	53.33	19	31.66
2	House worker +farming	11	18.33	16	26.66
3	House worker + Business	7	11.66	6	10.00
4	House worker + service	10	16.66	19	31.66

Table 8. Distribution of respondents according to their family type

Sr. No.	Type of Family	Frequency (Punjab India)	Percentage (Punjab India) N=60	Frequency (Giza Egypt)	Percentage (Giza Egypt) N=60
1	Nuclear	44	73.33	29	48.33
2	Joint	16	26.66	31	51.66

Table 9. Distribution of respondents according to their annual income in INR

Sr. No.	Annual family income(INR)	Frequency (Punjab India)	Percentage (Punjab India) N=60	Frequency (Giza Egypt)	Percentage (Giza Egypt) N=60
1	Less than 50,000/-	18	30.00	21	35.00
2	50,001/- to 1,00,000/-	27	45.00	24	40.00
3	1,00,001/- to 2,00,000/-	9	15.00	8	13.33
4	More than 2,00,000/-	6	10.00	7	11.66

Informational Empowerment:

The informational empowerment is one of the major dimensions of gender empowerment which indicates to the easy access to quality sources of information and effective utilization of received information.

Impact on empowerment was measured in terms of level of improvement in six dimensions, namely, economic, social, cultural, political, psychological, and informational. An empowerment index was developed. Items under each dimension were developed and relevancy of each item was checked on the basis of experts' judgment.

$$\text{Index Score} = \frac{EE \times W_1 + SE \times W_2 + CE \times W_3 + POE \times W_4 + PSE \times W_5 + IE \times W_6}{W_1 + W_2 + W_3 + W_4 + W_5 + W_6}$$

Where,

- EE = Economic Empowerment Index Score
- SE = Social Empowerment Index Score
- CE = Cultural Empowerment Index Score
- POE = Political Empowerment Index Score
- PSE = Psychological Empowerment Index Score
- IE = Informational Empowerment Index Score

W₁, W₂, W₃, W₄, W₅, W₆ = weightage given by experts to economic, social, cultural, political, psychological, and informational empowerment respectively in table no. 10 and table no. 11.

Table 10. Level of improvement in Empowerment to Empowerment Index Score.

Level of improvement in Empowerment	Empowerment Index Score
Low	0.00- 0.33
Medium	0.34 - 0.66
High	0.67-1.00

Table 11. weightage given by experts Dimensions of Women Empowerment.

Dimensions of Women Empowerment	weightage given by experts
Economical	2.42
Social	2.14
Cultural	1.54
Political	1.92
Psychological	2.23
Informational	1.75

Empowerment Index

An empowerment index has been developed for this study to assess the empowerment status among the two countries of the study as well as the four compared states. The developed index had two stages of modification, one is the empowerment dimensions collection and calculations which has been done by the researcher, and the other is the weightages stage which done by the experts to give a weightage for each dimension as below:

$$\text{IndexScore} = \frac{\text{EE} \times W_1 + \text{SE} \times W_2 + \text{CE} \times W_3 + \text{POE} \times W_4 + \text{PSE} \times W_5 + \text{IE} \times W_6}{W_1 + W_2 + W_3 + W_4 + W_5 + W_6} \times 100$$

Where,

- EE = Economic Empowerment Index Score
- SE = Social Empowerment Index Score
- CE = Cultural Empowerment Index Score
- POE = Political Empowerment Index Score
- PSE = Psychological Empowerment Index Score
- IE = Informational Empowerment Index Score

W₁, W₂, W₃, W₄, W₅, W₆ = weightage given by experts to economic, social, cultural, political, psychological, and informational empowerment respectively as in table no.12 .

Table 12. Weightages Given to Each Empowerment Dimension by the Experts

Dimensions of Women Empowerment	Weightage given by experts
Economical	2.40
Social	2.15
Cultural	1.99
Psychological	1.50
Informational	1.10
Political	0.86

Firstly, the index for each dimension has calculated based on the responses of each state, the results were as presented in table no 13.

Table 13. Comparative analysis of each dimension for the two countries.

Empowerment	India		Egypt	
	Before	After	Before	After
Economic Empowerment	3.92	4.13	2.61	3.46
Social Empowerment	4.18	4.12	4.49	4.34
Cultural Empowerment	3.99	4.11	3.28	3.88
Psychological Empowerment	3.01	3.11	2.42	2.69
Informational Empowerment	2.19	2.28	1.86	2.14
Political Empowerment	1.70	1.78	1.39	1.69

The results of table no. 14 clearly showing the difference of the empowerment score of each dimension of the gender empowerment before and after joining the ICT-based initiatives among the two countries of the study. Except the social dimension, all the dimensions of gender empowerment show a difference before and after joining, as the economic empowerment scores before the joining were 3.92 and 2.61 for India and Egypt respectively, while after the joining were

Further, the total empowerment index has calculated as planned and results presented in Figure No. 1 showing the total score for the total empowerment index

Table 15: ANOVA for Total Empowerment Index Before and After Joining the ICT-Based Initiatives

		Sum of Squares	df	Mean Square	F
Before * State	Between Groups (Combined)	14.392	3	4.797	2.162*
	Within Groups	257.454	116	2.219	
	Total	271.846	119		
After * State	Between Groups (Combined)	134.022	3	44.674	8.857**
	Within Groups	585.094	116	5.044	
	Total	719.116	119		

* significantly different at 5 per cent level of probability

** significantly different at 1 per cent level of probability

before and after joining the ICT-based initiatives between the two countries. Clearly found that there is a difference between the empowerment index before joining and after joining in both two countries as it was 12.96 and becomes 17.23 for India and was 12.79 in Egypt before and becomes 15.87 after joining the ICT-based initiatives.

For more understanding of the differences between the total empowerment index, Analysis of Variance (ANOVA) has calculated (shown in table no. 15 and Table no. 16). the results showing that the index score differences between India and Egypt before the joining to the ICT-based initiatives were significant in the level of 0.05 of significance while it was highly significant at the level of 0.01 after joining the ICT-based initiatives. The same results obtained for the paired samples t-test (table no.4.3.12) which was significant at the level of 0.01.

Table 14. Beneficiaries Mean Scores for the Empowerment Dimensions After Joining the ICT-Based Initiatives

	India		Egypt	
	Before Joining	After Joining	Before Joining	After Joining
Total Empowerment Index	12.96	17.23	12.79	15.87
Mean	12.96	17.23	12.79	15.64
SD	1.50	2.46	1.43	2.90
Minimum	10.35	12.30	10.26	11.91
Maximum	17.14	20.32	16.54	19.6

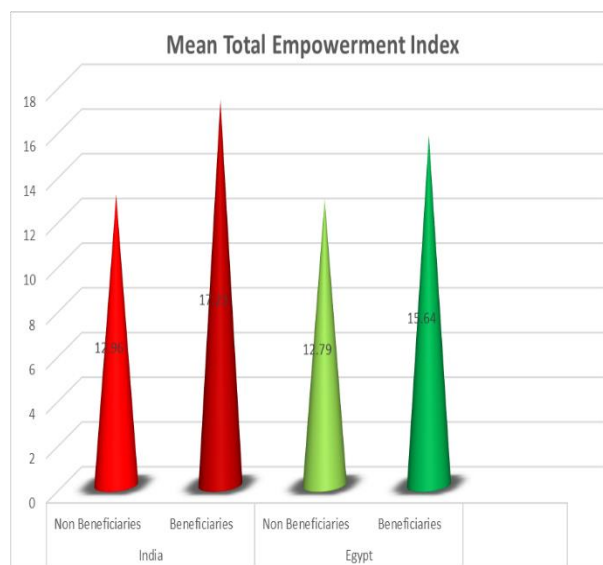


Fig. 1. Total Empowerment Index Before and After Joining the ICT-Based Initiatives

Table 16 Paired Samples t- Test Results for India and Egypt Before and After joining

Pair	Before – After	Paired Differences Mean	t -Value	df
1	Before – After	-3.56040	-14.860**	119

** significantly different at 1 per cent level of probability

Correlates of Effectiveness Index and Empowerment Index.

Both Empowerment Index and Effectiveness Index are likely to be influenced by some factors whether directly or indirectly influence it. Thus, some selected relevant factors and their possible association with the two indexes were put to empirical testing. Here the dependent variable is Empowerment index, and Effectiveness index specially computed by coding 8 variables. A set of independent variables and the empowerment index as well as Effectiveness index were put to Spearman’s correlation analysis (non-parametric method) for each state of the four selected states.

In the state of Punjab, as the Spearman’s correlations coefficients (rho) for Punjab state of India given in the Table (17) indicate, out of eight independent variables, two were significant at 0.01 level of probability namely Experience with IT and Mass Media Exposure. These two variables were found highly significant and positively associated with the Empowerment Index. This means that as one’s Mass media exposure and the Experience with handling the ICTs increases, his Empowerment would also appear to increase.

Table 17. Correlates of ICTs Effectiveness Index and Gender Empowerment Index of Punjab beneficiaries N=30

Socio-eco-personal Characteristics of Beneficiaries of the ICTs	Spearman’s Correlation coefficients (rho) of Effectiveness Index score	Spearman’s Correlation coefficients (rho) of Empowerment Index score
Age	0.132	0.176
Education	0.09	-0.341
Annual Income	0.294	0.118
Experience with IT	0.203	.803**
Participation	-0.037	-0.047
Mass Media Exposure	0.111	.469**
Information Needs	-0.04	-0.094
Information Need in Agriculture	-0.285	0.308

* Significant at 0.05 level of probability

** Significant at 0.01 level of probability

In the state of Assam, as the Spearman’s correlations coefficients (rho) for Assam state of India given in the Table (18) indicate, out of eight independent variables, only the Experience with IT was found significant at 0.05 level of probability. This variable was found significant and positively associated with the Empowerment Index. This means that as one’s Experience with handling the ICTs increases, his Empowerment would also appear to increase among the beneficiaries of InDG portal of Assam State.

In the Egyptian state Giza, as the Spearman’s correlations coefficients (rho) for Giza state of Egypt given in the Table (19) indicate, out of eight independent variables, only the Information Needs was found significant at 0.05 level of probability. This variable was found significant and

positively associated with the Empowerment Index. This means that as one’s Information Needs increases, his Empowerment would also appear to increase among the beneficiaries of InDG portal of Giza beneficiaries respondents.

Table 18. Correlates of ICTs Effectiveness Index and Gender Empowerment Index of Punjab beneficiaries N=30

Assam Socio-eco-personal Characteristics of Beneficiaries of the ICTs	Spearman’s Correlation coefficients (rho) of Effectiveness Index score	Spearman’s Correlation coefficients (rho) of Empowerment Index score
Age	0.059	0.117
Education	-0.14	0.007
Annual Income	-0.056	0.202
Experience with IT	-0.35	.362*
Participation	0.254	-0.125
Mass Media Exposure	-0.085	0.152
Information Needs	-0.264	0.287
Information Need in Agriculture	0.173	-0.099

Table 19 . Correlates of ICTs Effectiveness Index and Gender Empowerment Index of Punjab beneficiaries N=30

Giza Socio-eco-personal Characteristics of Beneficiaries of the ICTs	Spearman’s Correlation coefficients (rho) of Effectiveness Index score	Spearman’s Correlation coefficients (rho) of Empowerment Index score
Age	-0.042	-0.159
Education	0.027	0.263
Annual Income	-0.054	-0.076
Experience with IT	-0.204	0.059
Participation	-0.045	0.167
Mass Media Exposure	-0.006	-0.038
Information Needs	0.121	.366*
Information Need in Agriculture	0.228	0.177

In Egypt, the beneficiaries respondents of state of Qena, as the Spearman’s correlations coefficients (rho) for Qena state of Egypt given in the Table (20) indicate, out of eight independent variables, IT was found no significant association between the independent variables wit either the effectiveness index or empowerment index.

Table 20 .Correlates of ICTs Effectiveness Index and Gender Empowerment Index of Punjab beneficiaries N=30

Qena Socio-eco-personal Characteristics of Beneficiaries of the ICTs	Spearman’s Correlation coefficients (rho) of Effectiveness Index score	Spearman’s Correlation coefficients (rho) of Empowerment Index score
Age	0.05	0.179
Education	-0.038	-0.222
Annual Income	0.189	-0.281
Experience with IT	0.193	-0.136
Participation	0.347	-0.283
Mass Media Exposure	-0.063	0.162
Information Needs	0.129	-0.168
Information Need in Agriculture	0.122	0.025

As the correlation analysis is non-parametric, the correlation coefficients of the above variables, which may be nominal, or ordinal appear to be valid. The correlation

analysis has established the presence or absence of relationship between variables.

The ICT-Based Initiatives and Gender Empowerment: InDG and Byotna A comparative analysis.

Vikaspedia or India Development Gateway (InDG) is a nation-wide ICT-based initiative, powered by Centre for Development of Advanced Computing, (C-DAC), Hyderabad, India. It seeks to use the power of ICT to empower the poor and under-served through provision of information, products and services covering select livelihood domains in local languages. 56% of users of the portal are from rural areas. 47% of the people accessing InDG, portal belong to the category of self-employed entrepreneurs and students, in the age group of 15-35 years, accessing skill development/self-employment-oriented information. 58% of the users have rated the portal as 'Good' in terms of dynamicity, usefulness and ease of finding the content. Availability of need based, demand driven, local language content/services in the portal and user-friendly interactive features are the most appreciated aspects of the portal.

The initiative is supported by the Department of Electronics and IT, Ministry of Information and Communication Technologies, Government of India and implemented by Centre for Development of Advanced Computing (C-DAC) to use technology to provide responsive and credible information products and services that respond to the real and strategic needs of the unreached, especially women and poor, in their local language.

Byoutna by kenana online initiative is a governmental ICT-based initiative powered by the societal development portal Kenana and financed by the Egyptian Ministry of Communication and Information Technology (MCIT) with cooperation with the United Nations Development Program (UNDP) online which focuses on the various developmental issues in the Arabic world especially Egypt. This portal is an interactive portal to support and serve the Egyptian people in different aspects namely education, health, legal issues, family and women empowerment, many of the programmers, editors, content developer are working to link the people in the remote geographic areas with the government and non-governmental services and information to be able to penetrate the work market with their own enterprises. Near around 16 thousand visitor and thousands of the beneficiaries has been accessed to the various aspects of the portal. Since its launching time in 2004 kenana portals is a specialized e-portal that offers information on agriculture, small enterprise development, healthcare and farming, Portal average daily visits 10,000 and average of 120 pages added daily to kenana

Empowerment Index

An empowerment index used for this study to assess the empowerment status among the two countries of the study as well as the four compared states. The developed index had two stages of modification, one is the empowerment dimensions collection and calculations which has been done by the researcher, and the other is the weightages stage which done by the experts to give a weightage for each dimension.

The results clearly showing the difference of the empowerment score of each dimension of the gender

empowerment before and after joining the ICT-based initiatives among the two countries of the study. Except the social dimension, all the dimensions of gender empowerment show a difference before and after joining, as the economic empowerment scores before the joining were 3.92 and 2.61 for India and Egypt respectively, while after the joining were 4.13 and 3.46 respectively. Cultural empowerment score was before 3.99 for India and 3.28 for Egypt while it was after joining 4.11 for India and for Egypt was 3.88. the informational empowerment scores for India was 2.19 before joining and 2.28 after joining, while in case of Egypt it was 1.86 before joining and 2.14 after joining Byoutna initiative.

Further, the total empowerment index has calculated as planned and results presented in this study showing the total score for the total empowerment index before and after joining the ICT-based initiatives between the two countries. Clearly found that there is a difference between the empowerment index before joining and after joining in both two countries as it was 12.96 and becomes 17.23 for India and was 12.79 in Egypt before and becomes 15.87 after joining the ICT-based initiatives.

For more understanding of the differences between the total empowerment index, Analysis of Variance (ANOVA) has calculated, the results showing that the index score differences between India and Egypt before the joining to the ICT-based initiatives were significant in the level of 0.05 of significance while it was highly significant at the level of 0.01 after joining the ICT-based initiatives. The same results obtained for the paired samples t-test which was significant at the level of 0.01.

Implications of the study

- The results of this study may help in further development by adopting good practices of ICTs from India and Egypt.
- ICT-based strategy needs to be specifically designed for gender empowerment and has to be integrated in the planning stage.
- The study suggests that the Gender Gap has to be minimized through ICT led interventions at national level.
- The results threw out some light on the ICT barriers especially in terms of gender perspective.

Suggestions for Further Research

- Cross cultural comparison is required to be made between different context to understand the level of empowerment as well as the effectiveness of ICTs.
- ICT-based development interventions needs to be continuously analysed in depth to explain the differences in their effectiveness.
- Content analysis of the ICT portals may help in designing strategies for future ICT based development interventions for gender empowerment.

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قدرة تكنولوجيا المعلومات والاتصالات على تمكين المرأة الريفية في البلدان النامية: دراسة اقتصادية- اجتماعية مقارنة لمصر والهند

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تم الترويج لتكنولوجيا المعلومات والاتصالات (ICT) بشكل متزايد كحل رئيسي للتنمية الشاملة، والقضاء على الفقر وتمكين الفئات المحرومة تاريخياً، كالنساء والأقليات في العالم. وقد تم الإشادة بالمبادرات والمشاريع القائمة على تكنولوجيا المعلومات والاتصالات باعتبارها فرص هائلة لتمكين المرأة. ومع ذلك، تُظهر البحوث والخبرات أنه لكي تنجح المبادرات والمشروعات، يجب أن يكون هناك توازن بقدر ما بين الحاجة إلى التغلب على العوائق الهيكلية التي تعترض تقدم المرأة والحساسية تجاه المساحة المحدودة التي تنتقل فيها نساء كثيرات في العالم. في هذه الورقة، نستعرض الأدبيات المتعلقة عن طريق نماذج من المبادرات القائمة على تكنولوجيا المعلومات والاتصالات بغرض التمكين الاجتماعي والاقتصادي للمرأة ، بالاعتماد على مبادرتين للتمكين في دولتين ناميتين (الهند ومصر) كدراسات حالة لمقارنة حالة تمكين النوع الاجتماعي من خلال هذه المبادرات القائمة في الدول النامية. تم العثور على بعض النتائج مثل: (1) الدعم الحكومي والمؤسسي هو عامل رئيسي يؤثر على تمكين النوع الاجتماعي، (2) يجب استهداف المشاركة المجتمعية للمرأة مع تشكيل استراتيجية تمكين ذكية معتمدة على التكنولوجيا الرقمية، (3) التدريب القائم على تكنولوجيا المعلومات والاتصالات هو واحد من أكثر الأنشطة المطلوبة نحو تمكين النوع الاجتماعي في بلدي الدراسة، (4) تفتح المبادرات القائمة على تكنولوجيا المعلومات والاتصالات ساحة واسعة لكل من النساء والرجال. نتوقع أن تكون النتائج المستخرجة من هذه الدراسة مفيدة سواء لأغراض التطوير الفعال للبرامج وتصميم السياسات من كلا البلدين خاصة وكذا في جميع بلدان العالم بشكل عام.