



## “REJUVANATING PROFESSIONAL WOMEN WITH SUPPORT OF INFORMATION & COMMUNICATION TECHNOLOGY (NCR)”

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### ABSTRACT

Information and Communication Technology is most flourishing sector these days. It consists of all technical means used to handle information and aid communication, including computer and network hardware, communication middleware as well as necessary software. The purpose of this research is to provide the reader with an overview of some of the dimensions relating to professional women and Information and Communication Technology (ICT) in NCR. The paper helps to understand the unique perspectives of professional women in addressing the larger issues of diversity. The study is a comprehensive evaluation of the response of professional women to the adoption of ICT devices. Primary method of data collection was ratified to abutment the study. 200 questionnaires were administered to the employees of the 25 selected organizations. Out of which, 178 were respectively retrieved and after that 135 out of 178 were found suitable for the study. At conceptual level, the study results to understand when and what type of ICTs are endorsed by the professional women. At the operational level, the study derives that the acceptance of ICTs has a positive impact on the life of professional women. The adoption of ICTs enhances professional women and leads to a wider, faster and more efficient output. It has also made work easier and more interesting, improves the competitive edge, improves relationship and strengthens the professional women.

**Keywords:** Professional Women, Information and Communication Technology, Enhancement, Factor Analysis



## INTRODUCTION

Information and communication technologies have changed the face of the world we live in. ICT (information and communications technology - or technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. It also focuses on the electronic end of the spectrum such as e-mail, the Internet, mobile phones and digital video.

It permeate every aspect of our lives; from community radios in the most rural parts of the globe to cellular phones in the hands of women in every community on earth, to computers in almost every medium to large organization. The advancement of ICTs has brought new opportunities for both knowledge sharing and knowledge gathering for both women and men. Specifically, without a thoughtful policy, strategy, and execution plan to ensure women's full engagement in the knowledge society, the places in which they work, the families for whom they care, and the communities in which they live and serve will not thrive. The application of information and communication technology concepts, techniques, policies and implementation strategies to professional women's life has become a subject of fundamental importance. ICT directly affects how one decides, plans and what products and services are to be used in the life. It has continued to change the way of living the life and the variety of innovative devices are available to enhance the speed and quality of work performance.

The research enables to relate the various dimensions of ICT and professional women. Abreast it will help to understand the pros and cons of adopting ICT devices and will develop an understanding of how ICT usage is associated with professional women.

## REVIEW OF THE EXISTING LITERATURE

Many researchers have studied ICT from different views and in different environments. There were many research done on many sectors within the context of ICT like in education, banking, society etc, but very limited literature is available on women in relation to ICT. Only individualistic country like the USA, Europe have concentrated on the research in ICT and its devices with its relevant outcome and potential, whereas analysts, academic researchers in collectivist countries like India have paid least attention in these areas. Abagi et al (2008) in the study reveals that environment for women to venture into ICT careers as professionals therefore require that families deconstruct gender stereotypes and roles in society. They need to support girls and women to make informed choices about their careers in ICT. Engendering the policy environment in important sectors like education and labour, and in workplaces and general socialization, is one of the strategies of shifting people's thinking and reducing gender discrimination in the ICT sector, thereby making it more attractive to women who contemplate entering the sector as professionals. Amadi (2007) study in Kenya indicated that women are highly optimistic, embracing ICT as a practical mechanism for achieving entry into the labour market. However, they perceive significant structural barriers, such as public policies that fail to facilitate the development of the ICT sector, gender discrimination by employers, and training that provides them with insufficient technical skills to enable them to effectively perform in the workplace. George (2003) and DTI (2005) studied that the spread, acquisition and access to Information and



Communication Technology (ICT) has been growing very quickly. Currently, there is a continued high demand from the public in many sectors to acquire relevant skills to access ICT. This is because there is a close link between such skills and employment and/or career progression in and outside the country in both public and private sectors. This growth has however, instigated several challenges for women in the ICT career fields. The employment conditions in ICT work are often unfriendly to women, particularly women with children or other caring responsibilities. Travel to clients and on-site working can also be difficult. Women consequently drop out of ICT employment in particularly large numbers after maternity. Marcelle (2002) reveals that there is a need to align development in the ICT arena with human development objectives is now widely accepted. There is an urgent need to fill the “gender equality in the ICT arena” conceptual gap and to develop effective strategies that can encourage concerted action. These steps are needed to ensure that women secure access to the potential benefits of the information and communication technologies (ICT) and to minimize potential dis benefits associated with the ICT revolution. All the above studies provided us with a strong base and give us idea regarding issues in ICTs adoption by women. They also give us the results and conclusions of those research already conducted on the same area for different countries and environment from different aspects. On basis of some research done in different countries, we have developed our own methodology for research.

## RESEARCH DESIGN

### OBJECTIVE OF THE STUDY:

The dimensions that relate to the adoption of Information and Communication Technology devices were used for the research. The objective of the research deals with the two areas, which are as follows:

- A. NATURE AND DEGREE OF ADOPTION OF ICT DEVICES:** This objective refers to since when professional women is using ICT devices. The ICT devices undertaken for the research are computer, internet, mobile, automated teller machine, telephone banking, smart cards and electronic calculators.
- B. IMPACT OF ADOPTION OF ICT DEVICES:**
- a) To determine whether professional women are enhanced by the usage of ICT devices.
  - b) To identify the attribute having high effect on the enrichment of professional women.
  - c) To analyze the relationship between the age and the efficiency of professional women.

### DATA COLLECTION:

- A. PRIMARY DATA:** The focus from the researcher side was to carry out a more comprehensive evaluation of the response of professional women to the adoption of ICT. The study covered 25 well-reputed organizations. A close-ended questionnaire was designed by the researchers to carry out the research. Other responses were rejected because of over lapping of the answers, submitted out of ignorance and non-uniformity of the responses.
- B. SECONDARY DATA:** Secondary data analysis saves time that would otherwise be spent in collecting the data. The secondary data was collected by the researchers through number of international / national journals, magazines, e-magazines, books available in the different libraries at different locations.



### **SAMPLE SIZE AND AREA:**

A total of 200 questionnaires were administered to the employees of the selected 25 organizations by the researcher through e-mails and personal contacts. Out of which, 178 were respectively retrieved. However, this research studied the responses of 135 professionals working in NCR (National Capital Region) in India.

### **HYPOTHESIS DEVELOPMENT:**

In accordance to the objectives of the research the following hypothesis are developed:

**HYPOTHESIS 1:** Usage of ICT devices enhances the professional women.

**HYPOTHESIS 2:** Knowledge enhancement and modernization are the two attributes which enriches the professional women highly.

**HYPOTHESIS 3:** Efficiency of Professional Women is related to the Age of the professional women.

### **STATISTICAL TOOL**

The researcher has used correlation and factor analysis, statistical tool to authenticate the research work carried out in the research. Correlation is a statistical technique that can exhibit how strongly pairs of variables are related. Correlation transformer is used to determine the extent to which changes in the value of an attribute are associated with changes in another attributes. Factor analysis is used to describe variability among observed, correlated variables in terms of a potentially lower number of unobserved, uncorrelated variables called factors. Factor analysis searches for such joint variations in response to unobserved latent variables. SPSS Version 19 is used to make the calculations.

### **DATA TABULATION AND CALCULATION**

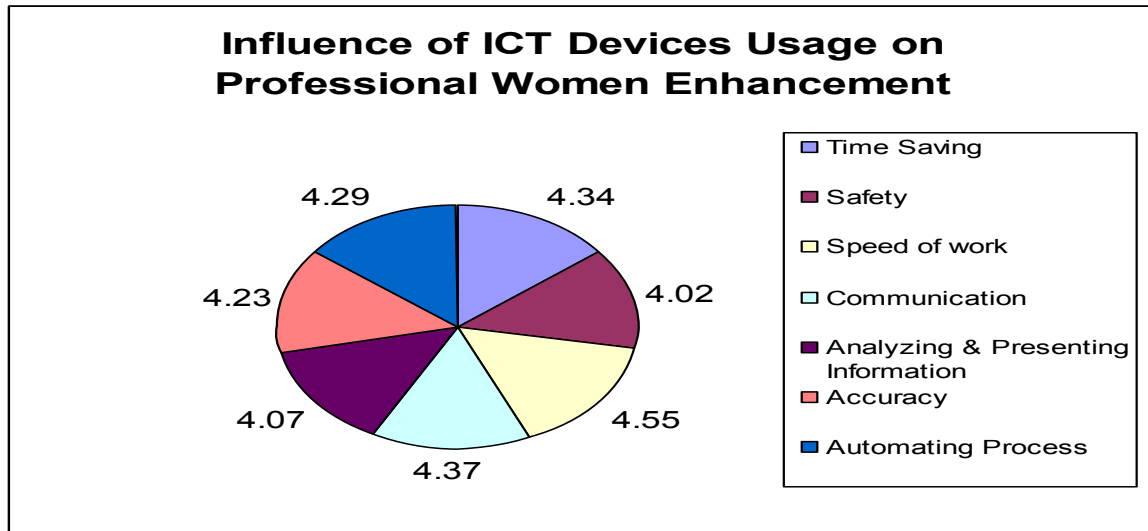
**TABLE 1: NATURE AND DEGREE OF ADOPTION OF ICT DEVICES**

Ser. No.	ICT Devices	Since 1995	Since 1999	Since 2003	Since 2007
1.	Computer	29	49	42	15
2.	Internet	10	45	61	19
3.	Mobile	7	29	71	28
4.	Automated Teller Machines	3	21	56	55
5.	Telephone Banking	3	4	40	88
6.	Smart Cards	3	9	42	81
7.	Electronic Calculators	31	44	34	26

(Source: Data tabulated and calculated by the researcher, 2011)



FIGURE 1: ENHANCEMENT OF PROFESSIONAL WOMEN



(Source: Data tabulated and calculated by the researcher, 2011)

### CORRELATION ANALYSIS

TABLE 2: RELATION OF AGE BELOW 25 AND EFFICIENCY OF PROFESSIONAL WOMEN

CORRELATION MATRIX								
Variables	Age	F	RE	IQW	BC	RBCC	NBO	IA
Age	1							
F	0.098	1						
RE	0.085	0.253	1					
IQW	0.256	0.420	0.332	1				
BC	-0.189	0.174	0.269	0.374	1			
RBCC	0.002	0.234	0.223	0.043	0.166	1		
NBO	-0.055	0.123	0.407	0.235	0.364	0.367	1	
IA	0.048	0.117	0.047	0.349	0.307	0.276	0.135	1

\*. Correlation is significant at the 0.05 level (2-tailed).

(Source: Data tabulated and calculated by the researcher, 2011)

TABLE 3: RELATION OF AGE ABOVE 25 AND EFFICIENCY OF PROFESSIONAL WOMEN

CORRELATION MATRIX								
Variables	Age	F	RE	IQW	BC	RBCC	NBO	IA
Age	1							
F	0.020	1						
RE	0.149	0.479	1					
IQW	0.271	0.170	0.339	1				
BC	0.360	0.030	0.216	0.432	1			
RBCC	0.169	0.427	0.458	0.246	0.274	1		
NBO	0.185	0.442	0.490	0.215	0.255	0.674	1	
IA	0.284	0.370	0.201	0.157	0.213	0.306	0.196	1

\*. Correlation is significant at the 0.05 level (2-tailed).





(Source: Data tabulated and calculated by the researcher, 2011)  
(VARIABLES: F – Flexibility, RE - Reduce Efforts, IQW - Improves Quality of work, BC - Better Coordination, RBCC - Reduces Business Correspondence Cost, NBO - New Business Opportunities, IA - Increase Adaptability)

**FACTOR ANALYSIS**

**Table 4: Total Variance Explained**

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.406	24.329	24.329	3.406	24.329	24.329	2.551	18.221	18.221
2	1.974	14.102	38.431	1.974	14.102	38.431	1.965	14.037	32.258
3	1.388	9.913	48.344	1.388	9.913	48.344	1.728	12.344	44.602
4	1.302	9.298	57.642	1.302	9.298	57.642	1.670	11.930	56.533
5	1.019	7.276	64.918	1.019	7.276	64.918	1.174	8.385	64.918
6	.837	5.981	70.899						
7	.769	5.492	76.391						
8	.657	4.690	81.082						
9	.590	4.214	85.296						
10	.557	3.980	89.276						
11	.470	3.358	92.634						
12	.431	3.079	95.713						
13	.319	2.275	97.988						
14	.282	2.012	100.000						

(Source: Data tabulated and calculated by the researcher, 2011)

**Table 5: Rotated Component Matrix**

Attribute	Component				
	1	2	3	4	5
Modernization	.638	-.028	.169	.300	.326
Competitive Strength	.366	.041	.705	.191	.112
Generating More Revenue	.142	-.048	-.029	.844	-.055
Proper Forecasting	-.098	.352	.369	.834	-.240
Encouraging Experimentation	.204	.406	.359	.458	.040
Faster Services	.625	.291	-.197	.318	.249
Eliminating Language Barriers	.087	.778	-.073	.218	-.061
Decision Making	.046	.098	.833	-.054	-.221
Knowledge Enrichment	.752	-.080	.252	-.116	.016
Higher Studies	.706	-.025	.128	.168	-.099
Simplify Access at International Level	.624	.269	-.057	-.157	-.299
Convenient Official Hours	.150	.750	.096	-.264	-.061
Reduces Interpersonal Relationships	-.011	-.009	-.115	-.128	.868
Secure Transaction	-.251	.574	.306	.183	.146

(Source: Data tabulated and calculated by the researcher, 2011)



**Table 6: Communalities**

Attribute	Initial	Extraction
Modernization	1.000	.632
Competitive Strength	1.000	.682
Generating More Revenue	1.000	.738
Proper Forecasting	1.000	.613
Encouraging Experimentation	1.000	.546
Faster Services	1.000	.677
Eliminating Language Barriers	1.000	.669
Decision Making	1.000	.757
Knowledge Enrichment	1.000	.649
Higher Studies	1.000	.554
Simplify Access at International Level	1.000	.579
Convenient Official Hours	1.000	.668
Reduces Interpersonal Relationships	1.000	.784
Secure Transaction	1.000	.541

(Source: Data tabulated and calculated by the researcher, 2011)

## DATA INTERPRETATION

Table 1 indicates since when professional women are using ICT devices. Rate of adoption of ICT devices has increased progressively among the professional women since 1999 and 2003, in two devices telephone banking & smart cards it has increased since 2003 and 2007 because of the crucial roles it plays in their career. This agrees with Laudon, and Laudon, (1991) who contend that managers cannot ignore Information System because they play a critical role in contemporary organization.

The above figure 1 exhibit the usage of ICT devices enhances the professional women. The figure depicts that the usage of ICT devices leads to the high-speed of performing a task among the professional women. In addition to this time saving and communication are the other two attributes which are influenced by the usage of ICT devices. The highest score for the measuring the enhancement was five and the data collected about all the attributes is reflected in the figure 1. The points for all the attributes are between four and five showing the enhancement of professional women is highly influenced by the usage of ICT devices.

The result for professional women's below the age of twenty five years (Table 2) is quite surprising as always it is assumed that young people are more comfortable and willing to use the ICT devices. Infact, the result shows that two attributes of enhancement are negatively related and remaining five are positively related with the age but, not so strongly related. The outcome reflects that being of young age and having less professional experience they are less aware of importance of ICT devices in enhancing their professional lives. Hence, researcher can say due to some attributes measuring efficiency of professional women the null hypothesis is rejected and alternate hypothesis is accepted that is age and efficiency of professional women is related.

In case of professional women's above the age of twenty five years (Table 3) all the attributes expressing the enhancement is positively related with the age reflecting the importance and



awareness of ICT devices among them which leads to the good association between the mature, experience ladies and the usage of ICT devices.

The cumulative percentage column in the above table 4 shows that the five factors extracted together account for the almost 65% of the total variance. This is pretty good bargain because the researcher is enable to economize the attributes from fourteen to five factors. The next thing is to identify what these five extracted factors represent. Considering table 5 in component 1 researcher notice that the attributes KE, HS, MD, FS & AIL having loadings of 0.752, 0.706, 0.638, 0.625, 0.624 (high loadings close to one). This suggests that component one is the combination of the above five original attributes. The common phrase which could explain the meaning of original five attributes for component one is "Sharpening Expertise". In component 2 two attributes ELB & CO are having high loadings i.e., 0.778 & 0.750 respectively. The common phrase for this component is "Comfortableness". In component 3 two attributes CM & DM are having high loadings i.e., 0.705 & 0.833 respectively. The common phrase for this component is "Improves Mental Ability". In component 4 two attributes GMR & PF are having high loadings i.e., 0.844 & 0.834 respectively. The common phrase for this component is "Visualization Power". In component 5 only one attribute i.e. RIR is high loadings i.e., 0.868. The phrase for this component is "Understanding".

Communalities are the other issue which should be kept in mind while doing factor analysis. The proportion of variance in any one of the original variables that is captured by the extracted factors is known as communality. Table 6 shows that the communality for MD is 0.632; communality for CS is 0.682 and so on. This means that 0.632 or 63.2% of the variance of the MD (attribute 1) is being captured by our five extracted factors together. Our two variables EE and ST are not visible in the final interpretation of the factors because of the low communality i.e., 0.546 & 0.541 respectively. It is possible that attribute EE and ST are independent variables which are not combining well with any other attribute. 'Freedom' could be the different concept in the mind of the professional women. In this case also null hypothesis is rejected and alternate hypothesis is accepted because the attribute KE and MD come under the first component of factor analysis showing high impact on the enrichment of professional women

## SUGGESTIONS & LIMITATION

During the tenure of the research and after its completion the researcher has come up with the following limitations in the present research and suggestions for the further study:

1. Only seven ICT devices are undertaken in the research greater number of ICT devices can be considered for the further research.
2. The time frame of the research can be stretched more.
3. A comparative research between men and women can be examined for the same topic.
4. The area under the study includes only national capital region other parts of the country can be visualized for the further research.
5. A comparative study between different states of India with the context of usage / awareness about the ICT devices can be processed further.
6. Another study with the same topic can be carried out considering a particular sector.





## CONCLUSION

The outcome of the research is almost as similar to the expectation of the researcher at the time of the initiation of the research. As the ICT devices have a positive impact and rejuvenate the life of professional women. Now a day if we talk about technology and human being, both of them are inseparable because the moment a human being starts a day he/she is surrounded by the technologies and working with them for rest of the day. The researcher had tried to dig out the information regarding the level/extent to which the ICT devices are supporting the life of professional women and having a positive impact on their lives. Besides this the research also throws some light on the fact that which attributes are having more impact on the lifestyle of the professional women.

The research reveals that most of the women feel more enhanced after the usage of ICT devices as they help them to save their time at their workplace as well as their home. The research also demonstrate that the professional women above the age of 25 years are more efficient in comparison of the professional women below the age of 25 years after the adoption of ICT devices. The result is followed by the various reasons like less experience, less age, less awareness, less requirement etc. Factor analysis, statistical tool helps the researcher to bring the numbers of the attributes to the smaller unit so as to simplify the outcome. Therefore, it is drawn out of the research that the attributes measuring the effect of the adoption of ICT devices on professional women moves parallel with the up gradation of professional women.



## REFERENCES

### ARTICLES

- [1] Bayo Idowu, Eyitope Ogunbodede and Bimbo Idowu (2003), Information and Communication Technology in Nigeria The Helath Sector Experience, Journal of Information Technology Impact, Vol. 3, No. 2, pp. 69-76, 2003.
- [2] James, O. E. (2002, October). Information and Communication Technologies: Impact on Governance, Social & Economic Development: Paper presented at the Workshop and Exhibition on Windows of Investment Opportunities in the Petroleum, Power and Telecommunication sectors of Delta State, Nigeria.
- [3] Jensen, M. (1998). Africa Internet Connectivity: Information and Communication technologies (ICT) Telecommunications, Internet and Computer Infrastructure in Africa. Retrieved from The Association for Progressive Communications.
- [4] Mariëlle den Hengst and Henk G. Sol (2001) The Impact of Information and Communication Technology on Interorganizational Coordination: Guidelines from Theory Special Series on Information Exchange in Electronic Markets, Volume 4 No 3.
- [5] Woherem, E. W. (2000): Information Technology in the Nigerian Banking Industry, Spectrum, Ibadan.

### WEBOGRAPHY

- [6] <http://ics.leeds.ac.uk/papers/ks/exhibits/78/w2000-09.05-ict-e.pdf> (retrieved on 15/9/2011)
- [7] <http://www.ebc-india.com/lawyer/articles/2002v5a1.html> (retrieved on 3/10/2011)
- [8] <http://www.countercurrents.org/gender-dalal080305.html> (retrieved on 3/10/2011)
- [9] <http://www3.sn.apc.org/africa/> (retrieved on 14/10/2011)

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