Assessing the Impact of Information Communication Technology (ICT) on Women's Empowerment in Southern Punjab, Pakistan: An Empirical Study

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Abstract

Women's empowerment is a procedure that provides control of intensity and assets to women, and completely changes them after sometime through their dynamic support in that procedure. The main objective of this study was to evaluate the impact of Information Communication Technology (ICT) on the social and economic empowerment of women in three selected districts of Southern Punjab, Pakistan viz. Multan, Vehari and Khanewal. For this purpose, cross-sectional data of 384 women (100 from Multan, 100 from Khanewal and 184 women from Vehari district) were obtained through random stratified sampling from both rural and urban areas. Women empowerment index (WEI), ANOVA, t-test and ordinary least square (OLS) methods were used for analysis. The findings concluded that the practice of ICT significantly affected the social and economic empowerment of the women. It is recommended that women should be given free access to use ICT for creating new opportunities and more empowerment in the society.

Keywords: Women's Empowerment, Women Economic Empowerment, ICT, Southern Punjab, Pakistan.

Introduction

Empowerment process is known as enlightening the ability of society to choose and alter their choices into needed acts and results. The increase in individuals' capacity to shape

out planned life selections in a setting where this capacity was earlier disagreed to them (World Bank, 2007). Women's empowerment in this way is a process and second, women must be an important factor in economic activities. It is a multi-channeled procedure, encompassing of civil, economic, political and cultural and aspects (Moghadam and Senftova, 2005, Esplen et al., 2006). Women's empowerment is a procedure that provides control of intensity and assets to women, and completely changes them after sometime through their dynamic support in that procedure (World Bank, 2008). In East Asia, women are likely more to susceptible jobs than males (50.3% for women while 42.3% for males), In the Comforting and South East Asia (about 63.1% for women though 56% for men), In South Asia (80.9% for women while 74.4% for females), In North Africa (54.7% for women though 30.2% for men), In the Middle East (33.2% for women while 23.7% for men) and In Sub-Saharan Africa (about 85.5% for women while 70.5% for men. Women of developing nations are included an average of 43% labor force at work in agricultural areas, where this ratio is about 20% or less in Latin America and 50% or more in Africa and Asia. In spite of the local and sub-regional inequality, women's mark a dynamic participation to agriculture diagonally the emerging countries. In addition, the major problems of the Muslim women are premature marriages, honor killing, lack of resources, lack of education, confined mobility, less support in employments and less opportunity of decision (Kishor, 2000; Sidani, 2005). The situation of women in the family and in the general public isn't viewed as suitable in the framework where women are isolated particularly in many developing countries (Lee and Jayachandran, 2009; Tisdell, 2002). Women are almost half of the population of Pakistan (total population 207 million) according to the Census of 2017. Women employment rate in Pakistan is very low. It is reported that the rate of Pakistani women working outside home is dropped from 23.8% in 2016 to 22.2% in 2020 (Daily Dawn, 2021). In case of women sharing from 128 countries in the world, Pakistan is ranked at 126 in economic development, ranked at 123 in education, 121 in health and 43 in political empowerment (SDPI, 2008).

ICTs could be the dominant tools for rising the economic and social uplift through the establishment of novel kinds of economic actions, job beginnings, developments in health-care system and additional services, and the growth of networking, contribution and encouragement within society. In spite of the fact that ICT is been utilizing for empowerment of women in numerous nations in Asia, Africa and other developing territories on the planet, yet no systematic mechanism is there for estimating and following variations in dimensions

of empowerment by ICT intercession. As such, several research methods (counting member perception, singular meetings, bunch interviews, examine the selected email messages, response of interviewers that presented quantitative and qualitative data and numerical investigation of statistic and individual data) were being utilized in Australia, a developed nation to explore empowerment and disempowerment of rustic women (Lennie, 2002). ICT plays a pivotal part in women's empowerment and in its different dimensions like education, health, fertility rate and women involvement in household decision making etc. Because of shortage of IT framework and ICT skills, the teachers of higher education assumed to basic teaching practices which hamper knowing of students' in many ways (Shahzad et al., 2021). Therefore, ICTs can educate the women about their right even in the presence of low female literacy rate in Pakistan (Nikulin, 2016). The major attention of this research is to analyze the role of ICTs on women's empowerment that how women use technology for her betterment. Women's empowerment is the important key factor of social and economic progress of any nation. Mobile phone usage, internet usage and electronic media like TV, radios etc. are included in ICTs. In Pakistan, there is lack of resources and awareness for women access to mobile and internet but mostly women use TV and radio. TV channels also inform the women about their human rights and highlight the women social issues. Poverty is also massively affects the men and women, particularly in developing nations like Pakistan (Kimmitt et al., 2020; Zafar and Mohsin, 2020). Pakistan suffers greatly from poverty and gender discrimination issues but in current situation due to rapid increase in usage of mobile phone, internet, TV and radio change the thinking of people. Due to ICT revolution and enhanced access of mobile phone and internet earning opportunities for women have increased even in the presence of social barriers (Hosseini and Manjunath, 2016). This increase earning opportunities for women has significant contribution in their economic empowerment as well as economic growth in the country. ICT is also helpful in using female human capital by generating opportunities of e-businesses, online jobs, e-marketing and software development etc. It can contribute in enhancing GDP of the country as well as social status of women (Arrawatia and Meel, 2012). Similarly, women's contribution in ICT enterprises and governmental organizations (GOs) and non-government organizations (NGOs) based on ICT in Bangladesh alters the conducted part of way of living of women and subsequently influences the general public (Ahmed et al., 2006).

Statement of Problem

Pakistan is a developing nation with a massive number of populations having almost equal figures of men and women. Mobile based financial services are growing rapidly for past few years in Pakistan due to development in ICT. There are several mobile based banking services in Pakistan like Easy paisa, jazz cash, UBL Omni, HBL express, U-paisa, Meezan, Upaisa and mobile paisa. Some of these services are provided by cellular phone operator and others are introduced by commercial banks. These services provide ease to access banking services virtually without visiting any bank branch physically (Simonsson and Walin, 2015). The access to mobile phone is in increasing rapidly in Pakistan. There is rapid growth in market of mobile phone nearby 6 million additions per month. Before 1990 mobile phone services were not available in Pakistan but in the early 1990s mobile phones services started and increased rapidly. This rapid growth of mobile technology has significant contribution in economic growth and social development because use of this technology has least level gender discrimination. Women economic, social, political betterment has been given key attention in the study. When women use internet, electronic media and mobile phone frequently they are well aware about.

Objectives of the Study

The main objectives of this research were:

1. To investigate the impact of information communication technology (ICT) on women's empowerment and which factors are important for women empowerment?
2. To examine the role of cell phone usage on women's empowerment in Southern Punjab.

Research Questions

1. What is the impact of information communication technology (ICT) on women's empowerment and which factors are important for women's empowerment?
2. What is the role of cell phone usage on women's empowerment in Southern Punjab?

Literature Review

ICT and Women's Empowerment: Theoretical Background

Bennet (2002) states the empowerment as the development of assets and capacities of varied persons and groups to employ effect and hold liable the institutes which affect them. Among most recent two decades empowerment has turned into a well-known exchange in all gatherings, classes, symposiums and workshops regarding the socioeconomic advancement

and human development of the country. In every one of the arrangements concerning richness conduct and statistic progress, welfare, newborn child mortality, economic well-being and poverty alleviation. In this regard, women's empowerment is utilized as one of the approaches by numerous global associations including the World Bank and other significant United Nations (UN) agencies (Kabeer, 2001).

Chaudhary et al., (2012) investigated the examination of various ways to deal with women's empowerment in Pakistan. Women's empowerment has pulled in the thought of analysts as a working area of research since 1980s. The examination was force to look into how awareness/refinement of women about their rights, monetary women's empowerment and women's general advancement can be valuable in attaining the goal of women's empowerment. This exploration has used the data for the season of 1996 to 2009 for Pakistan. Observational findings revealed that cognizance of women's rights; women's financial empowerment and women's general advancement have encouraging and basic effect on empowerment of the women as determined by Gender Empowerment Measure (GEM) record. Furthermore, Granger Causality Test attested the nearness of bi-directional causation between women's general advancement and women's empowerment. A unidirectional connection found between women's refinement and women's empowerment. Khan (2014) analyzed the women's empowerment through ICT and argued that ICT offered the equal opportunities to everyone. The control of ICT in women's hand had expanded the educational and healthy lifestyle. The biggest barrier for women's empowerment was the lack of internet access and lack of using knowledge from internet. Means of women's empowerment assisted in development of family, community, nation and state and the initiatives that focused on educating women and teaching them computer had demonstrated the value of Internet for women.

Laizu et al., (2015) investigated the effect of ICT on empowerment of the women in Bangladesh. The technique utilized in this examination was a fuse of subjective and quantitative strategies. In this investigation utilized an organized poll, information was assembled from women in two remarkable towns where ICT ventures have been displayed. The findings show that ICT involvement changed the women's wisdom a positive path in one town; anyway, it didn't change in the other town. Similarly, Mary and Cherian (2006) analyzed the worldwide approach and broke down the overall methodology and technique exercises of NGOs, the Government and the Corporate Housing in engaging women via ICT.

The examination depended towards investigating the issue examinations of women in countries like Bangladesh, India, Zimbabwe, Uganda and Guyana who grabbed gigantically by extended receptiveness to web accessibility. The examination has proposed a couple of ways to reduce hindrances to use and overview to ICT for women with unprecedented position to India which joins: (a) women's taking issue reinforcing through ICT as a need issue, (b) need of a rights-based approach to manage ICT technique, (c) Accepting of ICT game plan which suitable to the necessities of women, For instance, ICTs should be done more "women welcoming", (d) Pointing the language options in the point of convergence of course of action choices, and (e) giving of inspirations to the selection of young women in ICT programs.

Basit et al., (2009) explored the effect of education on women employment contribution in Pakistan and used empirical indication from the analysis of primary data. The principle motivation behind the investigation is to investigate the impact of training on female employment participation. The investigation depends on the primary data. Data has been gathered through stratified random sampling and simple random sampling methods. One hundred and sixty-four females matured 15-64 years are met for this analysis. Tests are drawn both from urban and provincial areas as per the populace conveyance. Data is gathered through field review about different educational levels, shut relative educational status and other instruction related factors. The example comprises on One hundred and Sixty-four Females. The analysis is made at two segment levels. To begin with, we have exhibited the fundamental analysis of data. Auxiliary, an econometric analysis is made by utilizing Logistic Regression model. Hence presumes that informed female is fruitful in accomplishing business, raising yield and development. Basis Regression Model In this examination, we have utilized binary Logit econometric model for analyzing the impact of instruction on woman work force contribution regarding binary attributes. Padmini et al., (2013) analyzed the mobile technology's role in women's empowerment field. The examination found that not only for correspondence, women are furthermore using the various ways to be protected in a bad position, as a media connection with present updates in regular and as an e-learning gadget to end up proficient. Additionally, the examination suggested that IT can be connected in the provincial women's empowerment through giving virtual investigation lobby training, giving planning on internet and email administrations, building up an electronic data framework about the SHG and they can be advanced in magazines, papers and web, which

goes about as a powerful element. Moreover, the examination has perceived that the mounting of women-focused portable undertakings and applications must be accomplished with enhanced cash related, business, and showcasing motivating forces and obviously, collaboration.

Alam (2011) analyzed the gender inequality was exist in Pakistani society on high level. In Pakistan, 35 million people were living in the rural areas and they were busy with agriculture and labor force. In rural areas, Poverty ratio was higher than that in city areas of Pakistan and the biased division of wealth and resources had great effect on gender fairness. Mostly women were financially depending on men because Pakistani cultural society did not permit the women for jobs. In rural areas the main purpose of sex discrimination was unequal circulation of incomes and capital. Women's limited approach to the resources like education and health, imperfect access of authority and public and traditional hurdles were the factors of gender discrimination in the Pakistani societies.

Materials and Methods

This research was undertaken to measure the role of ICT on women's empowerment in southern Punjab. For this purpose, a quantitative research design was framed. Various age groups of women were comprised as population for current study.

Study Area

The study was undertaken in selected three districts of southern Punjab, Pakistan including viz. Multan, Vehari and Khanewal. Southern Punjab has 34,743,590 total populations as of 2017 census out of which 17,010,900 women (GOP, 2017).

Data Collection

The study employed primary data collected through a questionnaire. Questionnaire was designed in English and have translated and modified in local languages (Urdu, Punjabi, Saraiki etc.) while interviewing women. Before the final collection of data, the reliability of the questionnaire was checked manually. Consequently, the corrections were incorporated in the questionnaire and method of data collection. The questionnaire consisted questions regarding components of women's empowerment i.e. labor force participation, control over resources, financial liberty, women ability of household decision making, economic decision making, women freedom of mobility, women health condition, the power to arise against the evils of the society, right to education according to their choice, access to radio and right to use print media, television and social media.

Sampling Framework

The survey is based on random stratified sampling technique with a structured questionnaire. Cross Sectional data of 384 women (100 women randomly selected from Multan, 100 from Khanewal and 184 women selected from Vehari district) is collected through face to face interviews and the sample was chosen in two stages urban and rural parts. Women of age group 18-50 years old were taken as the target population for analyzing the purpose of the present research.

Data Analysis

In order to describing the relationship among the variables included in this study several statistical measures were applied. For this purpose, the SPSS 21 software was used for analysis. ANOVA and T-test were also utilized to calculate the data. The study also used inferential statistics for the analysis of data. The method of Ordinary Least Square (OLS) was used for regression analysis to check the role of different ICT indicators in determination of women economic and social empowerment along with set of control variables. The study also used correlation analysis to check the association between various ICT indicators and women's empowerment in southern Punjab, Pakistan. The statistical relationships are constructed for the purpose of explaining and predicting the effects on one variable that is resulting from the changes in one or more explanatory or predictor variable:

$$Y = \alpha + \beta X$$

Generally, the dependent variable, Y, depends upon a larger set of independent variables and analysis can be extended to more than one independent variables. The general form of OLS model will be:

$$Y = \alpha i + \Sigma \beta i n i=1 X i + \mu$$

The Model

The proposed measure of women's empowerment has the combination of two broader dimensions, i.e., social empowerment and economic empowerment. Each of these two dimensions includes several indicators. The economic empowerment of women includes:

1. Economic security (labor force participation)
2. Control over resources
3. Financial liberty
4. Economic decision making.

While the social empowerment of women includes:

1. Household decision making ability of women
2. Freedom of mobility of women
3. Health condition of the women
4. Power to arise against the evils of the society
5. Right to education according to their choice (self-esteem).

The geometric mean was used to combine the sub-indices into a composite Women Empowerment Index (WEI). The dimensions of sub-indices used to normalize the data by using the method of Klugman (2010) and sub-indices were constructed through the average of the standardized data of these dimensions with the following equations;

Women Empowerment= (Ieconomics1/2. Isocial1/2)

$$WEIi = (MUi,) \quad (1)$$

$$WEi = \beta 0 + \beta 1 MUi + \beta 2 IUi + \beta 3 MMUi + \beta 4 GIi + \mu 1 i \quad (2)$$

$$WEEi = \beta 0 + \beta 1 MUi + \beta 2 IUi + \beta 3 MMUi + \beta 4 GIi + \mu 2 i \quad (3)$$

$$WSEi = \beta 0 + \beta 1 MUi + \beta 2 IUi + \beta 3 MMUi + \beta 4 GIi + \mu 3 i \quad (4)$$

The description of these variables is given in Table 1. A linear relationship is genuinely precise and, in certain instances, limited. It is vital to differentiate requirements which can be analyzed in the outline of a linear regression from those which cannot. Linear regressions required two main characteristics of any model. Each term of the right-hand side must have only one coefficient that enters multiplicatively and the error must enter additively.

Table 1: *Description of Variables*

Dependent Variables		
Variable Name	**Variable Code**	**Variable Definition**
Women Empowerment	WE	"Process by which women gain power and control over their own lives and acquire the ability to make strategic choices" (Joti, 2018).
Women Economic Empowerment	WEE	"Women's economic empowerment is critical to achieving gender equality and sustainable development" (Klugman, 2010).

Women Social Empowerment	WSE	"Social empowerment is understood as the process of developing a sense of autonomy and self-confidence, and acting individually and collectively to change social relationships and the institutions and discourses that exclude poor people and keep them in poverty" (Klugman, 2010).
Independent Variables		
Mobile Usage	MU	"A mobile phone is a wireless handheld device that allows users to make and receive calls and to send text messages, among other features. Today's mobile phones, however, are packed with many additional features, such as web browsers, games, cameras, video players and even navigational systems" (Klugman, 2010).
Internet Usage	IU	"The measurement (expressed in bytes, kilobytes, megabytes or gigabytes) of the amount of data flowing through your computer and the Internet network for a defined period" (Joti, 2018).
Mass Media Usage	MMU	"Any of the means of communication, as television or newspapers, that reach very large numbers of people" (Asif, 2013).

Table 2 showed that 32.8% respondents read the newspaper or magazine after a fort night, 30.5% not read the newspapers and magazines, 16.4% read on daily basis, 12.5% read once a week and 7.8% read the newspaper less than a week. Highest ratio 27.9% of respondents were not listening the radio, 26% listing on daily basis, 19% listen radio once a week, 15.1% listen the radio less than once a week and 12% listening radio at once a fort night. Table 2 showed highest respondents 69.3% were not watched the television (TV), 12% women watched TV on daily basis, 7.6% women watched TV less than once a week, 7.3% women watched TV at least once a week and 3.9% respondent watched TV at once fort night. Further, it represents that the highest ratio of respondents (60.7%) were used computer and tablet on daily bases, 15.9% respondent were not used computer, 10.2% respondents were used computer at once a weak, 9.6% respondents were used computer and tablet less than a

week and only 3.6% respondents were used computer or tablet at once a fort night. Chun and Tang (2018) studied with the help of Asian Development Bank (ADB) on the part of ICTs in female workers empowering. It studies the effect of investment in ICTs on demand of female and skilled workers and discussed the impact of internet and other ICTs on female and workers educated from college. The study used the data about internet usage during 2006-2009 reported in country comprehensive enterprise census data and firm's base survey data. The findings showed that positive and strong impact of internet usage on female empowerment and it reduced gender inequality in jobs.

Table 2: *Mass Media Usage in Percentage (%)*

Items	Not at All	Less than once a week	At least once a week	Almost Everyday	Once Fort night
Do you read a newspaper or magazine?	30.5	7.8	12.5	16.4	32.8
Do you listen to the radio?	27.9	15.1	19.0	26.0	12.0
Do you watch television?	69.3	7.6	7.3	12.0	3.9
During the last 3 months, did you use a computer or a tablet?	15.9	9.6	10.2	60.7	3.6

Table 3: *Women's Empowerment through ICT*

Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
You feel free to make (e-purchases without consulting another person (e.g.) Husband, elder family member.	7.0	22.7	22.1	37.5	10.7
Are you allowed to have personal belongings?	6.5	22.1	21.9	39.8	9.6
The government is giving sufficient support to provide ICT education to the women in your area.	9.1	21.1	25.8	36.5	7.6

ICT has provided the women opportunity to work from home and earn.	8.1	13.8	27.6	43.5	7.0
ICT has helped women folk in Southern Punjab, Pakistan about what is happening in the country and outside.	5.5	18.0	27.6	41.9	7.0
Rural women folk are deprived of ICT infrastructure.	8.9	16.1	27.1	39.3	8.6
Women still want to make use of ICT for their next generation development.	3.6	9.4	19.3	52.6	15.1
Entry of women workforce in ICT Industry is affected by their socio-economic and educational background.	3.9	6.3	23.4	52.3	14.1
Do you agree the development of ICT and it applications in day to day life in the office, home and market has made your life easier than earlier.	4.4	12.0	25.5	44.5	13.5
Do you purpose ICT to help in your daily life?	3.9	13.0	26.3	45.6	11.2
Internet is easily accessible in your area.	3.4	11.2	18.5	45.3	21.6
Have your job needs the application of ICT?	2.6	8.3	32.0	41.4	15.6
How much are you satisfied with the work culture of your office?	4.9	10.9	29.7	43.0	11.5
You have freedom in the decision making of your family.	2.1	14.8	25.5	37.5	20.1
You feel free whether to take on employment or not without consulting another person (e.g.) Husband, elder family member.	4.2	19.3	25.5	33.3	17.7
You feel free to visit the market without consulting another person (e.g.) Husband, elder family member.	5.5	21.1	22.4	35.9	15.1
You have a say in whether to send daughters to school.	3.9	9.4	21.1	37.8	27.9
You feel supported by your family in striving for more empowerment.	2.9	9.4	17.7	41.9	28.1

You feel that your opinion is respected at home	3.4	7.8	18.2	42.2	28.4
Working from home has resulted in curbing the leisure hours of the women.	2.3	12.2	23.2	47.9	14.3
The use of internet has made everyone's life easier.	2.3	9.4	20.1	42.4	25.8
Are you getting the proper facility of applications of ICT in the form of telecommunications, Internet, electronic media, print media, etc. in your locality?	3.1	7.6	18.8	52.6	18.0

Table 3 showed that highest ratio 37.5% respondents were feels easy to do buying without discussing with another person, 22.1% were neutral in purchasing anything without any other person maybe or maybe not, 22.7% were disagreed for this question, 10.7% were strongly agreed and they have fully freedom in purchasing and 7% were strongly disagreed and they have no freedom in purchasing anything without any other related person like husband, father etc., 39.8% respondents were have to allowed personal belongings, 21.9% were neutral in personal belongings, 22.1% women were disagreed and they not allowed to have personal belongings, 9.6% were strongly agreed and 6.5% strongly were disagreed, 36.5% respondents were agreed to provide sufficient education of ICT, 25.8% were neutral, 21.1% were disagreed for the provision of ICT education for government job, 9.1% were strongly disagreed and 7.6% respondents were strongly agreed for the support of ICT education in their area. Highest ratio 43.5% respondents were admitted the value of ICT which provide the opportunity of women work and earn at home, 27.6% were neutral, 13.8% were disagreed, 8.1% were strongly disagreed to provide the opportunity for women with ICT and only 7% were strongly agreed with this step. Nagamani and Veni (2016) studied the Information communication technology (ICT) for giving powers to rustic women in India and found that ICT is a perfect tool for benefit of rural women in India and people search information on internet using different devices. Rural women started to utilize their various kinds of technological instruments. Mobile phone usage was greater than land line usage. The facility of mobile phone was developed economic liberalization to women and decision-making capacity.

Furthermore, table 3 demonstrated that 41.9% were agreed to the effect of ICT on women's empowerment in southern Punjab, 27.6% were neutral, 18% women of folk southern Punjab were getting help with the use of ICT, 7% were strongly agreed and 5.5% were strongly disagreed, 39.3% rural women folk was deprived of ICT infrastructure, 27.1% were neutral, 16.1% were disagreed with this statement, 8.9% were strongly disagreed and 8.6% were strongly agreed with this statement. Highest ratio of respondents (52.6%) were willing to adopt of ICT for their coming siblings, 19.3% were neutral for this use of ICT, 15.1% were strongly agreed with this statement, 9.4% respondents were disagreed and only 3.6% were strongly disagreed and not want to make the ICT education for next generation. About 52.3% respondents were agreed to women entry in ICT field affected in socioeconomic and educational background, 23.4% were neutral, 14.1% were strongly agreed with this statement, 6.3% were disagreed and only 3.9% were strongly disagreed with this notion, 44.5% respondents were admit that development of ICT make the life of women easier, 25.5% respondents were neutral, 13.5% were strongly disagree, 12% were disagree and 4.4% were strongly disagreed with this statement, 45.6% respondents were agreed with the purpose of ICT in daily routine life, while 26.3% were neutral, 13% were disagreed, 11.2% were strongly agreed and 3.9% were strongly disagreed with this statement. Muturi (2005) studied the empowerment of gender through ICTs for women in the Caribbean. The study concluded that ICTs promoted the national development and improved gender empowerment. Government, non-government and organizations can play a vital part in access to ICTs for women. The study identified some challenges to ensure the women's empowerment using technology in the world. The study also found that access of technology was increasing among Caribbean women.

Table 3 showed that 45.3% respondents were agreed to easy access of internet in their area, 21.6% women were strongly agreed, 18.5% respondents were neutral, 11.2% respondents were disagreed and only 3.4% respondents were strongly disagreed because they have no easy access of internet in their areas. Nimbalka and Berad (2014) studied the ICT's role in Ahmednagar (India) for supporting women's empowerment chiefly in the context of participants of self-help groups. Results clear that mostly women were not aware of the usage of information communication technology in India due to lack of resources, time and internet etc. Table 3 showed that 41.4% respondents were needed job of ICT, 32% respondents were neutral that their job need of ICT is not necessary, 15.6% respondents were strongly agreed

because it's must be compulsory for job, 8.3% respondents were no need of ICT so they disagreed and only 2.6% were strongly disagreed with this statement, 43% respondents were satisfied with their office culture, 29.7% were neutral from your office culture, 11.5% were strongly agreed and satisfied with their office culture, 10.9% were disagreed and didn't satisfied with office culture and 4.9% were not satisfied with the office culture and strongly disagreed, 37.5% respondents were have freedom to decision making in family, 25.5% were neutral in freedom of decision making, 20.1% were strongly agreed with freedom of decision making in family, 14.8% respondents were disagreed because they have not freedom of decision making in family and only 2.1% respondents were not any freedom of decision making in family, 33.3% respondents were free to employment or make empower without any other person permission, 25.5% were neutral, 17.7% respondents were totally free to take employment, 19.3% were disagreed because they not free in employment and 4.2% respondents were not able to take employment without consulting another person like husband, father etc., 35.9% respondents were agreed and free to visit market without another person, 22.4% respondents were neutral, 21.1% were disagreed because they not free to visit market without any person, 15.1% were strongly agreed to free visit in market without another person and only 5.5% women were have no freedom of visiting market without husband, or elder family member, 37.8% were free to send the daughter in schools, 27.9% were strongly agreed to sending daughters in schools and 21.1% were neutral, 9.4% and 3.9% were not freedom to send the daughter to schools respectively, 41.9% respondents agreed for family support to more empower, 28.1% were strongly agreed for striving more empowerment, 17.7% were neutral, 9.4% were disagreed and only 2.9% were strongly disagreed because families were not striving more empowerment, 42.2% women opinion was respected at their home. Hence, keeping in view the importance of ICT and branchless banking for involving women in economic and social activities and utilizing their human capital, a study conducted in Multan (South Punjab, Pakistan) the study analyzed the ultimate role of ICT services like mobile, internet and electronic media usage and mobile based branchless banking services on women economic and social empowerment (Asif, 2013). Hosseini and Manjunath (2016) analyzed the empowerment in women perspective in India through ICT. It is manifested that ICT by itself cannot solve all the issues concerned to gender discrimination and empowerment of women rather women needed more support and services for different sectors. Gender fairness and women's empowerment purposes to

increase women contribution in the modern economy and can enhance national capability and attain bigger economic freedom and growth.

Table 3 showed that 28.4% were more respected at home they take decisions freely, 18.2% were neutral, 7.8% respondents opinion was not respected at your home and only 3.4% were strongly disagreed with this statement, 47.9% respondents were agreed with this statement, 23.2% were neutral and stated that due to job, leisure time disturbed their daily routine, 14.3% were also strongly agreed, 12.2% respondents were disagreed because they say not disturb the routine and only 2.3% respondents were strongly disagreed they say not disturb their daily life, 42.4% respondents were agreed the use of internet make easier life day then earlier, 25.8% were strongly agreed, 20.1% were neutral, 9.4% were not agreed they say life is not easier with the use of internet and 2.3% respondents were strongly disagreed with the easier life due to use of internet, 52.6% respondents were agreed to proper facility of ICT in their areas, 18.8% were neutral in availability of ICT, 18% were strongly agreed, 7.6% were disagreed because they have less facility of ICT in their areas and 3.1% respondents were strongly disagreed for the availability of ICT in the form of internet, telecommunications, print media, electronic media etc. in their area. Khalafzai and Nirupama (2011) studied the building flexible communities through giving women's power being in touch with ICT's in Pakistan. The effect assessment of Community Technology Learning Centers (CTLC) was the main focus of their study. It has revealed that women, who contributed in the CTLC project, achieved jobs and started micro-business, were bolder, well informed, well aware about their rights and environments, and were taking interest in reaching about effective information sources. CTLC beneficiary women spread their physical, political places, and socioeconomic, understood their potential, and hence became more flexible. Braimok (2017) also examined the prospects and contests of ICTs for women farmers in Kenya using qualitative research method to understand how ICT can be utilized as a device for women's empowerment and decline gender gap. Findings showed women in Kenya use mobile and radio not TV or other ICTs due to high cost. ICTs not only empower and are adequate for important aids but also important for their self-empowerment by improving their abilities and strengths.

Regression Results

Dependent - Women Economic Empowerment (WEE) Results

Table 4: *Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error Estimate
1	0.806	0.649	0.617	0.50194

Table 4 represents R value and shows correlation coefficient between response (dependent) variable and explanatory (independent) variables. The value of 0.806 of correlation coefficient (R value) is positive and there is strong association between response variable (Women Economic Empowerment) and explanatory variables (area of residence, age of respondents, Education, occupation, income, marital status and number of children). The R square of the model is 64.9% which expresses the share that explanatory variables can elucidate the differences in the response variable. In this model, explanatory variables (area of residence, age of respondents, education, occupation, income, marital status and number of children) can explain, 61.7% variations in dependent variable (Women Economic Empowerment).

Nikulin (2016) considered the effect of ICTs on women economic authorization. The study used female labor force contribution as substitution for women's economic empowerment. Annual panel data of 60 less developed nations for the time span of 2000-2014 was used for analysis. The study found helpful and major role of ICTs use in determination of women's economic empowerment. The variables like richness rates, gross national income (GNI) per capita and earning dissimilarities were used as control variables.

Table 5: *ANOVA Results*

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	9.783	7	1.398	5.547	0.000*
Residual	94.732	376	.252		
Total	104.515	383			

Note: * significant at $p < 0.01$

Table 5 displays the findings of ANOVA, which was used to check the validity of model. As P-value 0.000 is less than the alpha value of 0.05 which means the F-statistic is highly important. The model is valid explainer of relationship which exists between response

and explanatory variables. Thus, the explanatory variables such as area of residence, age of respondents, education, occupation, income, marital status and number of children relationship were the significant explainer of variation in Women Economic Empowerment.

Table 6: *Regression Coefficients*

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	2.547	0.182		13.993	0.000*
Area of residence	0.004	0.054	0.004	0.075	0.940
Age of respondent	-0.086	0.029	-0.206	-2.950	0.003**
Education	0.054	0.024	0.115	2.254	0.025**
Occupation	0.119	0.036	0.174	3.314	0.001*
Income	0.026	0.018	0.084	1.424	0.155
Marital status	-0.053	0.036	-0.081	-1.465	0.144
Number of children	0.004	0.025	0.011	0.155	0.877

Note: * significant at $p < 0.01$ ** significant at $p < 0.05$

Table 6 shows the results of regression coefficients and its significance. Area of residence was insignificant variable and predictor of response variable; because its sigma value (0.940) is higher than the alpha value of 0.05. Age of respondent was significant variable and predictor of response variable; because it's P-value (.003) is less than the alpha value of 0.05. Education was also significant variable or predictor of response variable, because it's P-value (.025) less than the alpha value of 0.05. Occupation was highly significant or predictor of response variable, because its sigma value (.001) is less than the alpha value of 0.05. Income was insignificant variable or predictor of response variable, because it's P-value (.155) greater than the alpha value of 0.05. Marital status was insignificant variable or predictor of response variable, because it's P-value (.144) greater than the alpha value of 0.05. Number of children was insignificant variable or predictor of response variable, because it's P-value (.877) greater than the alpha value of 0.05. Bushra and

Wajiha (2015) had assessed the socio-monetary elements of empowerment of women in Pakistan. The data collected from sample of 200 female students of college in a survey method through structured questionnaire using convenience sampling technique. Three models Regression analysis, ordered logistic for empowerment of decision about oneself and ordered logistic for empowerment of decision about marriage were used. In model 1, education, economic opportunity, economic participation, unpaid work for females and bank account had substantial effect on empowerment of women and while all other variables had insignificant effect on empowerment of women. In model 2, education has also substantial impact on empowerment of women. In model 3, bank account, economic opportunity had significant effect in empowering women. The study found that men in Pakistan are dominating role and women are not empowered in making decision about her family even about herself.

Dependent – Women Social Empowerment (WSE)

Table 7: *Model Summary*

E	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.879	0.771	0.745	0.60957

Table 7 represents the R value of correlation coefficient between response variable and explanatory variables. The value of 0.879 of correlation coefficient (R value) is positive and exhibits a strong association between response variable (Women Social Empowerment) and explanatory variables (area of residence, age of respondents, education, occupation, income, marital status and number of children). The R square of the model was 77.1% which expressed the share that explanatory variables can elucidate the differences in the response variable. In this model the independent variables (area of residence, age of respondents, education, occupation, income, marital status and number of children) were explained the 74.5% variations in dependent variable (Women Social Empowerment).

Table 8: *ANOVA Results*

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.813	7	1.688	4.542	0.000*
Residual	139.712	376	0.372		

Total	151.525	383

Note: * significant at $p < 0.01$

Table 8 displays the findings of ANOVA test, which is used to check the validity of model. P-value 0.000 is less than the alpha value of 0.05 which means the F-statistic is highly important. This model is worthy explainer of relationship which exists between response and explanatory variables. Thus, the explanatory variables such as area of residence, age of respondents, education, occupation, income, marital status and number of children relationship were the significant explainer of variation in Women Social Empowerment.

Table 9: *Regression Coefficients*

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	3.264	.221		14.765	.000*
Area of residence	-.015	.066	-.011	-.220	.826
Age of respondent	-.101	.035	-.202	-2.864	.004*
Education	.034	.029	.061	1.174	.024**
Occupation	.117	.043	.143	2.699	.007*
Income	.051	.022	.134	2.261	.024**
Marital status	-.070	.044	-.088	-1.582	.115
Number of children	-.009	.030	-.022	-.309	.757

Note: * significant at $p < 0.01$ ** significant at $p < 0.05$

Table 9 shows the Area of residence was insignificant variable and predictor of response variable, because it's P-value (.826) is greater than the alpha value of 0.05. Age of respondent was significant variable and predictor of dependent variable; because it's P-value (.004) is less than the alpha value of 0.05. Education was significant variable or predictor of dependent variable, because it's P-value (.024) less than the alpha value of 0.05. Occupation was also a significant variable or predictor of dependent variable, because its sigma value (.007) is less than the alpha value of 0.05. Income is also a significant variable or predictor of

dependent variable, because it's P-value (.024) less than the alpha 0.05. Marital status was insignificant variable or predictor of dependent variable, because it's P-value (.115) greater than the alpha 0.05. Number of children was insignificant variable or predictor of dependent variable, because it's P-value (.757) greater than the alpha value of 0.05.

Batool (2018) carried out a study in Lahore Pakistan by taken the sample of 500 married women. The multiple regression analysis was used to check the importance of the factors affecting empowerment of women. They concluded that family system, paid job, and age has significant effect on the women's empowerment. In a similar study undertaken by Batool and Batool (2020) and by applying stepwise regression analysis find that property, personal income, gender awareness perception, self-esteem, legal awareness and internal locus of control were significant factors of women's empowerment.

Dependent - Mas Media Usage (MMU)

Table 10: *Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.857	.734	.691	.77536

Table 10 represents R this value shows correlation coefficient between response variable and explanatory variables. The value of correlation coefficient (R value) is 0.857 which is positive and demonstrates a strong association between response variable (Mass Media Usage) and explanatory variables (area of residence, age of respondents, education, occupation, income, marital status and number of children). The R square of the model is 73.4% which expresses the share that explanatory variables can elucidate the differences in the response variable. In this model the independent variables (area of residence, age of respondents, education, occupation, income, marital status and number of children) can explained the 69.1% variations in dependent variable (Mass Media Usage).

Table 11: *ANOVA Results*

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	33.453	7	4.779	7.952	.000*
Residual	226.045	37	.601		

		6
Total	233.497	38
		3

Note: * significant at $p < 0.01$

Table 11 displays the findings of ANOVA, which is used to check the validity of model. P-value 0.000 is less than the alpha value of 0.05 which means the F-statistic is highly substantial. This model is good explainer of relationship which exists between response and explanatory variables. Thus, the explanatory variables such as area of residence, age of respondents, education, occupation, income, marital status and number of children relationship were the significant explainers of variations in Mass Media Usage.

Table 12: *Regression Coefficients*

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	2.640	.281		9.389	.000*
Area of residence	.013	.084	.008	.154	.877
Age of respondent	.014	.045	.023	.314	.754
Education	.033	.037	.047	.884	.377
Occupation	.109	.055	.107	1.977	.049**
Income	-.047	.028	-.101	-1.653	.099
Marital status	-.112	.056	-.113	-1.987	.048**
Number of children	-.053	.038	-.102	-	.166

	1.3
	87

Note: * significant at $p < 0.01$ ** significant at $p < 0.05$

Table 12 shows that the area of residence was an insignificant variable. It was a predictor dependent variable because its P-value (.877) is greater than the alpha value of 0.05. Age of respondent was insignificant variable and predictor of dependent variable; because it's P-value (.754) is greater than the alpha 0.05. Education was insignificant variable or predictor of response variable; because it's P-value (.377) is greater than the alpha 0.05. Occupation was significant variable or predictor of response variable, because its P-value (.049) is less than the alpha value of 0.05. Income was insignificant variable or predictor of response variable; because it's P-value (.099) is less than the alpha value of 0.05. Marital status was significant variable or predictor of response variable, because it's P-value (.048) less than the alpha value of 0.05. Number of children was insignificant variable or predictor of response variable, because it's P-value (.166) greater than the alpha value of 0.05. Laizu et al., (2015) investigated the effect of ICT on empowerment of the women in Bangladesh and found that they have obliged approach to resources and open circles because of social limitations. This examination talked about women's empowerment to the extent awareness change in provincial towns in Bangladesh after ICT involvement has been exhibited by NGOs.

Conclusion and Suggestions

The results of the study conclude that the use of ICT has significantly affected the economic and social empowerment of women. However, female participation rates were definitely linked with the practice of ICTs measured as the share of persons using the cellular mobile and internet. Economic and social indicators of this study were positively correlated with women's empowerment. These findings suggest that socio-economic progress of the localities certainly related to the empowerment of women. The study finds some important relations of economic and social factors determining the women's empowerment however the result was positive in this area, this study argues that if women's role in ICT is vigorous in relation to learning, then women could become more strengthen. The study has observed that in developing countries a notable rise in the utilization of ICTs over the time analyzed. The advancement of ICTs in latest years has been very fast, while the female labour force contribution ratio in less developed nations endures constant. Therefore, it's problematic to

elucidate the improvement in empowerment of women over period of time as important variations can be seen only through the nations. However, education of ICT plays a vital role in increasing education, seeking knowledge, increasing labor force participation, control over resources, financial liberty, freedom in economic and household decision making abilities, freedom in mobility, stand up against the evils etc. Government also tries to provide proper facility of ICT in localities for the betterment of the next generation. Finally, results declare that there is a combine effort and participatory actions are needed to be commenced for women's empowerment. Therefore, further research on the impact of ICTs on empowerment of women is to be conducted particularly in less developed countries like Pakistan where the role of women is still lower while ICTs can particularly impart to empowerment of women in the work market. Forthcoming researches should give more focus to the subject of women's employments. Thus, present study proposed the following suggestions:

1. There should be a due cooperation of Husband's as it is an important determinant of women's empowerment.
2. There is a need of further studies to create a global toolkit for determining empowerment of women particularly at household stage.
3. In order to improve empowerment of women, one of the probable ways is likely to be feasible way to offering women more approach to the fiscal division.
4. With the coordination of GOs and NGOs various plans concerning empowerment of women can be introduced. By increasing their financial output and by supplying them secure and helpful setting.
5. There is a need of policies on both local and national level and the study emphasizes some key policy measures for the improvements of women's empowerment.
6. The adequate connection to media mainly social media and TV can influence self-esteem and decision making of the women.
7. The parents should also make aware about women education not only for the purpose of empowerment but for the source of living of their family also.
8. The provision of jobs or opportunities of work for women has also a positive effect on women's empowerment especially its self-esteem and control over resources dimension.
9. It is also expected that suggested instrument will help in improvement of women's empowerment and enhance the chances of adequate access to healthcare and higher

education facilities, decision making abilities, mobility, and control over resources in study area as well as in whole country.

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