

## Does the Use of Mobile Phones Predict Women's Economic Empowerment at the Household Level in Pakistan?

Syeda Azra Batool  
School of Economics  
Bahauddin Zakariya University, Multan

Economic empowerment strengthens a woman's status in the family and has positive impact on her social and psychological well-being. In order to improve the social status of women, it is crucial to explore and assess the determinants of women's economic empowerment. The present study empirically assessed the role of the use of mobile phones in the economic empowerment of women at the household level by controlling two rigorously researched demographic variables (viz., age and education). A sample of 302 non-working married women of age ranged between 21 and 49 year ( $M_{age} = 27.34$  year,  $S.D = 12.32$ ) was conveniently selected from the four randomly selected towns of city district Lahore (Pakistan). The control over economic resources was used as a women's economic empowerment variable. Hierarchical regression was run to measure the predictive strength of the use of mobile phones in the economic empowerment of women by controlling age and education. The results supported the hypothesis that the use of mobile phones was a positive and significant predictor of economic empowerment of women after controlling women's age and education. Implications of the study and policy matters were also discussed.

*Keywords:* Age, education, use of mobile phone, hierarchical regression, economic empowerment, media

Empowerment is an "expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them" (Kabeer, 2001, p.19). Whereas, women's empowerment embraces the enlargement of women's choices, and growth of capabilities to apply those choices (Human Development Report, 1995). The literature defines various dimensions of women's empowerment for example, economic, familial, socio-cultural, psychological, and legal (Malhotra, Schuler, & Boender, 2002). As far as economic empowerment concerns, it is a challenge to define it, as it entails different individual interpretations with respect to diverse contexts. Different individuals and organizations disagree on the meaning of economic empowerment. The organizations related to microfinance consider economic empowerment as to have access to income or contribute in activities related to income generation (Mak, Vassall, Kiss, Yvas, & Watts 2010). Golla, Malhotra, Nanda, and Mehra (2011) also believe that a woman's economic empowerment is ensured when she is able to succeed and develop financially and has the authority to make and act on decisions. A woman's economic empowerment has been defined as her control over income that contains economic contribution to the well-being of the family, and access to and control of socioeconomic means and belongings of productive and non-productive family assets. This would augment the earning capacity of a woman, her power of bargaining and her control over the resources, her share in economic decision making at household level, fulfilling the fundamental needs, and these all collectively could help improve her self-sufficiency thereby minimizing her economic dependence (Parveen & Leonhauser, 2005). A vast body of empirical studies confines economic empowerment to the control over resources that it is not just paid job, earned money or even possession that gives her the feelings of empowerment, but it is a woman's control over resources that gives her the sense of economic empowerment (Blumberg, 2005).

Golla (2011) recommends that in order to achieve economic empowerment, women should be equipped with the expertise and means to survive in the labor markets and should have unbiased and equivalent access to economic institutions. Moreover, to attain empowerment and agency to make full utilization of the advantage from economic activities, women must be enabled to make and act on economic decisions and should have control over the resources and profits.

Hence, economic empowerment has positive impact on women in the form of enlarged woman's earning potential, negotiation power, income controlling power, control over means, role in family, economic decision-making, meeting the fundamental necessities and overall augmenting self-sufficiency, thereby dropping women's financial subordination (Parveen & Leonhauser, 2005). On the other hand, an increase in economic control of women also improves the affluence and welfare of nations due to two reasons: 1) women having control over their own earnings have fewer children, and the rate of fertility is negatively related to growth of national income (Hess as cited in Blumberg, 2005), and 2) women also tend to send daughters as well as sons to schools than their men counterparts do, even though they earn less than their male counterparts (Blumberg, 2005). In turn, the payback of women's empowerment are immensely positive and cast its effect on the society as a whole (King & Mason as cited in Blumberg, 2005).

A considerable body of research highlights the chronological age as a significant and positive determinant of different dimensions of women's empowerment (e.g., Ahmed & Bould, 2004; Chaudhry & Nosheen, 2009; Khan & Maan, 2008; Parveen & Leonhauser, 2005; Rahman, Karmaker, & Mia, 2009; Wiklander & Thede, 2010). Women's economic empowerment in particular, has been reported to increase with their chronological age (Mason & Smith, 2003; Tareque, Haque, Mostofa, & Islam, 2007). As the women's decision making authority at home concerns, age has been appeared as a salient determinant (Acharya, Bell, Simkhada, van, & Regmi, 2010). The literature illustrates that women under the age of 20 years are less empowered in the economic sphere as compared with the women who belong to the age group of 40-44 year. The women of older age are usually in a position to better comprehend their husbands as they

have spent more time with them, and greater chances to communicate with their husbands on different matters may empower them in the economic decision making (Khan & Awan, 2011; Mostofa, Tareque, Haque, & Islam, 2008). The control of women over cash earnings (financial empowerment) has also been reported to increase with age (Nayak & Mahanta, 2009). According to Sheikh, Meraj, and Sadaqat (2015), the economic empowerment of women was strongly and positively determined by their age. Traditionally in Bangladesh, the daughter-in-law is supposed to be in charge of household responsibility, whereas mother-in-law is at the seat of making decisions regarding the family affairs, and both empowerment and autonomy in all three dimensions: household decision making, physical mobility and economic decision making, are higher in the older women at home (Haque, Islam, Tareque, & Mostofa, 2011).

Education as a demographic variable has also been rigorously studied in relation to women's empowerment in general and their economic empowerment in particular, and has been reported to play an important and well defined role in it. Women's empowerment is augmented with the rise in education level because education provides awareness, self-confidence, self-esteem and awareness that help them to decide about their lives and the lives of their associates. The positive role of education in empowering women has been supported by numerous researchers (e.g., Acharya et al., 2010; Ahmad & Sultan, 2004; Aslam, 2013; Heaton, Huntsman, & Flake, 2005; Khan & Awan, 2011; Khan & Maan, 2008; Kishor, 2000; Kishor & Gupta, 2004; Mishra & Nayak, 2010; Parveen & Leonhauser, 2005; Rahman et al., 2009; Rahman & Naoroze, 2007; Sridevi, 2005).

Mobile phones have brought about numerous socio-economic suggestions for the under-developed countries and as a result the potential developmental impact of mobile phones has caught ample attention as an essential subject on present-day research and policy agendas (Lee, 2009).

In addition to other factors, the economic development in developing countries is also said to be owed to the use of mobile technology. Robust economic growth is referred to as the major reason for the expansion of mobile phones industries in developing countries like India, China, Russia, and Pakistan. In order to make the use of mobile phones affordable to people, the mobile phone companies of such economies curtailed not only the prices but also the tariff rates of mobile handsets. The People consider it as an inevitable need despite an accessory. According to the records in 2009, at world level there were 6835 million mobiles cellular subscription having 96.2% per 100 people. In developing and developed countries, 1600 million and 5235 million mobile cellular subscriptions were found, respectively. In Asia, 3547 million users of mobile phones were found (Akhtar et al., 2014). On the basis of cross country analysis, the World Bank (2008) concluded that mobile phones' technology had expanded financial access to its users (Qamar, 2009).

As the case of Pakistan concerns, the increase in the penetration of mobile phones at a rapid pace has been noted (Qamar, 2009). The rank of Pakistan was 5th regarding the mobile phone subscribers in 2009 whereas, during 2012, its position was 8th having approximately 120.5 million mobile phone users. Almost half of the population of Pakistan (men & women) use mobile phones with one-third and two-thirds in rural areas and urban areas respectively. While the percentages of men and women who had their own mobile phones were found more than 86 and 40, respectively. The data suggested quite a higher access to mobile phones (in the household or within the stretched family) than the data for consistent usage. The

percentage of the use of mobile phones in the province of Punjab (Pakistan) remained 51.5: the highest among other three provinces of Pakistan (International Telecommunication Union as cited in Akhtar et al., 2014). The widespread use of mobile phones forms a ready market for the delivery of financial services over mobile phones.

Hence the use of mobile phone is increasing in the development process of countries around the globe. Basically, the use of mobile phones not only greatly diminishes the transaction costs related to markets, but also expands market boundaries (e.g., Aker & Mbiti, 2010). The GDP of low income countries increases by .5 to .6 percent due to 1 percent rise in mobile penetration (Waverman, Meschi, & Fuss, 2005). According to Aker and Mbiti (2010), a large number of studies concludes that use of mobile phones may escalate the market efficiency. Smith, Spence, and Rashid (2011) referred to Sen's capability approach (1999) that emphasizes on the expansion of freedom in areas like, social and governance networks that encourage an individual to look beyond economic measures of development. Smith et al. (2011) contends that mobile phones establish the foundation for one of the maximum expansion of human capabilities. According to Smith et al., mobile phones and their relevant infrastructure also make available the platform for a new level of connectedness for not only between different individuals but also between institutions and individuals. This connectedness, and the sharing of information that it involves, delivers for variety of functioning, that solely were almost impossible earlier, and if possible, it involved very high cost of transaction. Such functioning is categorized into three dimensions of networking : 1) strengthen social networks, especially in the poor and rural backgrounds, tremendously significant for well-being/existence/ safety purposes; 2) enables or fortify economic linkages (e.g., connecting people and commercial institutions, increasing boundaries of market and improving supply chains); and 3) enable or reinforcing governance set-ups (e.g., increased access services of government , political mobilization, election observing, timely systems of warning, management of crisis etc.). So the use of mobile phones has strongly been associated with macro-level economic advantages, and mobile phones have spread at an amazing rate throughout the developing countries in recent years.

Studying the impact of use of mobile phone in relevance to economic empowerment of women is an emerging field. As the role of mobile phone in the economic empowerment of women concerns, it has opened new vistas for economic empowerment of women. The access of women to mobile phones has considerably added income generation prospects of women and thus has given them a sense of economic and social empowerment (Aminuzzaman, Baldersheim, & Jamil, 2003). The World Development Report (World Bank, 2012) demonstrates that in case women are provided with information and communication technology (ICT) tools such as mobile phones, it can lead them to a better standard of life and broader economic growth (Malhotra, Kanesathasan, & Patel, 2012). Mobile phones also support women to overcome physical limitations, particularly in places where they are detached from their support linkages, and bound within their husband's social domains. Mobile phones are possibly a precious economic strength to the poor and significant instrument for firming up social bonds (Lee, 2009).

Lee (2009) analyzed the effect of household ownership of mobile phones on the status of women in India, and it was found that mobile phone ownership significantly reduced tolerance of women for wife whipping and issues related to control of husband, and augmented women's independence regarding mobility and economic freedom. Discussing about the fresh indicators of women's empowerment,

Schuler, Islam, and Rottach (2010) stated that the rapid increase of the use of mobile phones in underprivileged rural population had produced new prospects for women's empowerment. Mobile phones had also influenced dealings among friends and families, as well as stimulated the spreading of awareness on several issues for example, having access to a mobile phones, women were in a position to stay connected with husbands or children, who lived at different places for work or education. This could make them socially secure and as a result they felt empowered. Women who possessed, or whose families had mobile phones, used them for their personal calls, and some women were capable to generate minor incomes by charging other women for their use. Mobile phones had provided women with a private and safe method to uphold relations and contacts, and obtain support, if desired. Thus, the spread of such technology in rural areas had produced new opportunities for women's empowerment.

Using a qualitative research technique, Handapangoda and Kumara (2012) discovered the influence of mobile phones to empower the reliant house wives in pitiable households in Sri Lanka. The study exposed that mobile phones enlarged women's choices and controls. In another qualitative study in India by Malhotra, Kanesathasan, and Patel (2012), one of the partakers expressed her emotions regarding the vitality of mobile phone in her life that her mobile phone was her oxygen. It got her business and kept her alive throughout the week in action of her professional and personal life. Mobile phones have been found to enable women to make transactions, to keep in touch with several people for example, women transformed their recognition into better and bigger opportunities related to business via mobile phones.

Currently, the development owes to the use of mobile phones as this technology has helped individuals to widen their choices of life by playing a pivotal role in modifying their ever changing ways of life. The use of mobile phones is playing a tangible role in making women financially more independent and socially autonomous. Owing to the use of mobile phones, they participate in the decision making process within their families which was previously denied to them. The use of mobile phones can play a vital role in making women more rational through wider social circle and help them seeking social support through use of mobile phones. In this way their economic empowerment at the household level can be affected by the use of mobile phones.

### *Rationale of the Study*

There are many socio-cultural variables that play their role in empowering women in the economic domain. The present study assessed the use of mobile phone in predicting women's economic empowerment. The exclusive role of the use of mobile phones as a determinant of women's empowerment is missing in the empirical work, though the vibrant positive role of the use of mobile phones in qualitative studies has been reported. So the study addressed this research gap by controlling the role of demographic variable (viz., age and education), which are well defined and their role in the empowerment process of women has been rigorously supported. The following objectives were set for the present study:

1. To assess the association of women's economic empowerment with age, education, and use of mobile phones;
2. To assess the predictive strength of the use of mobile phones in women's economic empowerment in the household domain?
3. To suggest some policy about the use of mobile phones to empower women in economic domain at household level.

### *Research Design*

A correlational survey research design was used.

**Research Question.** What is the predictive strength of the use of mobile phones in the economic empowerment of women at household level by controlling the demographic variables (viz., age and education)?

### *Hypotheses*

H<sub>1</sub>: There is significant relationship among age, education, use of mobile phones, and women's economic empowerment.

H<sub>2</sub>: The use of mobile phones will significantly predict the women's economic empowerment by controlling age and education

### *Method*

#### *Participants*

A convenient sample of 302 married women respondents of reproductive age ranged 21 and 49 year ( $M_{age} = 27.34$  year,  $S.D = 12.32$ ) from mixed socio-economic contexts and with different levels of education was obtained from Lahore city district (which included the main city and its suburbs). The sample was taken from both nuclear and joint family systems. The participants' education was categorized as school, college, and university levels. Non-working women were selected conveniently from four randomly selected towns of Lahore city: Cantonment, Gulberg, Data Samanabad. And Ganj Bukhsh, Divorced, widows, married more than once, childless women and women whose husbands were not living with them for any reason were not included in the survey due to the reason that measure of women's economic empowerment contained questions related to economic decisions in married life including children. We selected sample from Lahore, as Lahore is the capital city of the province Punjab (Pakistan).

#### *Measures*

**Socio-demographic data.** The socio-demographic data sheet in this study measured the age and education of the respondents. Age was the chronological age in years that was reported by the respondents. Education was the years of education and was categorized as school education=1, college education=2 and university education=3.

**Use of mobile phones.** The use of mobile phones was measured via questions that were based on the literature (e.g., Lee, 2009; Malhotra, Kanesathasan, & Patel, 2012; Schuler, Islam, & Rottach, 2010). The respondents were asked five questions regarding the impact of the use of mobile phones on their lives: 1) The use of mobile phone has created a good social network for me, 2) Mobile phone has enhanced my social support, 3) When I am alone, mobile phone is a good companion, 4) Mobile phone has increased my vocabulary, and knowledge/information, 5) Mobile phone is a major source of entertainment. A 4-point Likert scale was used (1= *Not at all* to 4= *To great extent*). The sum of answers of a single respondent to all five questions formulated the value of the measure 'use of mobile phones'. The score on this measure ranged from 4 to 20. The smaller value specified lower impact of 'use of mobile phone' and vice versa. The Cronbach's alpha for this measure was .77.

Women's Economic Empowerment Index (WEEI; Batool, 2017). The WEEI was used to measure women's economic empowerment at household level: (*i.e.*, control over economic resources). The WEEI contained 5- items (e.g., Control of women over the purchasing of daily expenses on consumable and durables commodities, assets and property, own and children's useables: clothes and accessories etc.). The responses were noted on a 5-point Likert type scale (1= *never* to 5= *always*). The sum of all the answers of the all the items for a single respondent constituted the score on the measure WEEI. The score on the measure ranged between 5 and 25. The Cronbach's alpha for the measure was .79. All the measures were used in Urdu: the national language

### Procedure

The respondents were contacted at their homes and at work places according to their availability, after attaining their verbal consent. The questionnaires were distributed and directions to complete the questionnaires were given. Most of the completed questionnaires were taken back from the respondents on the same day and some were taken afterwards on the dates and time given by the respondents. Initially, 400 women were contacted, but 45 declined to contribute in the study and 53 questionnaires were found partially filled. So final sample comprised 302 women. The women were allowed to take their time in completing the questionnaires. The confidentiality of the data was ensured and the participants were informed about their right to withdraw at any stage of data collection as recommended by the APA ethical guideline.

### Analyses and Results

Pearson's correlation was calculated to see the significant relationships among the study variables

Table 1  
*Inter-correlation of the Study Variables Phone (N =302)*

Variables	1	2	3	4
1.WEEI	-	.10**	.21**	.25**
2.AGE	-	-	-.15**	-.11**
3.EDU	-	-	-	.14**
4.UOM	-	-	-	-

Note. \*\*p < .01 & \*p < .05; WEEI= Women's economic empowerment index, AGE= chronological age, EDU=Education, and UOM= Use of mobile phones.

Table 2  
*Hierarchical Regression to Predict the Women's Economic Empowerment from Age, Education, and Use of Mobile Phones (N =302)*

Models	Predictors	B	S.E	$\beta$	t-values	Sig	R <sup>2</sup>	F
1.	Age	.068	.024	.09*	2.869	.004	.03	16.421**
	Education	.129	.024	.17**	5.335	.000		
2.	Age	.085	.023	.11**	3.662	.000	.09	32.170**
	Education	.104	.024	.14**	4.393	.000		
	Use of Mobile phone	.147	.019	.24**	7.853	.000		

Note: \*p<.05, \*\* p<.01.

step (Model 2), we added the use of mobile phones: the variables in which we were interested.

The results in Table 2 show that regression coefficients of age and education were found as:  $\beta = .09$ ,  $p < .01$ ,  $\beta = .17$ ,  $p < .01$ . respectively, when age and education were entered as a predictor of women's economic empowerment in model 1, but when the use of mobile

Table 1 shows the inter-correlation of the study variable. The table demonstrates that all the independent variables positively and significantly correlate with the economic empowerment.

Statistics were obtained for both WEEI and UOM. The mean score for WEEI was 14.43 (SD=5.27) and the mean score for UOM was 11.91(SD= 4.20).

### Hierarchical Regression

In order to assess the role of demographic variables and the 'use of mobile phones on the level of women's economic empowerment, a hierarchical regression was run. Hierarchical regression shows whether a statistically significant amount of variance is explained by the variables of interest (Independent Variables) after controlling all other variables. Basically this is not a statistical method, rather this is a framework used to compare the models. Using this framework, an investigator may build several regression models by adding more variables to a preceding model at each phase; later models each time include reduced models in the preceding steps. In several cases, the interest of an investigator is to conclude whether the freshly added variables appear as significant enhancement in R<sup>2</sup> (the percentage of explained variance in the dependent variable by the model) ("University of Virginia Library, n.d.).

In the present study we were interested in the relationship of women's economic empowerment and use of mobile phones. In this line of research, many individual, familial, and socio-cultural variables have been recognized as predictors in addition to demographic characteristics. However, in the present study we hypothesized that the use of mobile phone could be an important predictor of women's economic empowerment when age and education were controlled. We used two hierarchical regression models:

Model1:

$$WEEI = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \mu_1 \dots \dots \dots (1)$$

Model 2:  $WEEI = \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Education} + \beta_3 \text{Use of Mobile}$

$\text{Phones} + \mu_2 \dots \dots \dots (2)$

Where WEEI = Women's Economic Empowerment Index.

$\beta_0$ = Intercept

$\beta_1$ , and  $\beta_2$  are slope coefficients

$\mu_1$  and  $\mu_2$  are random terms.

Table 2 illustrates two models: The first model (Model 1) includes demographic information like, age, and education. In the following

phone was entered in model 2, the beta coefficient of age increased and education decreased but remained significant:  $\beta = .11$ ,  $p < .01$ ; and  $\beta = .14$ ,  $p < .01$ , respectively. Table 2 indicates that variables age and education appeared to be significant predictors of women's economic empowerment in Model 1 and both contributed 3 percent in R<sup>2</sup> when use of mobile phones was entered in model 2, the value of R<sup>2</sup> = .09, increased from 3% to 9% which means additional 6 % of variance is

accounted for by use of mobile phones. The use of mobile phones appeared as a positive (.24) and significant ( $p < 0.01$ ) determinant of women's economic empowerment as indicated in Table 2. This declares that one unit change in the use of mobile phone will bring .24 units change in the economic empowerment of women

### Discussion

The study was designed to assess the predictive strength of the 'use of mobile phones' in women's economic empowerment at the household level after controlling for the demographic variables: age and education. The results supported the hypothesized model, as the use of mobile phones appeared as a significant predictor of women's economic empowerment when age and education were controlled. Age and education were significant predictors of women's economic empowerment in model 1 and remained significant in model 2 when use of mobile phones was entered, although the values of beta coefficients for age increased and education decreased in model 2 (see Table 2).

The variable 'age' as a positive and significant predictor of women's economic empowerment is in line with the study by Mason and Smith (2003) that concluded that women under the age of 20 years were least empowered in comparison with the women of age ranged between 40 and 44 year in economic decision making, household decision making, and physical mobility. Age as a salient predictor of women's economic empowerment also coincides with the work of Khan and Awan (2011) that observed more empowerment in economic decision making context within the household with the increase in a woman's age, and Acharya et al. (2010) that own age of women and their family structure were the dominant determinants of women's decision making authority in developing countries. Similarly, our result matches with Rasmussen (1997) that older Tuareg (nomadic pastoralist) women in Niger, West Africa can share more in certain occupations like herbal medicine and midwifery as compared with younger women and attain more economic autonomy. The question of why older women get more empowerment may be answered from a study in India by Lamb (2000) that mothers-in-law in rural India keep much control over daughters-in-law and sons because women are respected due to their status as aged mothers, mother-in-law and grandmothers. The women's control over cash incomes (financial empowerment) has also been proved to increase with age in India (Nayak & Mahanta, 2009). As another neighboring country of Pakistan: Bangladesh concerns, daughter-in-law is thought to be accountable for household work whereas, mother-in-law is at the seat of making decisions regarding the family affairs (Haque et al., 2011). In the case of Pakistan, a study by Isran and Isran (2012) supports our result that older women have greater mobility, have more access to household resources, and have greater decision-making power within family as compared to younger women. Empowerment of women might differ over the different phases of life as the rights and duties of women change with different stages of life (Jejeebhoy, 2000). Higher level of empowerment with increasing age might be due to the fact that in older age, rich experiences and understanding support women in taking wiser decisions in economic matters at household level (Sheikh et al., 2015), and at a place of work, women might be more empowered as they get higher position due to being more experienced. Moreover, an older woman is in a position to better understand her husband and closer relation with him as she has spent more time with him hence might get greater chances to communicate with her husband effectively on different matters (Mostofa et al.,

2008). While discussing the case of Pakistan, Harry (2011) asserts that in Pakistani society where joint family system prevails usually, the mother-in-law and father-in-law are the head of the family and are in charge of household matters. In such a family system, earnings are controlled by a mother-in-law being an oldest woman at home, and she works as a financial officer of the family expenditures. The needs of daughter-in-law like, clothing etc. are usually met by the mother-in-law, hence younger women become economically dependent and this creates the feelings of powerlessness in daughters-in-law. Our results can be compared with the many other studies where chronological age has been reported as a significant and positive predictor of women's empowerment in different spheres (e.g., Ahmed & Bould, 2004; Khan & Maan, 2008; Parveen & Leonhauser, 2005; Rahman et al., 2009; Tareque et al., 2007; Wicklander & Thede, 2010).

The positive role of education in the present study in empowering women is in line with various researches (e.g., Acharya et al., 2010; Ahmad & Sultan, 2004; Aslam, 2013; Heaton, Huntsman & Flake, 2005; Khan & Awan, 2011; Khan & Maan, 2008; Mishra & Nayak, 2010; Parveen & Leonhauser, 2005; Rahman et al., 2009; Rahman & Naoroze, 2007). All the researches cited above are in agreement that education plays a significant and well defined role in women's empowerment because education provides wakefulness, self-assurance, self-esteem and mindfulness that support them to take decisions about their lives. Educated women in a conservative male dominated society such as Pakistan find more opportunities to get good and well-paid jobs and it helps them to maintain their financial autonomy.

The use of mobile phones appeared as a significant positive predictor of women's empowerment in the economic decision making at household level even after controlling age and education, which demonstrates that increased use of mobile phones by women increases their economic empowerment at household level. Results are consistent with Aminuzzaman et al. (2003) that the access of women to mobile phones significantly augments income earning prospects of women and therefore, get them feel to be empowered in economic and social domains. The results are also in line with (e.g., Handapangoda & Kumara, 2012; Lee, 2009; Schuler et al., 2010) that reveal that mobile phones rise the choices and controls of dependent house wives in the less developed economies like, Sri Lanka, India, and Bangladesh, and rapid boost in the use of mobile phones in the underprivileged rural inhabitants has generated fresh opportunities for women's empowerment. Mobile phones have also helped to deal with family and friends. Women with access to a mobile phone are able to stay in touch with husbands or children who live in other places for work or education. The women who own and use mobile phones are able to generate small incomes by charging other women for their use. The popularity of such a technology in rural locality has generated new opportunities for women's empowerment. Mobile phones have provided women with a private and safe course to uphold interactions and contacts, and obtain support if necessary (Schuler et al., 2010).

The access of women to mobile phones substantially add income generation prospects of women, support women to overcome physical boundaries, particularly, in places where they are isolated from their support linkages and restricted within their husband's social circle, and thus creates new opportunities and help them attain economic empowerment (Aminuzzaman et al., 2003; Lee, 2009; Schuler et al., 2010). Mobile phones escalate women's choices and makes them more influential that could improve their empowerment (Handapangoda & Kumara, 2012). Mobile phones have significantly

curtailed tolerance of women for wife-beating and issue relates related to husband's control, and increased women's self-sufficiency in mobility and economic autonomy (Lee, 2009). Our results are also consistent with qualitative studies (e.g., Malhotra, Kanesathasan, & Patel, 2012), in which women reported mobile phone as oxygen for their lives, tool for running business and a source of recognition in the wider business community.

Mobile phones have numerous socioeconomic implications for the under-developed economies and consequently, the potential developmental impact of the use of mobile phones has won much attention as a key issue in the present-day research and policy agendas. The results recommend that the government of Pakistan and other developing countries should create opportunities for women to generate incomes by taking mobile phones as a policy tool for empowering women. Because women could be more empowered by holding mobile phones in hands and keeping themselves aware of the updates about job vacancies through their connectivity with relatives, friends and acquaintances etc.

### Limitations

This is a preliminary study on the predictive strength of the use of mobile phones in women's economic empowerment by controlling two well researched demographic variables, other socio-cultural and familial factors were not controlled, so in future studies, a more comprehensive model needs to be tested. Data were collected from one city district of Punjab, so we should be careful in generalizing the results, and in future studies other cities and provinces should also be targeted. Only urban women were approached in the study, so in the upcoming studies women from rural areas should also be included. Qualitative studies are suggested to explore the viewpoints of women on the dynamics which help them to be empowered within economic domain.

### Conclusion and Recommendations

Although age, education, and the use of mobile phone significantly predict women's economic empowerment, the variance accounted for by the use of mobile phone is higher than the combined variance of age and education. The use of mobile phones appears to act as a striking tool that may give economic empowerment to women at the household level in Pakistan in many ways. The use of mobile phones has brought socioeconomic implications for a developing country like Pakistan, where women need to empower themselves to add their share to the national economy. It is hereby suggested that the government of Pakistan should introduce such mobile applications that may be used by women to earn money. The government should curtail taxes on mobile phone sets and mobile phone calls so that more women could be able to buy and use mobile phone sets at reasonable rates and overcome their physical limitations and they may search for new jobs, and enhance their bargaining power at the household level etc. by being well informed and this may help them to attain empowerment in economic sphere within their families.

As age and education were also found to help women to control the financial matters and take household economic decisions more efficiently. Early or under age marriages should be strictly banned and monitored, so that a woman may attain more economic autonomy and empower herself immediately after been wed. Tangible steps should be taken by governmental, non-governmental and women's organizations to target and motivate the process of women's empowerment by educating women. The policy of the government

should be directed not only to compulsory education for girl child in general, and higher education for women in particular. In this era of globalization if we want to share the international trade, the dynamic role of women, is indispensable otherwise development would remain dream without empowering women.

### References

- Acharya, D. R., Bell, J. S., Simkhada, P., van Teijlingen, E. R., & Regmi, P. R. (2010). Women's autonomy in household decision-making: A demographic study in Nepal. *Reproductive Health*, 7(15), 1-12. doi: 10.1186/1742-4755-7-15
- Ahmad, F., & Sultan, M. (2004). Women's empowerment and mobility in Pakistan: Result from a National Survey. Paper presented at *Fifth Annual Research Conference* on 14-16 December 2004, Karachi, Pakistan.
- Ahmed, S.S., & Bould, S. (2004). One able daughter is worth 10 illiterate sons: Reframing the patriarchal family. *Journal of Marriage and Family*, 66(5), 1332-1341.
- Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *Journal of Economic Perspectives*, 24(3), 207-232.
- Akhtar, N., Saleem, S., Qamar, S., Iqbal, M., Shaheen, A., & Mahmood, T. (2014). Mobile phone feature preferences and consumption pattern of students in university of Sargodha. *International Journal of Asian Social Science*, 4(3), 383-391.
- Aminuzzaman, S., Baldersheim, H., & Jamil, I. (2003). Talking back! Empowerment and mobile phones in rural Bangladesh: a study of the village phone scheme of Grameen Bank. *Contemporary South Asia*, 12(3), 327-348.
- Aslam, M. (2013). *Empowering women: education and the pathways of change*. Background paper for EFA Global Monitoring Report, 4.
- Batool, S. A. (2017). Determinants of women's empowerment in Punjab, Pakistan (Unpublished Ph.D. dissertation). University of the Punjab, Lahore.
- Blumberg, R. L. (2005). *Women's economic empowerment as the magic potion of development?* Paper presented at 100th Annual meeting of the American Sociological Association. Philadelphia. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/cld?doi=10.1.1.499.7257&rep=rep1&type=pdf>
- Chaudhry, I. S., & Nosheen, F. (2009). The determinants of women empowerment in southern Punjab (Pakistan): An empirical analysis. *European Journal of Social Sciences*, 10(2), 216-229.
- Golla, A. M., Malhotra, A., Nanda, P., & Mehra, R. (2011). *Understanding and measuring women's economic empowerment: Definition, framework, indicators*. Washington DC: International Centre for Research on Women. Retrieved from <http://www.icrw.org/files/publications/Understanding-measuring-womens-economicempowerment.pdf>
- Greene, W. (2007). Functional form and heterogeneity in models for count data. *Foundations and Trends in Econometrics*, 1(2), 113-218.
- Greene, W. H., & Hensher, D. A. (2010). *Modeling ordered choices: A primer*. New York, NY: Cambridge University Press.
- Handapangoda, W. S., & Kumara, A. S. (2012). *From silence to voice: Examining the empowerment potential of mobile phones to women in Sri Lanka The case of dependent housewives*. Retrieved from: <https://scholar.google.com.pk/scolar?q=Handa+pangoda%2C+W.+S.%2C+%26+Sirira+Kumara%2C+A.+%282012%29.+From+silence+to+voice%3A+Examining+the+empower>

- ment+potential+of+mobile+phones+to+women+in+Sri+Lanka+The+case+of+dependent+housewives.&btnG=&hl=en&as\_sdt=0%2C5
- Haque, M., Islam, T. M., Tareque, M., & Mostofa, M. (2011). Women empowerment or autonomy: A comparative view in Bangladesh context. *Bangladesh e-Journal of Sociology*, 8(2), 17-30.
- Harry, N. (2011). *The Pakistani family system*. Retrieved from [http://www.puranpediapak.com/yahoo\\_site\\_admin/assets/docs/Pakistani\\_Family\\_system.51204842.pdf](http://www.puranpediapak.com/yahoo_site_admin/assets/docs/Pakistani_Family_system.51204842.pdf)
- Heaton, T. B., Huntsman, T. J., & Flake, D. F. (2005). The effects of status on women's autonomy in Bolivia, Peru, and Nicaragua. *Population Research and Policy Review*, 24(3), 283-300.
- Human Development Report. (1995). Retrieved from [http://hdr.undp.org/sites/default/files/reports/256/hdr\\_1995\\_en\\_complete\\_nostats.pdf](http://hdr.undp.org/sites/default/files/reports/256/hdr_1995_en_complete_nostats.pdf)
- Isran, S., & Isran, M. A. (2012). Patriarchy and women in Pakistan: A critical analysis. *Interdisciplinary Journal of Contemporary Research in Business*, 4(6), 835-859.
- Jejeebhoy, S. J. (2000). Women's autonomy in rural India: Its dimensions, determinants, and the influence of context. In H. B. Presser & G. Sen (eds.), *Women's empowerment and demographic processes: Moving beyond Cairo* (pp.15-36). New York, NY Oxford University Press.
- Kabeer, N. (2001). *Discussing women's empowerment: Theory and practice*. Swedish International Development Cooperation Agency (Sida). Retrieved from <https://www.sida.se/contentassets/5e45d330e16743179cefc93de34e71ac/15611.pdf>
- Khan, S. U., & Awan, R. (2011). *Contextual assessment of women empowerment and its determinants: Evidence from Pakistan*. Bond University-Australia. MPRA, (30820) Retrieved from: <https://core.ac.uk/download/files/432/12028224.pdf>
- Khan, M.T., & Maan, A. A. (2008). Socio-cultural milieu of women's empowerment in district Faisalabad, Pakistan. *Journal of Agricultural Science*, 45(3), 78-90.
- Kishor, S. (2000). Empowerment of women in Egypt & link to the survival & health of their infants. In P. Kane, H. B. Presser & G. Sen (Eds.), *women's empowerment & demographic process: Moving beyond Cairo* (pp.119-156). New York, NY: Oxford University Press.
- Kishor, S., & Gupta, K. (2009). *Gender equality and women's empowerment in India*. National Family Health Survey (NFHS-3) India 2005-06. Retrieved from <https://dhsprogram.com/pubs/pdf/od57/od57.pdf>
- Lamb, S. (2000). *White saris and sweet mangoes: Aging, gender, and body in North India*. London, UK: University of California Press.
- Lee, D. (2009). *The impact of mobile phones on the status of women in India*. Mobile Active. Retrieved from [https://scholar.google.se/scholar?q=Lee+%26+Jayachandran+%282009%29+mobile+phone&btnG=&hl=sv&as\\_sdt=0%2C5](https://scholar.google.se/scholar?q=Lee+%26+Jayachandran+%282009%29+mobile+phone&btnG=&hl=sv&as_sdt=0%2C5)
- Mak, J., Vassall, A., Kiss, L., & Watts, C. (2010). *Exploring the costs and outcomes of Camfed's Seed Money Scheme (SMS) in Zimbabwe and Tanzania*. Technical Report. London School of Hygiene and Tropical Medicine, London, UK. Retrieved from <http://researchonline.lshtm.ac.uk/id/eprint/2551464>
- Malhotra, A. S., Schuler, S.R., & Boender C. (2002). *Measuring women's empowerment as a variable in international development*. Background Working Paper for the World Bank Workshop on Poverty and Gender: New Perspectives, 802. Washington, DC: World Bank.
- Malhotra, A. S., Kanesathasan, A., & Patel, P. (2012). *Connectivity: How mobile phones computers and the Internet can catalyze women's entrepreneurship. India: a case study*. Retrieved from <http://www.icrw.org/wp-content/uploads/2016/10/Connectivity-how-mobile-phones-computers-and-the-internet-can-catalyze-womens-entrepreneurship.pdf>
- Mason, K. O., & Smith, H. L. (2003). *Women's empowerment and social context: Results from five Asian countries*. Gender and Development Group, World Bank, Washington, DC.
- Mishra, S. K., & Nayak, P. (2010). Facets and factors of human development in Tripura. In P. Nayak (Ed.), *Growth and human development in North East India* (pp. 281-296). New Delhi: Oxford University Press.
- Mostofa, G., Tareque, I., Haque, M., & Islam, T. M. (2008). Mathematical modeling of women empowerment in Bangladesh. *Research Journal of Applied Sciences*, 3(6), 416-420.
- Nayak, P., & Mahanta, B. (2009). Women empowerment in India. *A Journal of North-Eastern Hill University*, 1-32. Retrieved from: URL:<https://mpira.uni-muenchen.de/id/eprint/24740>
- Parveen, S., & Leonhäuser, I. U. (2005). *Empowerment of rural women in Bangladesh: A household level analysis* (Vol. 72). Berlin: Margraf.
- Qamar, S. (2009, May 27). *Mobile phone technology fast growing in Pakistan: World Bank*. The Nation. Retrieved from <http://nation.com.pk/business/27-May-2009/Mobile-phone-technology-fast-growing-in-Pakistan-WB>
- Rahman, M., Karmaker, U. K., & Mia, R.A. (2009). Determinants of women empowerment at domestic & non-domestic issues: Evidence from Chapai Nawabganj District in Bangladesh. *Dhulagiri Journal of Sociology & Anthropology*, 3, 143-162.
- Rahman, M.H., & K. Naoroze. (2007) Women empowerment through participation in an aquaculture experience of a large scale technology demonstration project in Bangladesh. *Journal of Social Sciences*, 3(4), 164-171.
- Rasmussen, S. J. (1997). *The poetics and politics of Tuareg aging: Life course and personal destiny in Niger*. DeKalb: Northern Illinois University Press.
- Schuler, S. R., Islam, F., & Rottach, E. (2010). Women's empowerment revisited: A case study from Bangladesh. *Development in Practice*, 20(7), 840-854.
- Sheikh, A.Q., Meraj, M., & Sadaqat, B.M. (2015). Gender equality and socio-economic development through women's empowerment in Pakistan. *Ritsumeikan Journal of Asia Pacific Studies*, 34, 124-140.
- Smith, M. L., Spence, R., & Rashid, A. T. (2011). Mobile phones and expanding human capabilities. *Information Technologies & International Development*, 7(3), 77-88.
- Sridevi, T. O. (2005). *Empowerment of women-A systematic analysis*. India Development Foundation Discussion Paper, June, 1-18.
- Tareque M. I., Haque, M.M., Mostofa, M. G., & Islam, T. M. (2007). Age, age at marriage, age difference between spouses & women empowerment: Bangladesh context. *Middle East Journal of Age & Ageing*, 4 (6), 8-14.
- University of Virginia Library (n.d.). *Hierarchical Linear Regression*. Retrieved from <http://data.library.virginia.edu/hierarchical-linear-regression/>
- Waverman, L., Meschi, M., & Fuss, M. (2005). The impact of telecoms on economic growth in developing countries. *The Vodafone Policy Paper Series*, 2(03), 10-24. Retrieved from

[http://www.vodafone.com/content/dam/vodafone/about/public\\_policy/policy\\_papers/public\\_policy\\_series\\_2.pdf](http://www.vodafone.com/content/dam/vodafone/about/public_policy/policy_papers/public_policy_series_2.pdf)

Wiklander, J. & Thede, S. (2010). *Determinants of women's empowerment in rural India: An intra-household study* (Master's thesis). Lunds Universitet, Lund Sweden: Department of Economics. Retrieved from <http://lup.lub.lu.se/luur/download?func=downloadFile&recordId=16666&fileId=1666649>

World Bank (2011). *World development report 2012: Gender equality and development*. Washington, DC World Bank.

Received: 8<sup>th</sup> April 2018

Revisions Received: 5<sup>th</sup> June 2018