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Devendra Potnis

University of Tennessee, Knoxville, dpotnis@utk.edu

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Inequalities creating economic barriers to owning mobile phones in India: Factors responsible for the gender digital divide

Introduction

The mobile phone is the most widely used information and communication technology (ICT) in the developing world since among all ICTs one needs to meet the least number of socioeconomic pre-requisites to own a mobile phone (Fortunati, 2002). In India, as of December 2013, there were more than 900 million mobile phone subscribers with approximately 7 million new mobile phone users joining the ranks every month (Telecom Regulatory Authority of India, 2014). However, in the male-dominated Indian society with 940 females per 1,000 males, only 30% of mobile phone owners were female (Vodafone India Group, 2011), which indicates the *gender digital divide* in the country.

The gender digital divide has a number of adverse effects on the social, economic and human development of women in the developing world (Barzilai-Nahon,

2006; Qureshi, 2008). For instance, the *ownership* of a mobile phone plays a key role in empowering women in developing countries (Madianou and Miller, 2011; Potnis, 2011). Women, who do not own a mobile phone and have access to mobile phones via male members of their families, cannot use mobile phones at their will (Potnis, 2015). Accessing someone else's mobile phone does not provide the same level of social respect or build the same level of self-confidence among women as owning the ICT (Mijumbi, 2002). Hence, it becomes necessary to study and address the gender digital divide in the form of lack of ownership of the most widely adopted ICT in the world.

The goal of this study is to investigate the factors responsible for the inability of 245 female slum-dwellers earning around \$2 a day to own a mobile phone in India. Although respondents hold economic factors responsible for their inability to own a mobile phone, in-depth analysis of their qualitative responses shows that the economic factors are, in fact, the result of a combination of economic and non-economic inequalities experienced by the respondents in their lives. Study findings illustrate the way in which these pre-existing inequalities are responsible for the gender digital divide in India.

Key contribution

Past research on the gender digital divide shows that inequalities in women's lives create barriers and reinforce the gender digital divide (Warschauer, 2003). For instance, socio-cultural and economic inequalities create socio-cultural and economic barriers respectively. However, this study finds that economic and five non-economic inequalities in the lives of respondents create eight economic barriers, which preclude

them from owning some of the least expensive mobile phones worth \$15 or so on installments of \$1 a month.

The unique contribution of this study is that it illustrates the specific effect of socio-cultural, economic, demographic, psychological, communication related and health related inequalities on women's financial ability to own a mobile phone. In particular, respondents experience the following eight economic barriers: (a) income-related barriers: fluctuating low personal income and low household income; (b) savings-related barriers: low personal savings, lack of financial support from husbands, majority of financial dependents in family, unexpected and unforeseen family expenses, and inherited debt; and (c) the cost of owning and maintaining a mobile phone.

This paper is organized as follows. The second section synthesizes the barriers to owning ICTs identified by the past literature. The third section presents details related to data collection and analysis. The fourth section contextualizes and discusses study findings. The fifth section concludes with implications of the study's findings.

Barriers to Owning ICTs

The conventional understanding about one's inability to own ICTs, also known as the digital divide, is that it is a reflection and continuation of inequalities in the society (Warschauer, 2003). Table 1 presents a snapshot of different types of micro- (i.e., individual level), meso- (i.e., related to one's family or group-level) and macro-level (i.e. regional or national) inequalities and respective barriers reinforcing the digital divide.

INSERT TABLE 1 HERE

Table 1. Barriers Reinforcing the Digital Divide

Barriers of the gender digital divide in developing nations like India

The existing research on the gender digital divide frequently finds that economic barriers play the most significant role in preventing women from owning ICTs in developing nations. For instance, after surveying women in 12 Latin American and 13 African countries between 2005 and 2008, the most extensive empirical study on the gender digital divide concluded that women's unfavorable conditions with respect to their employment and income are primarily responsible for their diminished access to and use of ICTs in developing nations (Hilbert, 2011). The cost of maintaining ICTs (Mijumbi, 2002), women's limited economic progress (Hafkin and Taggart, 2001) and their lessened or lack of access to financial resources required for accessing ICTs (Huyer and Sikoska, 2003; Zainudeen et al., 2010) are some of the most frequently identified economic barriers creating and maintaining the gender digital divide in developing nations.

It is important to note that unlike the current study past studies rarely show specific effects of a wide range of economic inequalities on women's financial ability to own a mobile phone, which is one of the unique contributions of this study.

Non-economic inequalities. Mijumbi (2002) finds that gender inequalities, inadequate gender-sensitive policies supporting women's ICT usage, remote geographic locations with less dependable transportation infrastructure, poor ICT infrastructure in rural areas, illiteracy and lack of self-efficacy to operate ICTs create respective barriers for African women to own and use ICTs. Khan and Ghadially (2009) observe sociocultural and religious beliefs to be the strongest predictors of Muslim women's use of ICTs in India.

Patil et al. (2009) conclude that oppressive gender relations and men's hegemony inhibit women's access to and ownership of ICTs in India.

Unlike the current study, past studies rarely illustrate the role of a wide range of non-economic inequalities in generating economic barriers for women to own a mobile phone, which is another unique contribution of this study.

Methods

This study was conducted at multiple research sites, i.e. slums, located in and around Dombivli and Shirwal, an urban and a rural area in Maharashtra, one of the western states in India. Due to traditional cultural norms, beliefs, and practices, it was unlikely that female slum-dwellers would share their stories and struggles to own a mobile phone with an unknown male researcher (Potnis, 2014). Hence, the researcher recruited two poor, middle-aged, female social workers with college degrees as his local assistants. Due to their social work with female slum-dwellers, they had easy access to the communities of women who could potentially participate in this study. Snowball sampling was adopted to locate female slum-dwellers who did not own mobile phones but had access to the mobile phones owned by their male family members. The local assistants would check with family members, especially children of the women or neighbors, to make sure that the women selected for the study had not owned a mobile phone ever in their life. With the help of the local assistants, the researcher distributed semi-structured surveys to 245 participants living in rural and urban slums.

The survey questionnaire was composed in Marathi, a native language of the respondents and the researcher. Some of the questions that elicited the most pertinent

and rich qualitative responses were as follows: (1) Can you describe three main reasons for not owning a mobile phone? (2) Have you experienced any loss due to lack of ownership of a mobile phone? If yes, do you wish to describe that loss? (3) Would anybody resist you owning a mobile phone? If yes, why? (4) Would anybody assist you in owning a mobile phone? If yes, how? (5) How do you plan to pay phone bills after you start owning a mobile phone? It is important to note that none of the questions directly asked respondents about the inequalities they experience in their daily life.

The researcher had specifically instructed the local assistants to record the non-verbal communication during their interaction with respondents; as a result, the assistants took notes of the emotional reactions of some of the respondents, which offered a perspective to the researcher allowing easier communication and better interpretation of the qualitative responses collected in his absence.

Data analysis

The qualitative responses of the respondents were analyzed using grounded theory principles (Strauss and Corbin, 1998). The responses were read repeatedly to identify and name patterns, concepts, and themes. Each response was analyzed on an individual level and then compared across subjects to identify patterns and common categories. Open, axial and selective coding facilitated the data analysis which yielded socio-cultural, economic, demographic, psychological, communication-related, and health related inequalities creating economic barriers for the respondents to own a mobile phone (see Table 2).

INSERT TABLE 2 HERE

Table 2. A Combination of Economic & Non-Economic Inequalities
Creating Economic Barriers for Respondents

Findings & Discussion

Economic inequalities for respondents

Survey responses reveal that a lack of economic opportunities and a lack of access to formal financial institutions are the key economic inequalities responsible for creating economic barriers for the respondents to own a mobile phone.

Lack of economic opportunities. A number of respondents do not have opportunities to earn stable income throughout the year. None of them have steady jobs that provide health insurance or any retirement benefits. Respondents who are engaged in businesses earn very low profits. Very low raises to meager salaries in seasonal employment create economic barriers for the respondents. Generally, women are paid less than men for performing the same types of jobs. Despite undertaking multiple part-time jobs, respondents earn on average around \$2 a day. Looming retirement without pension or with a low pension worsens the economic condition of some of the respondents.

Lack of access to formal financial institutions. Typically, banks do not serve the poor in developing countries since it is not a profitable proposition to carry out financial transactions with tiny profits (Mohan et al., 2013). The financial collateral required to borrow money from banks and the paperwork involved in dealing with banks discourage the poor from borrowing money from banks. Hence, the poor, including all of the respondents in this study, are forced to rely on local moneylenders who charge usurious

interest rates of more than 100% a year. As a result, respondents and their families are caught in a vicious cycle of debt, making it impossible for them to buy a mobile phone.

Five types of non-economic inequalities experienced by respondents

Survey responses reveal the following non-economic inequalities in the lives of respondents.

Socio-cultural inequalities. The average age of participants, who belong to lower caste Hindu and Muslim minority communities in rural and urban India, was 37. Around 60% of participants were between the ages of 25 and 45. Twenty percent of participants were between the ages of 19 and 24. The remaining 20% of participants were above 45 and below 65 years of age. Oppressive gender roles for women and unfair religious beliefs and practices force respondents of all ages to suppress emotions and aspirations in the male-dominated Indian society. Moreover, it is not safe for women of any age to live by themselves in India. Hence, the support of male family members becomes necessary for respondents of all ages. Young girls do not have any other option but to get married; they are forced by their parents to get married before they could become financially independent. Parents start saving for the dowry needed to get their daughter married right from her birth, which is one of the reasons for rampant female feticide and domestic violence in India (Sharma and Gupta, 2013). Typically, in-laws do not easily allow married women to work outside the house. Working women are expected to take care of their family responsibilities without much help from in-laws at home. A majority of married respondents assume the financial burden of dependent family members including children and in-laws. Sometimes husbands do not earn, or waste their earnings on addictions such as gambling and alcoholism.

Psychological inequalities. In general, technology is believed to be men's forte in India, which creates an inferiority complex among women towards owning and using ICTs (Hofstede, 2014). Women typically lack the confidence needed to operate ICTs and are unable to resolve day-to-day technical issues when using ICTs, eventually developing apathy towards owning and using ICTs (Potnis, 2011). Respondents in the current study also reported their fear of operating mobile phones. Some of them are afraid of failing to afford paying monthly bills, whereas some perceive owning a mobile phone as a risky venture.

Demographic inequalities. Parents are often apathetic about educating a female child. As a result, 40% of respondents were illiterate. Thirty percent of participants dropped out of school before the 10th grade; twenty percent of participants left school after the 10th grade; and the remaining participants were college graduates. Due to a lack of education, knowledge, or skills, women are deprived of a number of socioeconomic opportunities, including high-paid stable jobs. In addition, although a number of government policies make education free for girls across India, a majority of the population cannot communicate in English, the most widely used language of instruction on ICTs including mobile phones (Potnis, 2015).

Communication-related inequalities. A majority of married respondents, who earn daily wages, receive notification about temporary jobs over their husbands' mobile phones. If husbands don't pass on the information related to these jobs, respondents miss out on the opportunities. Sometimes respondents hear about the availability of seasonal employment through friends. Again, it depends entirely on friends if they wish to communicate temporary job opportunities to the respondents or not. Sometimes

these friends prefer to forward that information to their family members rather than respondents. This heavy dependency on gatekeepers like husbands or friends when seeking seasonal or temporary part-time jobs does not guarantee women income on a regular basis.

Health-related inequalities. The living conditions of respondents and their family members in slums are abysmal. This causes frequent health problems and periodically makes them sick. Degrading health conditions, a lack of timely access to doctors and health facilities and frequent accidents, injuries, and infections at risky job venues indicate health-related inequalities in the lives of respondents and their family members. Some of the risky job venues causing health problems include chemical factories requiring respondents to handle inflammable chemical substances banned in the West without any protection, construction sites not requiring respondents to take any safety measures, non-biodegradable plastic plants producing poisonous chemicals as byproducts, leather tanning workshops requiring respondents to work with the skin of dead animals, and snake bites to farm workers in rainy season. They have no choice but work in conditions that are potentially harmful to their health. Due to lack of insurance, respondents ended up using up their savings to cure unexpected health hazards encountered at work or at home a number of times.

Economic barriers created by economic and non-economic inequalities

The qualitative responses of respondents reveal the following eight economic barriers, which result from a combination of the above six types of inequalities in the lives of respondents. The economic barriers to owning mobile phones can be grouped into the following three categories.

- A. Income-related economic barriers: fluctuating low personal income and low household income
- B. Savings-related economic barriers: low personal savings, lack of financial support from husbands, majority of financial dependents in family, unexpected and unforeseen family expenses, and inherited debt
- C. Cost of owning and maintaining a mobile phone

The following sub-sections contextualize and discuss the above barriers in detail.

A. Income-related economic barriers

1. Fluctuating low personal income: A majority of respondents do not have a steady source of income. All of them earn on average around \$2 a day. As illustrated below, the problem of fluctuating low income is worse than steady low income. Many respondents' daily earnings are seasonal or are affected by factors like the availability of jobs in the vicinity, environmental factors (e.g., floods, draughts, etc.), festival season, the demand for specific skills on a particular day, communication-related inequality (i.e. lack of awareness about a specific job depending on the job-related information communicated by gatekeepers like husbands or friends), and respondents' ability to reach a specific site at the right time to grab an employment opportunity. For instance, Pramila, a 54-year old folk artist married for more than 20 years, earns less than a dollar a day by engaging in various cultural activities. She sings *garud*, traditional Indian folk songs and auspicious verses at weddings. She dances to traditional songs at weddings. She practices *jogva*, a method of seeking food where villagers donate groceries and

rations to her only on Tuesdays and Fridays every week. Sometimes she even helps chefs in a mess hall. She said:

“I earn very low daily wages. Work is not guaranteed every day, hence the earnings! There is no gas or electricity at home. We live in a single room. I earn highly instable income. I don't get any work in the rainy season. In those days, (my) income is not enough even for having food every day.”

In addition, demographic inequalities like illiteracy and lack of knowledge or skills (e.g., the ability to read English or operate computers) dim respondents' chances of having high-paying steady jobs. For instance, Babita, a 40-year old illiterate woman married for more than 20 years, washes utensils for a living. She earns less than a dollar a day to support her family of five. She said: “We don't even have money to repair the home, which leaks in the rainy season. Income is far less than expenses. How can I afford a mobile phone?” Surekha, a 48-year old tenth-grade educated woman married for more than 20 years, cooks for others for a living. She has two jobs but earns less than a dollar a day to support her family of five members. Due to her lack of technical skills needed to operate computers, she could not a get a well-paid stable job at a local tutorial a few years back. Jayashree, a 74-year old woman who drops off children to school for a living, said: “I receive a very little pension. I take care of my grandson using the pension. I earn by dropping off children at their schools. My low seasonal income is not sufficient enough to buy a mobile phone.” She doesn't get to earn when schools are closed for summer vacation. Thus the fluctuation in daily incomes increases financial

instability in the lives of the respondents, making it challenging for them to make ends meet.

2. *Low household income*: Low household income is one of the most frequently documented reasons for not owning an ICT in the literature on the gender digital divide (Hafkin and Huyer, 2008). Parvin, a 25-year old married woman who prepares ornaments using pearls, beads, etc. for a living, reported in her survey:

“My family members help me in making ornaments when I bring my work home. If we prepare more ornaments, we get to earn more. We rely on daily wages, which is a highly unpredictable and unreliable source of income. If we get raw material, only then are we able to make ornaments. Otherwise we starve the whole night waiting for the next day.”

Ratnaprabha, a 33-year old mother of two children helps her husband in his screen-printing business. In addition, she takes in sewing orders. She also makes rubber stamps as a part-time business. Despite drawing income from three businesses, her family cannot earn more than two dollars a day. She said in agony:

“We have very low earnings. The profit margin for all of our businesses is very small. There is hardly any money that we earn after subtracting the material cost and travel cost from our revenue. It is a hopeless situation!”

Sindhu, an illiterate 35-year old woman married for more than 20 years, works in rice fields during the rainy season. During this seasonal employment, she sows rice and

cuts grass in rice fields owned by rich people in her village. In the remaining months, she catches fish along with her husband and sells them by going door-to-door. They catch fish by nine in the morning so that she can sell them in nearby villages before noon. They earn not more than two dollars a day to support a family of six members. She complained about the low profit in her business: “We catch fish at Pune and Shirwal and sell them to smaller villages. I need INR40 (80 cents) for ice plus INR24 (50 cents) for a bus ticket to preserve the fish and sell them to customers. However, our earning is hardly enough for us.” Sugandha, a 62-year old 10th grade literate widow, is a retired school clerk but without any pension or earnings. Due to her health condition, she cannot work. She is dependent on her sons and lives with five other family members. She informed one of the local assistants: “I am retired. My sons earn meager salaries. We don’t have any more sources to earn more income. I feel helpless.”

B. Savings-related economic barriers.

3. *Low personal savings:* Kalpana, an illiterate woman married for more than 20 years, washes utensils and cleans the houses of others as a maid servant. She earns less than 25 cents a day. She said: “I spent all of my savings on getting our daughter married. Now we don’t even have enough money for food.” An ancient socio-cultural practice of providing dowry to a daughter’s in-laws at the time of her wedding took away all of the hard-earned savings of Kalpana and her husband.

Shanti, a 60-year old illiterate woman has financial commitments at her native place, which prevent her from saving any earnings. She remits a specific amount to her relatives every month, which is one of the main reasons she could not buy a mobile phone so far.

It is not a social norm and safe for a single women to live alone in India. Aasha, a 35-year old 10th grade educated unmarried woman, has a government contract for cooking lunch for school children in her village. Every day except weekends she prepares lunch for 100 children. In addition, she also prepares traditional Indian snacks and sweets as per order. Despite earning little below two dollars a day, she could hardly save two dollars a month for old age. She contributes almost all of her savings to her brother's family of seven members since she lives with them. She manages all the expenses for festivals, clothes, and various other unexpected expenses with her meager earnings. Nothing is left for her mobile phone. She is worried about her health and hence plans to save more money in the future, if possible.

Surekha, a 10th grade educated 40-year old married woman, teaches school-going children for a living. She complained: "Whatever I earn is insufficient to take care of all the expenses. My child's English-medium school fees, rent, maintenance, electricity bill, and other expenses are always out of control." Schools with English-as-a-language-of-instruction charge more fees than schools offering education in native languages but Surekha wants her child to attend English-medium schools so that the child would have as many opportunities as possible in the future.

4. Lack of financial support from husbands: Reshma, a 20-year old respondent who has been married for more than 10 years, has a disabled husband who lost his limb due to an accident at work. She earns less than 25 cents a day and is always worried about feeding five other family members. She exclaimed helplessly: "I work from early morning till late night but whatever I earn is never enough! I wash utensils at 8-10 places as part of my job. I cannot even think of buying a mobile phone!" Due to physical constraint, her

husband cannot work but sits idle at home. Due to a lack of insurance or savings his injury could not be treated. Reshma's financial condition does not allow her to buy a mobile phone.

In the male-dominated Indian society, men are not expected to share their savings with their families but women are forced to assume the financial responsibility of their families. Shehnaz, a 40-year old woman who has been married for more than 20 years, earns more than four dollars a day by selling bangles and ladies' ornaments on a cart, and takes care of three more members in her family. She complained:

“Women may die working for their families, but it is still not enough for men...Men are very lazy...if one man does not work other men think why should we work then? Let the women take the entire financial burden of the family...”

Her response represents a majority of female respondents who assume the financial burden of the entire family. Several of them could not own a mobile due to a lack of financial contributions made by their husbands

Asha, a 40-year old hawker who sells vegetables to support her family of six, had a similar reason for not owning a mobile phone. She hardly earns more than a dollar a day, but her husband does not earn at all. He is dependent on the property inherited from his father. He wastes all of his inherited money on various addictions rather than taking care of his family. In contrast, she invests her earnings back into the family but cannot even think about pursuing any kind of pleasure or need like owning a mobile phone.

5. *Majority of financial dependents in family:* Kamal, a 40-year old illiterate married woman, sells tiny brooms for cleaning Hindu holy places. She believes that her way of earning helps her to serve the God. She said: “*There are more mouths to feed than hands to work.*” But children are God’s gift. How can we deny his gifts? It would be a sin. I hardly earn anything by running a small business on the streets. I cannot afford a mobile phone.” She supports a family of six by earning less than 25 cents a day. A religious belief and a subsequent negative attitude towards family planning methods made her the mother of five children.

Rashibi, a 34-year old woman married for more than 20 years, serves as a maid at several houses in her vicinity. She complained about low salary (she earns less than 25 cents a day) and very low raises to her salary over the last five years. She lives with six other family members who earn not more than three quarters of a dollar a day. She had lost her hopes of owning a mobile phone: “Due to low salary, we cannot afford to have a mobile phone. There are too many financially dependent people at home. Medicines, household expenses, children's education, and inflation do not allow us to buy a mobile phone.” Hazardous living conditions and a pandemic in the slums caused her family members frequent hospital visits last year and the subsequent medical expenses took away all of her meager savings.

6. *Unexpected and unforeseen family expenses:* Vijaya, a 50-year old widow, earns less than 25 cents a day by acting as a care-taker for two mentally handicapped patients. Her 14-yr old daughter was sent back by her in-laws; she has the responsibility of supporting three dependent members in her family. Disheartened, Vijaya was in tears when she responded:

“My husband expired all of a sudden, and I have to take care of three young children now. I am very poor financially. I am very vulnerable. One fine day, I found out that my son was spoiled by addictions. Who knows what will happen with him next? I don't even earn INR 2000 (forty dollars) per month.”

She had a lot of hopes for her son. Typically in the male-dominated Indian society, sons are expected to look after their parents. But her son's addictions to alcohol and gambling destroyed her dreams since it would be difficult for him to find a stable job or a wife in the future. She felt very helpless and was deeply concerned regarding their future.

Aruna, a 35-year old woman who has been married for more than 20 years, earns less than a dollar a day by providing meals to company employees. She is an excellent cook; hence, her restaurant is popular in the area she lives in. She shared her reason in brief:

“My son met with an accident recently. I had to spend a lot of my savings to cure him. My daughter often demands money for paying a variety of fees at her college. Last year I had a lot of financial loss in my business. I truly cannot afford a mobile phone at this point.”

Her son fell down from a construction site and was taken to a nearby hospital where she spent all of her savings to get him back on his feet. She wanted to purchase health insurance for the entire family from a government-owned company but the extensive

amount of paperwork involved in having insurance for her family and the bribe needed to initiate the policy discouraged her from securing her family.

Hira, a 40-year old illiterate woman, sells vegetables the whole day in a town an hour away from her small village where she lives with her family of eight members. She lodges at her home, but otherwise she is out all the time, busy selling veggies. In extreme weather, she bears a loss in her business. Due to her lack of cold storage or access to a similar facility to store vegetables, she has to throw away rotten or spoiled vegetables, thereby taking huge financial losses in the business and making it difficult for her to buy a mobile phone.

7. Inherited debt: Mumtaj, a 45-year old widow, said that her husband spent all their savings on his alcohol addiction and finally died leaving a huge debt behind. Poonam, a tenth-grade teenager who works as a compounder in a medical dispensary, earns less than 25 cents a day and shares half the financial burden of her family of six. She almost screamed in despair: “We are poor! Our family has been poor for generations, so we do not have sufficient earnings! We are in debt. I don't have a father. My mother works and pays all the bills.” Due to a lack of financial collateral, her family could not take any loans from banks to invest in their business.

Several respondents were not the first generation in their families, who lived in slums. Addictions of male family members, sudden but recurring financial losses in multiple entrepreneurial ventures, and the inability of respondents to pay the loans taken for weddings, farming, businesses, or health-related reasons from local loan-sharks charging usurious interest rates (e.g., 100-400%), threw respondents into a vicious cycle of debt. Some of them were poor for generations, migrating from one place

to another in search of a better life and opportunities, but ended up living in slums all the time. Buying a mobile phone was not a top-priority for such respondents and their poverty-ridden families.

C. Cost of owning and maintaining a mobile phone

Snehalata, a 52-year old married woman, earns less than 25 cents a day by preparing traditional Indian snacks. She said: "Mobile phones are too expensive. I don't have enough money for a mobile phone. I cannot afford to recharge a mobile phone or use a prepaid one..." Mobile phone prices start from \$12 in India. Two of her friends, Sunita and Vaishali, who also earn by preparing traditional snacks, decided to stay away from mobile phones due to their unaffordable prices. They see buying a mobile phone as a risky venture, especially if for some reason they fail to afford prepaid cards or pay postpaid mobile phone charges.

Sunita, a 30-year old graduate, who has been married for more than five years, yearns for a mobile phone. Her husband refuses to buy her a mobile phone since she is a housewife and does not earn anything. Her husband perceives mobile phones as a means to make money, and hence, argues with her: "Why does a housewife need a mobile phone? It is a very expensive device. How would you earn money using a mobile phone?" Despite being a graduate she is not allowed to work because her husband thinks that it is her duty alone to take care of their young son.

Meena, a 50-year old lady who holds a graduate degree in business, lost her mobile phone when it fell down in a puddle. Her mobile phone was damaged and she could not use it anymore. Since then she uses her husband's mobile phone. Her

psychological fear prevents her from owning another mobile phone. She sighed: “A mobile phone is an expensive affair. I don’t want to lose it again. It is better that I use my husband’s mobile phone which I can access anytime I wish.” She is also afraid of addressing technical difficulties, if any, when using her mobile phone, and hence, uses her husband’s mobile phone.

Conclusion

Past studies have rarely demonstrated the role of a wide variety of economic and non-economic inequalities in generating economic barriers for women to own a mobile phone in the developing world, which is a unique contribution of this study. Among all of the inequalities identified in this study, socio-cultural and economic inequalities seem to play a dominant role in challenging the respondents the most economically, precluding them from owning a mobile phone. Hence, the author argues that the gender digital divide cannot be bridged unless the inequalities, especially socio-cultural and economic disparities, are addressed in the developing world. To address the gender digital divide in a developing country like India, it is necessary to first equip women to overcome the inequalities that create unfair economic disadvantages for them.

References

- ANNAFARI, M., AXELSSON, A. & BOHLIN, E. (2013) A socio-economic exploration of mobile phone service have-nots in Sweden. *New Media & Society*. 16 (3). p. 415-433.
- BARZILAI-NAHON, K. (2006) Gaps and bits: Conceptualizing measurements for digital divide/s. *The Information Society*. 22 (1). p. 269-278.
- BOURDIEU, P. (1986) The forms of capital. In: RICHARDSON J. (ed.) *Handbook of Theory and Research for the Sociology of Education*. Westport, CT: Greenwich Press.

- DIJK, J. (2005) *The Deepening Divide: Inequality in the Information Society*. Thousand Oaks, CA: Sage Publications.
- DIMAGGIO, P. & J. COHEN (2003) Information inequality and network externalities: A comparative study of the diffusion of television and the internet. *Working Paper No. 31*. Princeton, NJ: Center for Arts and Culture Policy Studies, Woodrow Wilson School, Princeton University.
- EUROPEAN COMMISSION (2005) *Digital divide forum report: Broadband access and public support in under-served areas*. Brussels: EC.
- FORTUNATI, L. (2002). The mobile phone: Towards new categories and social relations. *Information, Communication & Society*. 5 (4). p. 513-528.
- HAFKIN, N. & TAGGART, N. (2001) *Gender, Information Technology, and Developing Countries: An Analytic Study*. Office of Women in Development, Bureau for Global Programs, Field Support and Research, United States Agency for International Development.
- HAFKIN, N. & HUYER, S. (2008) Women and gender in ICT statistics and indicators for development, *Information Technologies and International Development*. 4 (2). p. 25-41.
- HILBERT, M. (2011) Digital gender divide or technologically empowered women in developing countries? A typical case of lies, damned lies, and statistics. *Women's Studies International Forum*. 34 (6). p. 479-489.
- HOFSTEDE, G. (2014) *Dimensions of national cultures*. Available at: <http://geerthofstede.nl/dimensions-of-national-cultures> (accessed 10 January, 2015)
- HUYER, S., & SIKOSKA, T. (2003) *Overcoming gender digital divide: Understanding ICTs and their potential for the empowerment of women*.
- KHAN, F., & GHADIALLY, R. (2009) Gender-differentiated impact on minority youth of basic computer education in Mumbai city. *Gender, Technology and Development*. 13 (2). p. 245-269.
- MADIANOU, M. & MILLER, D. (2011) Mobile phone parenting: Reconfiguring relationships between Filipina mothers and their left-behind children. *New Media and Society*. 13 (3). p. 457-470.
- MIJUMBI, R. (2002) ICT as a tool for economic empowerment of women: Experiences from the use of a CD ROM by rural women in Uganda. Paper presented at The United Nations Division for the Advancement of Women (DAW) Expert Group Meeting.

- MOHAN, L., POTNIS, D., & ALTER, S. (2013) Information systems to support “door-step banking”: Enabling scalability of microfinance to serve more of the poor at the bottom of the pyramid. *Communications of the Association of Information Systems*. 33 (1). p. 423-442.
- NORRIS, P. (2001) *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide*. Cambridge: Cambridge University Press.
- PATIL, D., DHERE, A., & PAWAR, C. (2009) ICT and empowerment of rural and deprived women in Asia. *Asia-Pacific Journal of Rural Development*. 19 (1). p. 1-22.
- POTNIS, D. (2011) Cell-phone-enabled empowerment of women earning less than \$1 per day. *IEEE Technology & Society*. 30 (2), p. 39-45.
- POTNIS, D. (2014) Managing gender-related challenges in ICT4D field research. *The Electronic Journal of Information Systems in Developing Countries*, 65 (2), p. 1-26.
- POTNIS, D. (2015) Beyond access to information: Understanding the use of information by poor female mobile users in rural India. *The Information Society*. 31 (1). p. 83-93.
- QURESHI, S. (2008) Assessing the effects of information and communication technologies on development. *Information Technology for Development*. 14 (4). p. 259-261.
- RICE, R., & KATZ, J. (2003) Comparing internet and mobile phone usage: Digital divides of usage, adoption, and dropouts. *Telecommunications Policy*. 27(8-9). p. 597-623.
- SHARMA, B., & GUPTA, M. (2013) Gender based violence in India: A never-ending phenomenon. *Journal of International Women's Studies*. 6 (1). p. 114-123.
- STRAUSS, A., & CORBIN, J. (1998) *Basics of qualitative research: Techniques and procedures for developing grounded theory*. 2nd Ed. Thousand Oaks, CA: Sage.
- TELECOM REGULATORY AUTHORITY OF INDIA. (2014) Telecom subscription data.
- VODAFONE INDIA GROUP. (2011) Mobiles can save India's poor women.
- WARSCHAUER, M. (2003) *Technology and Social Inclusion: Rethinking the Digital Divide*. Cambridge, MA: MIT Press.
- ZAINUDEEN, A., IQBAL, T., & SAMARAJIVA, R. (2010) Who's got the phone? Gender and the use of the telephone at the bottom of the pyramid. *New Media and Society*. 12 (3). p. 549-566.

Table 1. Barriers Reinforcing the Digital Divide

Inequalities and Respective Barriers	Micro-Level	Meso-Level	Macro-Level
Socio-Cultural [e.g., Oppressing gender roles for women in male-dominated societies, Unfair religious beliefs and practices] (Bourdieu, 1986; Hafkin and Huyer, 2008)	Women lack of freedom to make decisions	Neighborhood with high crime rate or poverty Membership of organizations facilitating access to new media	Social norms (e.g., parents saving money for the education of their male child but wedding of a female child)
Economic [e.g., Inflation, Lack of economic opportunities, etc.] (Annafari et al., 2013; Rice and Katz, 2003)	Lack of employment Inability to afford owning ICTs	Low household income	Fees for ICT-based services
Demographic [e.g., Lower caste, Less education, etc.] (DiMaggio and Cohen, 2003; Zainudeen et al., 2010; Dijk, 2005)	Illiteracy Lack of knowledge and/or skills		Shortage of ICT teachers Dominance of English on the Internet
Psychological [e.g., Beliefs creating inferiority complex among women] (Madianou and Miller, 2011)	Adverse attitudes toward ICTs (e.g., apathy to ICT adoption) Lack of self-efficacy to own and/or operate ICTs		
Geographic [e.g., Location (rural vs. urban), Poor transportation infrastructure, etc.] (European Commission, 2005)		Long distances to ICT facilities	Lack of ICT infrastructure (e.g., Poor signal strength)

Table 2. A Combination of Economic & Non-Economic Inequalities Creating Economic Barriers for Respondents

Reasons Reported by Respondents for Not Owning A Mobile Phone (Open Coding)	Inequalities (Axial Coding)	Barriers to Owning A Mobile Phone (Selective Coding)
<ul style="list-style-type: none"> • Young women are forced by their parents to get married before they could become financially independent • A common practice forces women to give away their savings in the form of dowry to get their daughters married • Women assume the financial burden of the dependent family members including children and in-laws • Sometimes husbands do not earn or share their earnings with wives • Lack of or insufficient cooperation from husbands and in-laws to run the family • In-laws force women to be part of low-profit family businesses rather than letting them earn independently • Family responsibilities prevent women from working outside 	Socio-Cultural	<p>Eight economic barriers related to the respondents' income, savings, and the cost of owning and maintaining a mobile phone</p>
<ul style="list-style-type: none"> • Lack of economic opportunities in the neighborhood where women live • Banks do not serve the poor – Inability of women to pay the loans taken from local loan-sharks charging usurious interest rates of more than 100% a year s • Compounding financial debt in the absence of male family members • Very low income and/or profit in business, very low raise in salary, and seasonal employment • Retirement without pension or with low pension • Inflation and subsequent burgeoning expenses • Skyrocketing prices of the staple food challenging women to make both ends meet 	Economic	<p>Micro-level Barriers: Fluctuating low personal income, Low personal savings, Lack of financial support from husbands, and Cost of owning and maintaining a mobile phone</p>
<ul style="list-style-type: none"> • Women's fear of failing to afford mobile prepaid cards or pay postpaid mobile phone charges • Women rely on husbands' mobile phones due to the fear of losing their mobile phone, if bought in the future • Husbands do not perceive any financial gain in buying a mobile phone for wives • "Children are God's gift" attitude, i.e. lack of family planning leads to "more mouths to feed than hands to work" situation 	Psychological	<p>Meso-level Barriers: Low household income, Majority of financial dependents in family, Unexpected and unforeseen family expenses, and Inherited debt</p>

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- Girls are not provided education and become financially dependent on men
 - Lack of higher education and skills to acquire high-paying jobs

Demographic

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- Husbands prevent respondents from receiving information about daily-waged jobs on time
 - Friends prefer to share job opportunities with their family members rather than with respondents

Communication

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- Degrading health conditions, medical expenses, and accidents and injuries
 - Death of family members leaving huge debts behind
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Health