International Journal of Applied Social Science *RESEARCH PAPER*
Volume 5 (9), September (2018) : 1415-1424 ISSN : 2394-1405 (Print)
Received : 02.07.2018; Revised : 17.07.2018; Accepted : 03.08.2018

Using Capability Approach to Examine Rural Women's Engagement with Mobile Diffusion for Health Access and Agriculture Related Services

NEHA YADAV*[1], PARVEEN PANNU[2] AND JYOTI DALAL[3]
[1]Ph.D. Scholar, [2]Associate Professor and [3]Assistant Professor
[1&2]Department of Development Communication and Extension, Institute of Home Economics, University of Delhi, New Delhi (India)
[3]Department of Elementary Education, Institute of Home Economics University of Delhi, New Delhi (India)

ABSTRACT

There is a great emphasis on digital communication, by government and private entities, which are constantly introducing various mobile phone applications related to health, education, agriculture, finance and employment avenues to connect and make the lives of people better. Mobile phone has become an important tool of digital communication as it can play a significant role in enlightening people with valuable information in their daily lives. This paper intends to bring forth the engagement of rural women with mobile phone towards improving access to health care and for participation in agriculture. The way the technology works when seen through the social prism of caste, class, religion and gender is a central question of this research.The theoretical framework of the capability approach has been deployed in understanding its application towards digitalization. The paper looks at the application of the capability approach in developing an understanding of the field, particularly the outreach of government programmes. The study is significant because in times of growing digitalization there is a need to understand the impact of the digitalization embedded in the government programmes on the socio-economic life of rural women. It attempts to look at whether the welfare programmes are out of reach for rural women and examines the reasons for their gendered positioning in a patriarchal set up coupled with their low educational status. It examines the diffusion of digital communication in the two significant aspects of health and agriculture related to rural women in the state of Uttar Pradesh. The study has been exploratory in nature and in-depth interviews, having a sample of 26 rural women, from whom information was gathered about the use and intent of digital communication with the use of mobile phone among rural women. The study brings out that women, who are marginalized by the social factors like caste, class, and the resulting cessation of education, get pushed away from availing these services and that the translation and implementation of government programmes and applications become arbitrary by the time they reach the ground reality of field. The technology cannot be seen as a given; it needs to be properly attended on the axis of caste, class, religion, gender as well as the education status for rural women to avail of the digitalization.

Key Words : Rural women, Mobile phone, Capability Approach, Digitalization

How to cite this Article: Yadav, Neha, Pannu, Parveen and Dalal, Jyoti (2018). Using Capability Approach to Examine Rural Women's Engagement with Mobile Diffusion for Health Access and Agriculture Related Services. *Internat. J. Appl. Soc. Sci.,* **5** (9) : 1415-1424.

INTRODUCTION

There is a great emphasis on digital communication, by government and private entities, who are constantly introducing various mobile phone applications related to health, education, agriculture, finance and employment avenues to connect and make the lives of people better. Mobile phone has become an important tool of digital communication as it can play a significant role in enlightening people with valuable information in their daily lives. Mobile technologies are opening new channels of communication between people and governments, potentially offering greater access to public information and basic services to all (World Bank, 2008). They offer greater independence for women by opening new channels of information and affording greater personal privacy. They can also offer women greater security as an emergency tool and provide them a chance to make decisions for their economic wellbeing by and for themselves (UNDP, 2012). In addition to the many other social benefits that stem from access to digital communication services, mobile phones have been found to enhance the livelihoods of micro-entrepreneurs in both urban and rural locations, improve access to health services, and support farmers with relevant agricultural information (Chew *et al.*, 2010; Chib, 2013). The present study makes an attempt to examine the impact of digital communication in the rural women's significant's work areas of health and agriculture in the state of Uttar Pradesh. The rural women are central to development and perform several activities from household to agricultural but their backbreaking efforts have mostly remained unacknowledged. It is a fact long known but taken for granted but also ignored. Subsequently they have remained as invisible workers.

To understand the situation of rural women, it is necessary to examine the full diversity of their experiences in the context of the changing rural economy, including their position within household and community structures; the gender division of labour; their access to and control over resources; and their participation in decision-making. Rural women are not a homogeneous group; there are important differences among women in rural areas based on class, age, marital status, ethnic background, race and religion (Sandys, 2008). The study offers an insight on how the translation and implementation of government programmes and applications become arbitrary by the time they reach the rural women and they are pushed away from availing these services. Are the government programmes out of reach for most women because of their gendered positioning in a patriarchal set up and low education status?

Theoretical framework of the Capability Approach was deployed in understanding its application towards the digitalization and its impact on rural women's lives. It has been widely used to evaluate the quality of human life and the process of development.

The objective of the study is to examine the nature of the influence of mobile phone on rural women's participation in health and agriculture-related activities and its impact on the capability of women.

Capability Approach: An Overview

The Capability Approach was first propagated by the Indian Nobel laureate economist and philosopher Amartya Sen. It has been used to address the topic of human development, social policy, political philosophy and welfare economics. As a broad normative framework for the evaluation and analysis of individual's well-being, Capability Approach is concerned with the promotion of human development. It contains three central concepts: functioning, capability and agency. Functioning represents a person's ability to do or be in leading a life that he or she wants to live. It

includes working, resting, being literate, being healthy, being part of a community, being respected and so forth. Capability reflects a person's freedom to choose between alternative combinations of functionings to lead the kind of life he or she has reason to value. Agency is ability to pursue and realize goals that one values (Sen, 1993; Robeyns, 2005, 2006; Alkire and Deneulin, 2009).

The primary feature of well – being can be seen in terms of how a person can "function," refers to various doings and beings that come into this assessment as functionings. These could be activities like eating, reading seeing, state of existence or being, being well nourished, being free from malaria, not being ashamed by the poverty of one's clothing or shoes (Sen, 1985).

As Clark (2005) mentioned, 'like Adam Smith, Sen (1983) emphasizes that economic growth and expansion of goods and services are necessary for human development. However, like Aristotle, he reiterates the familiar argument that wealth is evidently not the good we are seeking: for it is merely useful and for the sake of something else (Sen, 1990, p.44). In judging the quality of life we should consider what people are able to achieve. Different people and societies typically differ in their capability to convert income and commodities into valuable achievements. A disabled person may require extra resources (wheel chairs, ramps, lifts. etc.) to achieve the same things (moving around) as an able bodied person. Moreover, a child typically has very different nutritional requirements from a manual labourer, pregnant woman or someone with a parasitic disease. Similarly, the commodity requirements for more complex social achievements (such as appearing in public without shame or entertaining family and friends) typically depends on cultural factors such as social convention and custom or status and class (Sen, 1985, pp. 25-26; 1999, pp. 70-71)'. Development has to be more concerned with enhancing the lives we lead and the freedom we enjoy. By focusing on freedom, Capability Approach acknowledges that people have different ability to convert similar resources in to valuable achievements (Frediani, 2010).

Experts have pointed out that it is significant to evaluate whether different individuals have the capacity to evolve out of the resources that are valuable for functioning. Focusing on acknowledging what different people can do, this approach ensures that these differences are highlighted before any kind of policy framework is evolved. It focuses on the well – being that an individual is able to achieve; hence having freedom to choose life they have reason to value. Scholars have argued the role of technology in the augmentation of capability (Osterlaken, 2009, 2011; Qureshi, 2011; Hataka and de', 2011; Haenssgen and Ariana, 2018). Sen (2010) discussed phone as freedom enhancing, as a resource, it is subjected to conversion factors like computer literacy and the infrastructural context (Haenssgen and Ariana, 2018). Mobile phone, as enabler and facilitator, is making contribution in economic, social and governance spheres (Smith *et al.*, 2011). Theoretical framework of capability Approach is deployed to scrutinize the role of digital communication tools such as mobile phone in expansion of capability of rural women.

METHODOLOGY

Background of the study:

The present exploratory study has triangulated quantitative and qualitative research method to know the diffusion of mobile technology among rural women for health and participation in agriculture activities.

Of the 75 districts in the state of Uttar Pradesh, 2 districts, namely Sultanpur and Faizabad, were selected purposively. Village Pakharauli from Bhadayeea block (from 13 blocks in Sultanpur district) and Village Madhupur from Masodha block (11 blocks in Faizabad district) were selected

purposively for the study on the basis of their accessibility. The population of Pakharauli village is 3568, with 1787 males and 1781 females and the Madhupur village has a population of 2887 with 1462 males and 1425 females (Census, 2011). The sample consisted of a total of 26 rural women in the age group of 25-35, selected through random sampling, from Pakhrauli and Madhupur village as the young people tends to be greater users of mobile technology.

The core understanding of Capability Approach and its application and the use of mobile technologies across the globe has been acquired through an extensive document analysis of secondary sources including websites, reports of national and international organizations, print media, and other existing scholarly work done in area. For the primary data, a questionnaire consisting both quantitative and qualitative questions related to socio-educational profile of rural women, mobile phone diffusion and mobile usage for health and agriculture related activities was developed and employed for rural women in an in-depth interview format.

Socio- educational profile of rural women:

Socio- educational characteristics such as age, education and caste were assessed. These characteristics provide an overview on the background of the respondents. There were more Hindu women (80.76%) than the Muslim one (19.23%) and more of OBC women (57.69%) than the General and SC (Table 1).

Table 1 : Socio- educational profile of sample

Categories		No. of Respondents (n=26)	Percentage (%)
Age	25-30	9	34.61
	31-35	17	65.38
Religion	Hindu	21	80.76
	Muslim	5	19.23
Caste	General	4	15.38
	OBC	15	57.69
	SC	7	26.92
	Illiterate	6	23.07
Educational Status	Up to 8^{th}	10	38.46
	10 to 12^{th}	4	15.38
	Graduation or above	6	23.07

Source: Field survey, 2017

RESULTS AND DISCUSSION

Mobile phone diffusion among rural women:

Through Digital India programme, Indian Government focuses on digitalization by constantly launching various mobile based applications. Digital communication tools like mobile phones and mobile based applications can serve as complementary channels for delivery of public services and can have positive outcomes on the quality of life of the people impacting both rural and urban areas. To understand the mobile accessibility and its usage among rural women, data were analysed on the basis of education, caste and Income level. Most of the respondents 20 respondents (76.92 %) owned mobile phone whereas 6 respondents (23.07%) did not have a mobile phone (Table 2). The National Family Health Survey-4 (2015-16) data on mobile usage among women has shown only 46% rural women use and own a mobile phone as compared to 62% urban women. The most

common reason cited by the respondents for not owning a mobile phone were their financial problems.

In rural India, mobile phone accessibility is still an important concern for women. Women still rely a lot on men to access mobile phones (Dahdah and Kumar, 2018). *"I do not need for one. My husband has a mobile phone I use his phone whenever I need to talk. Our family conditions are not so favourable that every member can have a personal phone." – (A 33 year old woman, I interviewed).*

According to International Telecommunication Union (2017), basic phones denotes devices with limited feature sets, limited factory-installed or user-installable value added third party applications, or very limited data connectivity whereas smartphones offers a better user interface than used on basic and feature phones, as well as providing more bouquets of service offerings. Most of the women owned basic mobile phones which were primarily meant for making and receiving calls. The ownership of smartphone was found to be very minimal as only 5 respondents (25%) owned smartphone. In majority of the respondents, Samsung was the most common brand that was being used by women. *"Initially I bought it to communicate but then I realise that there are so many things on the phone. Apart from call mostly I use phone for WhatsApp and Music"- (A Smart phone user).*

Mobile Phone diffusion in agriculture related work:

Governmental and Non-government Organizations have introduced various agricultural mobile applications to enhance the access for rural poor and to make agricultural services more effective. A list of recent mobile based agriculture related apps is presented here.

Kisan Suvidha:

This app launched by Prime minister Narendra Modi in 2016 to work towards empowerment of farmers and development of villages, provides information on current weather and provides the forecast for the next five days, market prices of commodities/crops in the nearest town, knowledge on fertilizers, seeds, machinery etc.

IFFCO Kisan*:*

This app launched in 2015 is managed by IFFCO Kisan, a subsidiary of Indian Farmers' Fertilizer Cooperative Ltd. Its aim is to address several problems faced by Indian farmers by using state of art ICT services tailor- made solutions. The user can access a variety of informative modules including agricultural advisory, weather, market prices, agriculture information library in the form of text, imagery, audio and videos in the selected language at profiling stage. The app also offers helpline numbers to get in touch with Kisan Call Centre Services.

AgriMarket:

The Union Minister of Agriculture and Farmers Welfare, Radha Mohan Singh introduced it in 2015 to help the farmers to know the prices of crops in the market within 50 km range of the device and other markets in the country.

U.P. Pardarshi Kisan App :

This app offer benefits of Pardarshi Kisan Sewa Yojana to farmers on their mobile phones. Pardarshi Kisan Sewa Yojana is accessible through browser on Agriculture Department Portal (www.upagriculture.com)

***Apni Kheti: Agriculture Information and Social App**:*

This app aims to provide farmers across India, the right information at the right time from sowing, protecting to harvesting their crops.

Table 2 : The use of Mobile based Agricultural services by the respondents

Sr. No.	Which agriculture related apps, do you use?	Response Yes/No
1.	Kisan Suvidha	No
2.	IFFCO Kisan -Agriculture App	No
3.	AgriMarket	No
4.	U.P. Pardarshi Kisan App	No
5.	Apni Kheti-Agriculture Information and Social App	No
Any other (Specify)		No

The respondents were unfamiliar about any agricultural apps and were not using their phone for any kind of information related to agriculture. Affordability and low level of education have become a challenge for rural women to realize the full benefits of mobile technology.

Mobile phone diffusion in health related services:

Under National Health Mission (NHM), Government have started National Ambulance Service to transport ambulances for patients under dial 108 and 102.108 is predominantly an emergency response system, primarily designed to attend to patients of critical care, trauma and accident victims while 102 for attending pregnant women and children. Most of the women were aware about National Ambulance Service numbers 102/108 although few women (15.38 %) have used their phone to dial 102/108 for ambulance service in an emergency. Due to lack of know-how, majority of women (84.61) rely on male members in their family to avail the service in an emergency situation. Except National Ambulance Service, rural women were not acquainted with any mobile based health toll free numbers and applications. Digital divide exists at the ground level as majority of the respondents were not using any mobile phone applications for health.

Role of socio-economic factors- caste, income and education in the development of rural women:

In a rural scenario, socio-economic factors such as caste, education and income play a key role in the development of women. Srinivas (1962), defined caste "as a hereditary endogamous, usually localised group, having a traditional association with an occupation and particular position in the hierarchy of castes. Relations between castes are governed, among other things, by concepts of pollution and purity and generally maximum commensality occurs within the caste."

Although the sample size was very small, it reiterates that caste hierarchy exists in rural India. Agricultural worker were those who have land holding and work on their land while non-agricultural worker possess land holding but do not work on land. Agricultural labourers were high for women belonging to SC category (42.8 %) and Muslim OBC (20%).The findings are in accordance with another research,'Women work participation in rural Uttar Pradesh: A regional analysis'which shows that the Work Participation Rate for women is associated with caste structure and it is generally high for Hindu SC/ST and Muslim OBC women. The quality of employment is generally badfor Hindu SC/ST and Muslim OBC women as most of them are working as casual labour

Table 3 : Mobile Phone Usage, Preference of Health Centers, Agriculture participation on the basis of Caste (%)

Social Group	Educational Status				Type of Mobile phone			Preference of Rural Health Practitioners/ Centers		Participation in Agriculture Activities		
	Illiterate	Middle	10 to 12th	Graduate or above	No	Yes		Private	Govt.	Worker	Non-Worker	Labourer
						Basic	Smart					
Hindu SC	57.1	28.5	14.2	-	71.4	28.5	-	100	-	42.8	14.2	42.8
Hindu OBC	10	40	20	30	-	80	20	100	-	40	60	-
Hindu General	-	25	25	50	-	75	25	100	-	-	100	-
Muslim OBC	20	60	-	20	20	40	40	80	20	-	80	20

Source: Field survey, 2017

(Singh and Mishra, 2013).The participation of women in agricultural activities is determined by education, caste and income.All Hindu women from general category were using phone and had no participation in agricultural activities. *"Farming activities is men's work. I belong to a Brahmin family. In our family women generally are not expected to work on an agricultural field"- (A 28 year old woman I interviewed).* Agricultural workers were high among women belonging to Hindu SC (42.8 %) and Hindu OBC (40%). The numbers of SCs women clusters were more in the lower economic background than the other end of the spectrum. The respondents belonging to Hindu General and Hindu OBC was apparently better in terms of mobile phone accessibility, education and income than women from SC category.

Table 4 : Mobile Phone Usage, Preference of Health Centers, Agriculture participation on the basis of education (%)

Educational Status	Type of Mobile Phone			Preference of Rural Health Practitioners/ Centers		Participation in Agriculture Activities		
	No	Yes		Private	Govt.	Worker	Non-worker	Labourer
		Basic	Smart					
Illiterate	50	50	-	100	-	33.33	-	66.66
Up to 8th	20	70	10	100	-	40	60	
10 to 12th	25	50	25	100	-	-	100	-
Graduate or above	-	50	50	66.6	33.3	-	100	-

Source: Field survey, 2017

Most of the women who did not have access to mobile phones were illiterate (50%) and no smart phone owner were observed within the same sample set (Table 4). Access to smart phone was high among those women who were educated up to graduate level (50%). Respondents with high level of education owned a mobile phone and had no participation in agricultural activities (Table 4). Most women who dropped out early from formal school did so mainly to get married. Another factor influencing them to dropout from school was the fact that the economic conditions of their family and schools offering higher education were located very far from the village. *"School was located 10-15 km from our village. For safety concern and school fees, parents were not*

in favour of my education. They were saving for my marriage"- (One of the respondents I interviewed)

Table 5 : Mobile Phone Usage, Preference of Health Centers, Agriculture participation on the basis of Income level (%)

Annual Family Income	Education Status				Type of Mobile Phone			Preference of Rural Health Practitioners/ Centers		Participation in Agriculture Activities		
	Illiterate	Up to 8th	10 to 12th	Graduate or Above	No	Yes		Private	Govt.	Worker	Non-worker	Labourer
						Basic	Smart					
<1 lakh	42.8	57.1	-	-	28.5	71.4	-	100	-	28.5	28.5	42.8
1-3 lakh	23.1	38.4	-	38.4	23.1	53.8	23.1	100	-	38.4	53.8	7.6
3-5 lakh	-	-	100	-	25	50	25	100	-	-	100	-
>5 lakh	-	50	-	50	-	50	50	50	50	-	100	-

Source: Field survey, 2017

Table 5 illustrates that agricultural labourer belonged to low income group. Respondents with high income group owned a mobile phone and had no participation in agriculture activities. A survey conducted by Global System Mobile Association (2015) showed that the income and education levels have a large impact on mobile internet usage.Majority of the respondents preferred rural health practitioners available nearby their village (Table 5). Various health centers have opened in rural areas under government programmes. These government health centers in rural areas generally are not equipped with basic facilities to meet the health issues of people. Health centers with well-qualified doctors, advanced technological facilities are located far away from the village. These are the reasons that pushed them to avail health services from rural practitioners available in their village. The study shows that ownership of mobile phones varies with income level, education and caste. Poverty, education, and caste affect rural women's capabilities, impacting their overall development.

Conclusion:

The study is exploratory in nature and brings out that rural women are marginalized by the social factors like caste, class, and the resulting cessation of education. The study based on the theoretical framework of Capability Approach highlights the relationship between digital communications based government programmes and women's capabilities. Government have initiated various mobile based programmes for improving connectivity of women. Even though women may have access to mobile phones but their unfamiliarity with government efforts may get bypassed in availing various benefits of government programmes. The ownership of mobile phone, nature of its usage varies depending on the socio-economic background of the rural women.The study further unveils that the social factors plays a significant role in order to realise functionings from the possible opportunities.Rural women have opportunities in the form of government programmes but they do not realise how the usage of mobile phone applications can enhance their capability as it provides information on various significant field: health, agriculture, education and employment. Illiteracy, unawareness and social factors such as education, caste and income are the key barriers in the development of rural women as these factors hinders the conversion of resources into valuable functionings. It helps us to understand that mobile phone technology needs to be properly attended

to on the axis of caste, class, religion, gender and education. Or else, the use of technology which has the potential to bring positive changes in the lives of people misleading and bypassing vulnerable sections of the society.

REFERENCES

Alkire, S., and Deneulin, S. (2009). The Human Development and Capability Approach . In S. Deneulin, and L. Shahani (Eds.), *An Introduction to the Human Development and Capability Approach: Freedom and Agency* (pp. 22-48).

Apsan, F. A. (2010). Sen's Capability Approach as a framework to the practice of development. *Development in Practice,* **20**(2) : 173-187.

Chew, H.E., Ilvarasan, P.V. and Levy, M. R. (2010). The Econommic Impact of Information and Communication Technologies on Microenterprises in the contextof Development. *Electronic Journal of Information Systems in Developing Countries,* **44**(4) : 1-19.

Chib, A. (2013). The promise and Peril of mHealth in developing countries. *Mobile Media & Communication,* **1**(1) : 69-75.

Clark, D.A. (2005). The Capability Approach: Its Development, Critiques and Recent Advances.

Dahdah, M.A. and Kumar, A. (2018). Mobile Phones for Maternal Health in Rural Bihar Reducing the Access Gap? *Economic Political Weekly,* **LIII**(11) : 50-57.

GSMA Connected Women (2015). *Bridging the Gender Gap: Mobile access and usage in low and middle income countries.* Retrieved from https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/02/Connected-Women-Gender-Gap.pdf

Hatakka, M. and De', R. (2011). Development, Capabilities and Technology – An Evaluative Framework. *Proceedings of the 11th International Conference on Social Implications of Computers in Developing Countries, Kathmandu, Nepal.*

International Telecommunication Union (2017). *ITU-T Focus Group Digital Financial Services: Mobile Handset Use in Digital Financial Services.* Retrieved from https://www.itu.int/en/ITU-T/focusgroups/dfs/Documents/201703/ITU_FGDFS_Report-Mobile-Handset-Features.pdf

National Family Health Survey-4 (2015-16). India Fact Sheet. Retrieved from http://rchiips.org/NFHS/pdf/NFHS4/India.pdf

NHM component: ERS Patient Transport Service. (n.d.). *National Health Mission, Ministry of Health and Family Welfare,Government of India*. Retrieved from http://www.nhm.gov.in/nrhm-components/health-systems-strengthening/emri-patient-transport-service.html

Oosterlaken, I. (2009). Design for Development: A Capability Approach. *Design Issues,* **25**(4) : 91-102.

Oosterlaken, I. (2011). Inserting Technology in the Relational Ontology of Sen's Capability Approach. *Journal of Human Development and Capabilities,* **12**(3) : 425-432.

Press Information Bureau . (2015). *Two Mobile Apps Launched for Farmers* . Retrieved from http://pib.nic.in/newsite/PrintRelease.aspx?relid=133861

Qureshi, S. (2011). Information technology for development in expanding capabilities. *Information Technology for Development,* **17**(2) : 91-94. doi:10.1080/02681102.2011.569355

Robeyns , I. (2006). The Capability Approach in Practice. *The Journal of Political Philosophy,* **14**(3) : 351-376.

Robeyns, I. (2005). The Capability Approach: a theoretical survey. *Journal of Human Development,* **6**(1) : 93-114.

Sandys, E. (2008). *Rural Women in a Changing World: Opportunities and Challanges. Women 2000 and Beyond*. Retrieved from http://www.un.org/womenwatch/daw/public/Women%202000%20-%20Rural%20Women%20web%20English.pdf.

Sharma, P. (n.d.). Retrieved from CLARO: http://claroenergy.in/top-10-apps-revolutionizing-indian-agriculture/

Singh, U. B., and Mishra, N. K. (2013). Women Work Participation in Rural Uttar Pradesh: A Regional Analysis. *International Journal of Social Science & Interdisciplinary Research,* **2**(8) : 47-57.

Smith, M. L., Spence, R., and Rashid, A. T. (2011). Mobile Phonnes and Expanding Human Capaabilities. *Mobile Telephony,* **7**(3) : 77-78.

UNDP. (2012). Mobile Technologies and Empowerment: Enhancing Human Development through Participation and Innovation. Retrieved from http://www.undp.org/content/undp/en/home/librarypage/democratic-governance/access_to_informationande-governance/mobiletechnologiesprimer.html

World Bank. (2008). *Global Economic Prospects: Technology Diffusion in the Developing World.* Washington,D. C. : World Bank.

****