Opportunities and Challenges in Digital Literacy: Assessing the Impact of Digital Literacy Training for Empowering Urban Poor Women

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Information and Communication technologies are becoming the engine of growth and development and driving the lives of people across the world. Poor urban and rural dwellers in developing countries like India face challenges owing to their low or no education and digital skills. Women face additional challenges because of gendered codes of mobility and behavior and gender based division of household work which confine them to the home. Women fail to benefit from ICTs because they lack severely in the awareness, exposure, access and skills in the use of ICT based services. If the national as well as internally defined Sustainable Development Goals have to be achieved, it is important to mainstream women in the development process and involve them in ICT related planning and usage.

I am indeed very thankful to the Ministry of Women and Child Development, Government of India for providing our research team with the opportunity of conducting the present study. The present research project entitled, ‘Opportunities and Challenges in Digital Literacy: Assessing the Impact of Digital Literacy Training for Empowering Urban Poor Women’ is a humble step towards creating awareness and enhancing the knowledge of urban poor women to enhance their digital skills through use of smartphone, internet and online applications. We would like to thank the officials and experts of MWCD as well as reviewers who enhanced the quality of the research project through their guidance.

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I do hope that this study is able to make significant impact on the lives of women in terms of creating evidence of how women lack in digital skills and how various digital skills and use of applications can help in their empowerment.

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Executive Summary

Information and Communication Technologies (ICTs) constitute a varied set of goods, applications and services that are used to produce, store, process, distribute and exchange information. They have brought a revolution in the way information is produced, processed, stored and distributed. The ‘new’ ICTs comprise of computers, mobile phones, satellite and wireless technologies and the Internet.

India has a vast potential in exploiting ICTs for development as more than 940 million homes have access to television, 1.19 billion people use mobile phones and almost 445.96 million people have access to the internet (TRAI, 2017). However, this progress lags behind several other countries as depicted by the low rank of India in the ICT Development Index (IDI) placed at 134th position out of 176 countries. The factors for such low ranking are low ownership of computers and other digital devices, poor bandwidth, internet connectivity and poor performance in mean years of schooling and tertiary education. The other confounding factors are high illiteracy rates of people (25-30%) and rampant digital illiteracy of people (90%) (DEF, 2016). Due to a combination of all these factors, people at large especially the urban and rural poor have failed to benefit from the ICT revolution.

One of the major challenges is the digital divide across various sections of society such as the rich and the poor, the urban and the rural, the educated and the illiterate as well as the gender divide which is very vividly reflected in the use and access of technology. Women fail to benefit from ICTs because they lack severely in the awareness, exposure, access and skills in the use of ICT based services. Women’s ownership and access to ICTs is rather low because of several socio-economic and cultural factors such as power relations in societies. The heavy burden of household responsibilities on women works against their using ICT services. Thus incorporating the gender dimension is a necessary prerequisite for the achievement of a globally equitable information society (UNCTAD, 2014).

Many of the 17 Sustainable Development Goals (SDGs) and 169 targets goals ranging from no poverty to reducing hunger, sustainable cities, climate action, clean energy, water and sanitation, reducing inequalities among countries and fostering partnerships require a robust ICT related infrastructure, technologies and their usage. One of the targets of goal number 5 (achieve gender equality) is empowerment of women through ICTs.

The present study has therefore been conducted with the objective of examining the gender differentials in ways in which poor women and men access, use and experiences various ICTs. Another objective of the
study was to examine the existing knowledge, digital skills, barriers and problems faced by poor women in the use of ICTs. Designing and implementing a need based training module to train women in the use of ICTs was another objective of the study. The final objective was to assess the potential impact of training on the digital literacy skills as well as uptake of ICT based initiatives available to women and their consequent impact on women empowerment.

The study was conducted in slum and rural areas of the National Capital Region of Delhi, India where a large majority of the urban poor reside. A sample size of 400 urban poor women and men was taken, divided equally amongst the 11 districts and two villages of Delhi thus, making a sample size of about 30 respondents from each of the selected slums and villages. A training module comprising of multi-media mix was developed and field-tested to meet the various needs of women. Training in digital literacy was imparted to 100 women in four batches comprising 25 women per batch. Data was collected for both men and women across the selected slums and villages using quantitative as well as qualitative tools.

The key findings of the study are as follows:

- The gender differentials in literacy and education were much more apparent at the two extremes of the continuum. This is reflected by more women (36%) being illiterate as compared to men (23%). Conversely more men (19%) had studied graduation or above as compared to only 8% women.
- About 75 percent males were either self-employed or in service (drivers, attendants, helpers) and the rest were unemployed but took up odd jobs when available. By comparison, 69 percent women were housewives while the others were either self-employed or were worked as domestic helpers.
- 90 percent of the males had mobile phones for their personal and exclusive use. Out of them, 59 percent had a smartphone. Further 58 percent of the men had internet connectivity on their phones. By comparison, a lesser number (58%) of females had their own mobile phones out of which only 22 percent had a smartphone. Further, only 18 percent women had internet connectivity on their phones.
- WhatsApp, YouTube, Facebook, Google Maps and Google were the most popular and highly acceptable applications which were downloaded by 48-58 percent men as compared to only 11-30 percent women. About 51 percent men used WhatsApp daily, only 13 percent women did so. Almost 24 to 50 percent males used Facebook, YouTube and Google; hardly 3-8 percent women did so.
The FGDs revealed that though less number of women had downloaded applications on their phones, but more women as compared to men were eager to know and learn and about the applications which could improve their lives.

When asked about the willingness to participate in digital literacy training, surprisingly, a large majority of people, 76 percent men and 84 percent women said they were willing to take part in training programs.

In the training, a comparison of pre and post training scores showed significant gains in all the domains of digital literacy skills.

After the training, the number of women who could independently use their phone for making and receiving calls increased to 90 percent (as compared to 74 percent earlier) whereas the rest 10 percent said they would still need help. A significant difference was found in pre and post training scores in performance of women with respect to usage of mobile phones for making and receiving phone calls, $\chi^2(2, N=100) = 10.894$, $P=0.004$.

The number of women who were able to use internet based applications independently increased to 71 percent as compared to 52 percent earlier. About 20 percent women said they could use but still needed help at least initially.

Almost 81 percent women could send and receive SMS after the training as compared to 59 percent earlier. The major challenge in training the women on how to send, receive and read messages was the low literacy level of women.

After the training, 88 percent women could use the calendar and set a reminder on the mobile as compared to 68 percent before the training. These differences in scores were statistically significant.

Before the training as many as 55 percent women knew how to use WhatsApp application independently whereas 11 percent could use it with the help of their children. 34 percent women said they were not able to use WhatsApp at all. After the training, almost 72 percent women could use WhatsApp application independently including forming groups but 16 percent said they would need help from someone. Only 12 percent women as compared to 34 percent earlier said they would not be able to use WhatsApp even after the training.

63 percent women said they had learnt about how to make and receive video calls independently, 37 percent did not know how to do so. After the training, a larger number of the women (77 percent) could make video calls on their own, 9 percent said they would still need help and the rest 14 percent said they would not be able to use the facility on their own. Somebody who would connect the call for them and they would talk.
• Approximately 78 percent women were able to search information independently on the phones after the training as compared to 64 percent earlier. Another 4 percent said they needed help and 32 percent had no idea how to search information. These differences in scores were statistically significant.

• Before the training was conducted, only 43 percent of women knew how to use YouTube, 19 percent said they needed help and the rest 38 percent said they could not use the application. After the training session, 74 percent of women could do so independently. Another 13 percent could use it with help and the rest 13 percent could not use the same at all.

• Only 6 percent knew how to pay bills independently through PayTM and majority of women (94 percent) did not know how to use any online payment application. Only 6 percent women knew how to use BHIM application and the rest did not know how to use it. After the training was conducted, as many as 37 percent women could handle BHIM application independently while 23 percent said they would need help, another 40 percent women said they would not be able to use the application because of their limited education and the complexity of the application.

• About 10 percent women knew about the Online Registration System application and had used it independently while 80 percent did not know about the application at all. After the training, 40 percent women said they would be able to use the application independently, while 29 percent still felt that they could use the application with someone’s help. Another 31 percent said, it would not be possible for them to use the application.

• Majority of the women (91 percent) had not heard about the Himmat Plus app and did not know how to use it; only 7 percent were using this application independently. After the training, 54 percent women said that it was easy to use the safety app and they could use the application independently. There were still 28 percent women who felt they would require help to use application whereas 18 percent said they would not be able to use the Himmat application.

• None of the women from the 100 respondents knew how to lodge an online FIR except one. After the training, about 50 percent women said that it was an easy method and if and whenever required, they will be able to do so. Several women were scared to open the app and fill up information for fear of actually lodging an FIR.

All the women reported gaining self-confidence as a result of the training as they were exposed to newer services and methods which could make their lives easier and take more informed decisions. They said more such training programs should be organized for women by women because they hardly
get opportunities like this one. Some women said they have been thinking of buying smart phones for themselves and would like to do so now.

The study has shown that when contextual training based on a thorough analysis of the Practical and Strategic Gender Needs of women is imparted to women in safe, secure and familiar environment, it is well accepted by them with eagerness and enthusiasm. It is important to provide women access to digital devices and support services such as internet connectivity at affordable prices to enable them to use the digital technologies. It is also important to have separate training spaces for women with trainers familiar in the local language who can deliver the training at the level of the women. This is important because the primary survey has shown lack of willingness of women and feelings of embarrassment in learning in the premises of training centers meant for children. This implies that even if the venue is same as that for training of children, the time slots for training women or men need to be different and meant entirely for them to make them feel comfortable. Since the use of digital technologies has all round impact on various domains of education, health, employment and environmental sustainability; such training can actually help women to improve their confidence and enable them to improve the quality of their personal and occupational life. Women can also use digital skills to look for more employment options and opportunities, can enhance their own businesses and enhance their income ultimately leading to improved quality of life as well as to their own empowerment. It is therefore important to move on from ‘Digital Divide’ to providing ‘Digital Opportunities’ to the most marginalized sections of society including poor urban and rural women.
Chapter-1

Introduction

During the last two decades, there has been lot of interest and experimentation in the potential of Information and Communication Technologies (ICTs) worldwide for achieving socio-economic development. Information and communication technologies have brought a revolution in the way information is produced, processed, stored and distributed. Information and Communication Technologies include devices, networks, services, and applications. These can range from internet-based technologies and sensing tools to other technologies that have been around for much longer, such as radio, telephones, mobile phones, television and satellites. Figure 1.1 depicts the various types of information and communication technologies which comprise of some older technologies (radio and television) as well as new technologies (mobile phones, computers and internet enabled technologies).

![Figure 1.1 Types of ICTs (Source: FAO-ITU, 2018)](image-url)
ICTs have a tremendous scope of alleviating problems of developing countries. Studies conducted across different countries have shown that use of ICTs can work as catalysts to enhance the rate of change in different areas including women empowerment. The increased use and penetration of ICTs across the globe presents several new opportunities for development.

India too has a vast potential in exploiting ICTs for development as more than 940 million homes have access to television, 1.19 billion people use mobile phones and almost 445.96 million people have access to the internet (TRAI, 2017). However, looking at international scenario, India ranks as low as 134 in ICT Development Index ranking out of a total of 176 countries. The performance of India is low across most sub-components as seen in Figure 1.2.

\[ \text{Figure 1.2 ICT Development Index: Comparing India’s performance with reference value} \]

(Source: ITU, 2017)

A comparison of IDI scores of developed countries with different developing countries of World, Asia and the Pacific on a scale of 1-9 as seen in Fig 1.3, which shows that whereas most developed countries are placed at about 7.5, India is placed at about 3.
A closer look at the components and sub-components of the IDI shows that the performance of India is somewhat better in mobile phone subscriptions, internet bandwidth/user and secondary enrolment rate. By comparison, the performance is poor in mean years of schooling, tertiary enrolment, broadband subscriptions, number of internet users and households with internet connectivity. In addition, 25% of Indians still lack literacy skills and almost 90% lack digital literacy (DEF, 2016). Due to a combination of all these factors, people at large especially the urban and rural poor have failed to benefit from the ICT revolution.
1.1 The current status of mobile telephones and internet use: The Gender divide

On one side Information and Communication Technologies (ICTs) are being recognized as the engine for growth and development, on the other hand, there are various challenges which limit their potential and benefits. One of the major challenges is the digital divide across various sections of society such as the rich and the poor, the urban and the rural, the educated and the illiterate as well as the gender divide which is very vividly reflected in the use and access of technology. Such divides often overlap with each other. As an example, rural women have a dual disadvantage in accessing and using ICTs owing to their geographic location, limited resources as well as gender. Women fail to benefit from ICTs because they lack severely in the awareness, exposure, access and skills in the use of ICT based services.

The number of mobile phone users in India has been continuously increasing over time while in 2013, there were more than 524 million mobile phone users, which increased to 730 million in 2017 and are expected to touch 831 million in 2019. However, according to GSMA intelligence consumer survey 2017, there is gender gap in mobile ownership pattern. On the whole, only 65 percent women in India own mobile phones as compared to 84 percent men. The same study has also shown that 78 percent of people (males and females) use mobile phone for calling purposes. Only 35 percent females, as compared to 46 percent males are able to send or receive SMS. The gender gap in internet connectivity on mobile phone is clearly visible by the fact that about 31 percent males have internet connections on their mobiles as compared to only 13 percent females. Of this population with access to internet on the mobile phone, only 50 percent males as well as females browse the internet, use social media or download and use different mobile applications. About 57 percent people (males as well as females) use internet for making video calls. The data clearly points towards low internet connectivity of both males and females and still lower usage of internet based applications, reflecting poor digital literacy skills of both males & females (GSMA, 2017).

1.2 Reasons for gender gap: Lower status of women in India

In most developing countries including India, women perform the triple roles of reproduction and household, production, and community participation work. They struggle to fulfill their Practical Gender Needs (food, freshwater, fuel, fodder & fiber) and in process their Strategic Gender Needs of education, skill development, income generation, decision making & leadership get thoroughly neglected (Moser, 1980). Despite putting in long hours of work within and outside the home, women are given a secondary status within the household and the workplace due to traditional patriarchal norms. The life cycle of an Indian woman depicts several forms of violence which she may experience from the womb to the tomb.
such as sex based selection, lack of education, malnutrition, early marriage, abuse, repeated childbirth, little or no medical care, financial dependence and domestic violence as well as violence outside the home. Besides women have much lower literacy level as well as digital literacy rates as compared to men and are excluded from the process of development and get marginalized by the family and society. All these practices disempower women by negative impacts on health, education, economic and political participation at various levels of decision-making. The poor status of women is well reflected by the poor performance of India as well as several other developing countries in gender related indices. The human development index (HDI) value for females in India is 0.683, whereas by comparison it is 0.575 for males (UNDP, 2017). The reasons are poor performance of women in access to knowledge, poor health status and significantly lower ability to earn money. In terms of the Gender Inequality Index, which measures inequality between men and women in terms of reproductive health, empowerment (education and number of parliamentary seats) as well as participation in labor force, India ranks a dismal 127 out of 189 countries (UNDP, 2017). In the Gender Gap Index, which measures the performance gaps in different domains between men and women, India has secured a very low rank and is placed at 108 out of 144 countries (WEF, 2018). One of the reasons for such poor performance of women is their exclusion from technology and technological processes.

1.3 Women and ICTs

Despite the benefits of ICTs to all sections of the population, women’s ownership and access to ICTs is rather low because of several socio-economic and cultural factors. Women continue to be at a disadvantage because of existing power relations in societies. The heavy burden of household responsibilities on women works against their using ICT services. Women are also less likely to own technological devices such as computers, mobile phones and internet connectivity as cultural attitudes discriminate against them (CRISP, 2011). According to the United Nations Conference on Trade and Development (UNCTAD) 2014, incorporating the gender dimension is a necessary prerequisite for the achievement of a globally equitable information society. The five ways as recommended by GSMA 2015 by which gender gap in ICTs can be eliminated or closed are:

- **Accessibility:** There is a need to address the fact that women are less likely than men to have access to quality network coverage, handsets, electricity, agents and identification documents. It is therefore important to provide access to women to hardware as well as software.

- **Affordability:** The cost of purchasing equipments such as handsets, tariffs, data plans and transaction fees needs to be affordable for women as well as men.
• **Usability and skills**: It is important to enhance the usability of devices, the ability and confidence of women to use mobile phones.

• **Safety**: Women feel safe when using a mobile phone such as, this may also include data safety.

• **Relevant**: Mobile products and services should meet the women’s need as well as men’s.

These conditions must be met if national development goals as well as internationally defined Sustainable Development Goals (SDGs) have to be met.

1.4 ICTs and the SDGs

![Sustainable Development Goals](image.png)

*Figure 1.5 Sustainable Development Goals (Source: UNDP, 2015)*

India is a signatory to the achievement of Sustainable Development Goals to be achieved by 2030 (UN summit 2015, Fig. 1.5). Many of the 17 goals and 169 targets goals ranging from no poverty to reducing hunger, sustainable cities, climate action, clean energy, water and sanitation, reducing inequalities among countries and fostering partnerships require a robust ICT related infrastructure, technologies and their usage. One of the targets of goal number 5 (achieve gender equality) is empowerment of women through ICTs. The gender gaps in literacy, education and digital literacy need to be reduced or closed to enable women to benefit from the ICT revolution. To increase ICT usage by women, the ownership of digital devices exclusively by women needs to increase instead of women sharing the family owned devices. Women also need training, encouragement and must feel the need to use digital skills to be able to benefit.
from the ICT revolution. In the past decade, several initiatives have been made by the government from time to time.

### 1.5 Government Initiatives

The national e-governance plan was started by the Government in 2006 and had 31 Mission Mode Projects (MMPs) encompassing health, education, taxes, property etc., has been revised to *e-kranti* meaning transformation in governance by the use of ICTs. The portfolio was later expanded to 41 MMPs to include social sector projects such as women and child development, social benefits, urban governance, financial inclusion, *e-bhasha* to name a few.

The Digital India program was launched by the Government in July 2015. The main aim of the program was to ensure that government’s services are made available to the citizens electronically by improved online infrastructure, internet connectivity and universal digital literacy for digital empowerment of people.

Under the Digital India mission, PMGDISHA was launched which refers to Pradhan Mantri Gramin Digital Saksharta Abhiyan, launched in October, 2017. The objective was to make six crore persons in rural areas digitally literate across States/UTs by reaching around 40 percent rural households and covering at least one member from every eligible household by 31st March, 2019.

Recently, the Government has also started the National Digital Literacy Mission, which by 2020 aims to impart crucial digital literacy skills to at least one member of the 147 million rural households in India and make them technologically empowered.

Some other initiatives on digital literacy have also been taken by some NGOs as well as other organizations. SEWA an organization of poor, self-employed women workers in Gujarat has ICT based programs for women, which focuses on capacity building, livelihood generation and security and knowledge sharing through the use of digital literacy. It organizes computer trainings for women and their children in the villages of nine districts of Gujarat.

However, despite many such ICT related programs, the trickle-down effect of all such initiatives to the marginalized sections of society continues to be a challenging task. Several efforts and special initiatives for women empowerment have also been made by the Government in the last six decades, to improve the status of women in society. Though women’s problems have reduced in magnitude but continue to exist posing a stumbling block in the nation’s development. To bridge the gender gaps and mainstream women in development processes, the use of ICTs is of paramount importance.
1.6 Use of ICTs by women: Disabling factors

There are several disabling factors which deter women from using the ICT based initiatives. Research studies conducted in different developing countries suggest that a combination of economic as well as socio-cultural factors act as barriers to ICT usage by women.

A study conducted in rural Tamil Nadu in 2000, on women residing in four villages showed that the majority of women were non-users of ICTs because neither did they own the infrastructure nor did they know about the internet enabled computer facilities available at kiosks in their villages (Best & Maier, 2007). Another study conducted in Jaipur, Rajasthan, has shown that though a large majority of women (78-94%) felt that the use of ICTs should empower them politically and economically, yet they as women faced several barriers in their use such as lack of competence in use of equipment, lack of training facilities and their ability to afford computer and internet services (Beena & Mathur, 2012). Women, often did not make use of ICTs meant to empower them because of several obstacles such as lack of self-confidence, low self-esteem, poverty, illiteracy, lack of exposure and training in modern technology (Sharma et al., 2015).

The scenario at the global level is no different especially for the developing world. A study conducted in Sri Lanka on the use of digital technology has shown it was not the mere availability of ICT related infrastructure, but other factors such as caste, religion, gender, income, education and age, which played a major role in the access and use of ICTs by women and girls (Kottegoda et al., IDRC, 2012). A study conducted in urban and peri-urban areas of four countries namely Egypt, Mexico, Uganda and India has highlighted that gender norms in society often restricted women to access, use, control and afford internet services. Almost 40 percent women did not use the internet and related services due to lack of familiarity or comfort with technology. About 20 percent women in India and Egypt believed that women should not use the internet, as it was not “appropriate” for them due to their gender (Dalberg, Global Development & Intel report, 2012).

Keeping in view all these gender related barriers in the use of digital technology, all the socio-economic and cultural challenges need to be addressed to realize the full potential of ICTs. Since the impact of ICTs is not gender neutral, it is necessary to follow an engendered approach to ICT based projects. To bridge the gender divide in the use of ICTs, special focus needs to be given on removing the socio-cultural constraints to the use of technology by women and build their digital capacity. This would also require change in mindset of families towards technology use by women and creation of safer internet usage enabled spaces. ICT can play the role of a catalyst in behavior change and empowering various sectors of the society especially women. Special attention needs to be given to poor women residing in peri-urban, slum and rural

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women
areas as they lag behind their urban counterparts in education, economic, health and political leadership domains. It is important to note that the goal number five of the SDGs is focused on achieving gender equality and empowering all women and girls as well as reducing inequalities within and among countries. According to a popular saying, ‘If you educate a man you educate one person, but if you educate a woman, you educate the entire family’. This holds true of digital literacy as well.

1.7 Digital training and women empowerment

In order to address the gender based and other inequalities and inequities in society and empower women, it is important to tap the tremendous potential of ICTs. Isolated ICT initiatives in different parts of the world have shown how such programs can benefit women. For example, when training in digital literacy was provided to 100 women comprising of farmers, business owners and the unemployed in Rwanda, Africa, it led to increased confidence in women as they could use computers, keep records of accounts themselves and could enquire about the market prices of products on their own. Similarly, the mission of imparting digital skills to the rural poor from Rajasthan, Tripura and Andhra Pradesh, as part of the National Digital Literacy Mission of the Government of India, wherein 52% of the trainees from 1669 households were women who were either homemakers, students or stay at home mothers reported a drastic change in their empowerment. Many women became self-sufficient as they could access MGNREGA information while some women got jobs as teachers. The women reported a sense of inclusion and confidence on themselves (Digital Empowerment Foundation, 2013).

Another study conducted in Andhra Pradesh highlighted that ICT leveraged information/knowledge could create digital opportunities and make a difference in the lives of Indian women, and over time, helped bridge the digital divide (Mathur & Karan, 2010). Such initiatives could also create opportunities for women in the poorer areas of India, narrow the information gap between rural and urban areas, and enhance the ease of understanding of government operations even among the not so literate population.

Vodafone’s initiative ‘Connected Women’ has estimated 5.3 million women could be lifted out of illiteracy through mobile technology by 2020. Such technology could reduce violence against women and enable women to seek new opportunities leading to an increase in economic activity estimated at 3.4 billion US dollars. ICT enabled initiatives could also help women in setting up micro-enterprise work and self-help groups, give access to market prices, connect to buyers, lead to increased farm productivity and improve livelihoods. Thus, for ICT based initiatives to be successful it is important that all sections of the
population including women use them. In other words, it is very important to enhance the digital literacy skills of women especially from the poor sections of society who are often excluded from the development benefits due to their gender, poverty, illiteracy and lack of awareness. These women are not the target audience for digital training and thus fail to avail any benefits of ICT initiatives in different sectors. Thus, empowerment of women through the use of ICTs remains a dream for them.

The present study is being conducted to examine if capacity building of poor women residing in urban areas in digital literacy skills will enable them to use the ICT based programs and derive benefit from them. There are several other objectives of the present study. One of them is to examine the gender differentials in ways that poor men and women access use and experience ICTs. Another objective was to examine the perception of women with respect to the technological and socio-economic-cultural barriers faced by them in the access and use of ICTs. The final objective of the study was to assess the impact of a need based ICT use related capacity building module and training programs conducted by other organizations for poor women on the digital literacy skills of women as well as the uptake of ICT initiatives in different sectors and their consequent empowerment.

1.8 Objectives

- To document the currently functional ICT initiatives by different organizations for empowerment of urban poor women in Delhi.
- To examine the gender differentials in ways in which poor women and men access, use and experience various ICTs.
- To examine the existing knowledge, digital skills, barriers and problems faced by poor women in the use of ICTs.
- To design and implement a need based training module to train women in the use of ICTs.
- To assess the potential impact of training on the digital literacy skills of women and the uptake of ICT based initiatives available to women and their consequent impact on women empowerment.
Chapter-2

Methodology

The study has been conducted in three phases. The first phase involves the exploratory component of the study comprising of collection of base line data with respect to gender differentiated awareness, access and use of digital technologies and devices among poor families across various districts of Delhi. The barriers faced by men and women in ICT usage, training opportunities available and gender differentiated needs of ICT usage were also investigated. The second phase of the study encompassed the development of a contextual and need based training module for women, to enable them to use ICT enabled initiatives of importance to them. After pre-testing, the module was imparted to about 100 women from poor urban and rural communities in Delhi. Suitable communication aids were designed and pre-tested for the purpose. The third phase of the study involved the testing of the hypothesis with respect to the potential impact of the training module on the uptake of ICT based programs and initiatives by women. Other training programs for poor women conducted by different organizations were also identified for their impact assessment to get a more holistic picture of the impact of training and capacity building activities on women. It was envisaged that the study will help create evidence of gender- based differentials in the access to and usage of ICT based services and initiatives it also enabled to examine the impact of suitable training on uptake of ICTs among women from lower socio-economic strata in society. The methodology of the study has been presented in Figure 2.1.
Figure 2.1. Activities comprising each phase of the study (Phase I-1 & 2, Phase II-3, Phase III-4 & 5)

The detailed methodology of the study has been discussed under different heads:

- Universe of the study
- Sampling frame
- Locale of the study
- Sampling procedure
- Sample size
- Tools of data collection
- Development of capacity building module
- Impact assessment of the module
2. I Universe of the study: The universe of the study includes poor urban and rural men and women residing in Delhi, who together with their families comprise almost 20 percent of the population of Delhi.

Figure 2.2 Administrative Divisions of Delhi (Source: Statistical profile of Delhi, 2014)

2. II Sampling Frame:

2. II.1 Sampling Procedure:

2. II.1.1 Selection of Locale: The study was conducted in slum and rural areas of the National Capital Region of Delhi, India where a large majority of the urban poor reside. According to Census of India 2011, there were 3.1 million slum dwellers in Delhi in 2011, expected to number 3.7 million by 2017 comprising about 20% of the city’s population (Statistical profile of Delhi, 2014). This figure actually under represents the slum population of Delhi as well as whole of India because of not considering the slum clusters with less than 60-70 households, not counting the dwellings with roofs and walls of GI sheet as slums as well as not considering the newly formed towns which do have a considerable slum population (Envis Center for Human settlements, 2013). In reality, according to the civic bodies in Delhi which handle the waste generated by people, about 49% of the total population of Delhi lives in slum areas, unauthorized colonies and about 860 jhuggi-jhonpri clusters with 4,20,000 jhuggies (Times of India, October 4, 2012). Women constitute almost 46-48% of this population. In addition, there are 112 village clusters in Delhi, which are home to more than four Lakhs population (Primary Census Abstract, NCT of Delhi, Census of India,
2011). Though this population accounts for only about 2.5 percent of the total population of Delhi, yet it is important since it is representative of the kind of social, economic and cultural barriers in the use of ICTs by the rural population of other states too. The slum as well as the rural population in cities generally has much lower levels of literacy, education as well as access to digital resources including own mobile phones, computers, access to internet services as well as little or no digital skills required for the use of ICTs. All these factors act as barriers to the usage of ICT based programs.

2. III Selection of Sample:

2. III.1 Sampling Technique

A two-stage sampling design was used to select the sample for base line data collection. In the primary stage, one slum from each of the eleven districts of Delhi totaling to 11 slums were selected for the study. The secondary stage comprised of selecting the respondents for the study.

2. III.1.1 Primary Sampling Units (Selecting the slum): Delhi was divided into 11 districts; one slum was selected from each of these districts to function as representative sample of Delhi for the purpose of conducting the primary survey. The purpose of the survey was to examine the gender differentials in education, digital literacy as well as access to digital devices. Another purpose was to access the digital literacy skills of men and women, knowledge and use of various ICT based initiatives. An equal representation of male and female respondents was taken from each slum and village.

In order to randomize the choice of the slum, the list of slums was taken from the Delhi Urban Shelter Improvement Board (DUSIB). From the list given by DUSIB, five slums were selected from each district randomly using draw of chits. Out of the five slums, one slum was finally selected for the study based on its accessibility by public transport, contact with the local leaders and presence of an NGO which could facilitate entry to the slum as well as the survey work.

2. III.1.2 Secondary Sampling Units (Selecting male and female respondents): For this purpose, systematic circular sampling technique was being followed. Information regarding the total number of houses in the selected slum was obtained from the formal/informal local leaders of the slum. The selection of the first house for data collection was randomized by the draw of chits numbered one to ten. Thereafter every nth house was selected depending upon the number of households in the slum so that the total number of selected households in each slum was 15. This process ensured that the selected households were geographically scattered in the selected slum and gave a fair representation of that area. Data was collected
from the females of the selected households. However, if in a house the woman was not available due to some reason, women from adjoining house were taken. Similarly, if the men were available in these households, they were also chosen as the sample of the study. But in many cases, men were not available at home as they had gone out for employment to other purposes, so other men in the slum were selected as respondents in consultation with the local leaders.

Data was collected from both men and women across the selected slums and villages. Information was collected on their education, occupation, family background, access and possession and use of digital equipment, level of digital literacy, use of cyber cafes and other training centers, use of mobile and computer related technology for household management, educational and other needs as well as barriers faced by them in usage of ICT based initiatives.

The data collection process was spread over a period of seven months from January 2018 to July 31, 2018. The data was collected from all the eleven districts and two villages of Delhi. As already stated, one slum cluster was selected from each of the 11 districts of Delhi.

The districts, slums and villages from where data collection was undertaken are as follows:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the District</th>
<th>Name of the selected slum</th>
<th>Number of Households</th>
<th>Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>North Delhi</td>
<td>G block, Jahangir Puri</td>
<td>1775</td>
<td>25735 sq m</td>
</tr>
<tr>
<td>2</td>
<td>South Delhi</td>
<td>Shastri Market, Moti Bagh</td>
<td>943</td>
<td>37500 sq m.</td>
</tr>
<tr>
<td>3</td>
<td>East Delhi</td>
<td>Chanderpuri Camp, Seelampur</td>
<td>445</td>
<td>45906 sq m.</td>
</tr>
<tr>
<td>4</td>
<td>Central Delhi</td>
<td>Kali Bari, Gole Market</td>
<td>161</td>
<td>3074 sq m.</td>
</tr>
<tr>
<td>5</td>
<td>Shahadra</td>
<td>Jain Mandir, Dilshad Garden</td>
<td>841</td>
<td>14025 sq m.</td>
</tr>
<tr>
<td>6</td>
<td>South East</td>
<td>Indira Camp, Andrews Ganj</td>
<td>586</td>
<td>8798 sq m.</td>
</tr>
<tr>
<td>7</td>
<td>South West</td>
<td>Shankar Camp, Moti Bagh</td>
<td>86</td>
<td>800 sq m.</td>
</tr>
<tr>
<td>8</td>
<td>North East</td>
<td>Mansarover Park</td>
<td>557</td>
<td>17600 sq m.</td>
</tr>
<tr>
<td>9</td>
<td>West Delhi</td>
<td>Prayog Vihar, Hari Nagar</td>
<td>290</td>
<td>8968 sq m.</td>
</tr>
<tr>
<td>10</td>
<td>New Delhi</td>
<td>Nepali Camp, Vasant Vihar</td>
<td>686</td>
<td>13600 sq m.</td>
</tr>
<tr>
<td>11</td>
<td>North West</td>
<td>K- Block Jahangir Puri</td>
<td>652</td>
<td>14212 sq m.</td>
</tr>
<tr>
<td>12</td>
<td>Village 1</td>
<td>Kusumpur Pahadi, Vasant Vihar</td>
<td>4904</td>
<td>173251 sq m.</td>
</tr>
<tr>
<td>13</td>
<td>Village 2</td>
<td>Gondhi Village, Krishna Nagar</td>
<td>1108</td>
<td>11430 sq m.</td>
</tr>
</tbody>
</table>
To cover the rural population of Delhi, the list of villages in Delhi was taken from the Delhi Municipal Corporation. Five villages were randomly drawn each from the North West and South West districts since 85% of the villages are located in these districts as shown by the following table. Out of the five villages, one village each was selected from each district (as shown in the table above) based on the same criteria cited for selection of slums (accessibility, contact point and presence of NGOs).

**Table 2.1 Distribution of villages in different districts of Delhi (Source: Statistical profile of Delhi, 2014)**

<table>
<thead>
<tr>
<th>Region of Delhi</th>
<th>Number of villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCT of Delhi</td>
<td>112</td>
</tr>
<tr>
<td>North West</td>
<td>52</td>
</tr>
<tr>
<td>North</td>
<td>4</td>
</tr>
<tr>
<td>North East</td>
<td>9</td>
</tr>
<tr>
<td>New Delhi</td>
<td>-</td>
</tr>
<tr>
<td>Central</td>
<td>-</td>
</tr>
<tr>
<td>West</td>
<td>2</td>
</tr>
<tr>
<td>South West</td>
<td>41</td>
</tr>
<tr>
<td>South</td>
<td>3</td>
</tr>
</tbody>
</table>

The location of selected areas is shown by the following maps:
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

Location of study area

G Block, Jahangir Puri
Shastri Market, Moti Bagh
Chander Puri Camp, Seelampur
Indira Camp, Andrews Ganj
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

Location of study area

Nepali Camp, Vasant Vihar
Jain Mandir, Dilshad Garden
Kusum Pur Pahari, Vasant Vihar
K-Block, Jahangir Puri
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

Location of study area

Kali Bari, Gole Market

Gondhi Village

Shanker Camp, Moti Bagh
2. IV Sample size for assessing awareness

A pilot survey was conducted on 60 slum households to assess the knowledge and awareness of males and females about knowledge, access and use of ICTs. The parameter selected was the use of any internet based application in the last three months on the mobile phone at any time of the day by men and women on any digital device which was either owned, borrowed or on rental. It was observed that almost 54 percent of the respondents had used an internet based application. Based on the pilot survey, the sample size of the study was statistically defined using the formula:

\[ n = \frac{t^2p(1-p)}{m^2} \]

Where:  
- \( n \) = required sample size  
- \( t \) = confidence level at 95% (standard value of 1.96)  
- \( p \) = estimated/observed percentage of the parameter (use of internet based application in the last three months)  
- \( m \) = margin of error at 5% (standard value of 0.05)

Substituting the values in the formula

Thus, \( n = 1.96 \times 1.96 \times 0.54 \times 0.46/0.05 \times 0.05 \)

\( n = 381.7 \)

Adding 5% to the above value for accounting for attrition and contingencies, the final sample size was taken as 400 respondents. The sample size of 400 urban poor women was divided equally amongst the 11 districts and two villages of Delhi thus, making a sample size of about 30 respondents from each of the selected slums and villages.
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

Figure 2.3 Sample size for the study

Total: 11 Districts
15 men +15 women= 30 respondents from each district = 330

2 Villages
15 men +15 women= 30 respondents from each village
Total=330+60=390 ( Rounded off to 400 respondents)

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37
2. Sample size for capacity building training of women:

In order to impart digital literacy to women in the slum areas, a common accessible area was required with seating and projection facilities. Most of the slums visited had very narrow lanes and small houses and did not have such digital literacy facility. At one or more places, private training centers were available to impart computer related training to children. At some places, such centers were present but were found to be closed during our visits. When we enquired, about the reasons from the local people and leaders, they said that the centers were shut either due to lack of trainers, funds or for unknown reasons.

Alternative opinions were therefore explored. The Gender Resource Centers located across different districts in Delhi were found to be a suitable option. The Gender Resource centers are an initiative of the Government and are present all over Delhi to cater to the education and training needs of women living in slums and related settlements in various areas in Delhi. Permission letters thereafter were written to several GRCs which were easily approachable from the institution. In charges of two GRCs finally responded and the training program was discussed in detail with them. These GRCs were CASP Delhi Unit, Madanpur Khader and Sakaar Outreach, Meethapur in Badarpur. The personnel were contacted and they readily agreed to hold the training program in their premises. They were requested to provide for logistics such as seating space, projector facility, electricity connection and internet facility. They were also asked to help the research team in selecting 100 women for the training and four batches of 25 women each. The women were to be informed of the training in advance to get a good response.

The capacity building module for women was spread over a period of three days. The first day involved rapport formation with women, telling them the purpose of the training and helping them download selected applications on their phones. The next day’s involved the actual training program. The selection of trainees was done considering a number of factors such as their present digital skills, the willingness of the women and their families to attend the training program and the regularity of women in attending other programs at the GRC. Inputs were taken from the GRC staff and the local community leaders for the selection. The potential trainees comprised of both slum and rural women living in the areas adjoining the GRC. The GRC staff helped the team in explaining the advantages of training women in digital skills. The families were then asked to depute one woman for undergoing the training. Only the families who were willing to let their women participate were selected for the training program.
Preferences were given to the following:

- Women who had access to a smartphone
- Willingness of family and women themselves to take part in the training
- Women who possess basic literacy skills in 3R’s – Reading, Writing and Arithmetic
- Currently or formerly using any one form of internet based application

The help of a local counselor were taken to look into any problems or dissent arising out of selection of women for training. Since most women had very limited literacy skills, had little exposure to digital literacy and related training, designing a need based capacity building program was a real challenge. It was necessary to assess if the capacity building program made any difference in the digital literacy skills of the poor urban women. The hypothesis of the study is as follows:

Ho: There was no difference in the pre and post training digital literacy scores of the poor urban women.

Hₐ: There was a significant difference in the pre and post training digital literacy scores of the poor urban women.

A pre and post training schedule was designed to gather the data of awareness, knowledge and skills of women in mobile related digital literacy skills. Frequencies and percentages were used to examine the change in digital literacy as a result of the capacity building program. Chi square analysis was used to assess if the differences between pre and post training scores were significant.

2. VI Tools for data collection

In the first phase to collect baseline data for the study both qualitative as well as quantitative tools were used. The quantitative tool comprised of a detailed interview administered questionnaire. The qualitative tools comprised of observations, focus group discussions, and in-depth interviews.

2.VI.1 Interview administered questionnaire was used to study gender differentiated digital literacy skills, their ownership of digital devices, awareness, access to and use of mobile based services and applications and ICT related initiatives, their participation in training, the various barriers faced in the use of ICT related services (Annexure 1). The interview schedule was developed keeping in mind the objectives of the study. An extensive review of literature was undertaken for the same. Experts working in the field of ICTs were also consulted. The interview schedule was pre-tested on 60 urban poor men and women, from randomly selected slums/JJ clusters in Delhi to test its efficacy and appropriateness. Mock
tables were generated to see the format of the data generated. Based on the experience of conducting the pilot survey and the mock tables, that were generated, some changes were required in the questionnaire. It was felt that the questionnaire was rather lengthy, some questions were repetitive and some terminologies were not clear to the respondents and needed to be simplified. All these changes were incorporated in the questionnaire to generate the final copy.

The first section of the questionnaire included questions related to education, occupation, age and income profile of the respondents. The second part dealt with ownership, access to and usage of digital devices and applications as well as, type of internet connectivity. The third part focused on the reasons for non-usage of digital services, participation in digital literacy training, and barriers faced in the usage of ICT related services. Their suggestions towards enhancing the use of digital devices and ICT related problems especially by women were also sought.

2. VI.2 Qualitative tools

Along with quantitative tools a number of qualitative tools were being used for data collection. The qualitative data was collected by observations and PLA (participatory Learning and Action) tools such as focus group discussions, and in-depth interviews. Guidelines for conducting FDGs In-depth interviews with male and female respondents were developed (Annexure III). Data triangulation was done to assess and analyze the problems faced by women in the use of digital device and ICT based programs and services.

In order to examine the impact of the capacity building module on women a skill assessment tool was developed in terms of use of digital devices, various applications and ICT based program. The same was administered to the women trainees before and after the completion of training. Further recall was taken three weeks after the training program in terms of their skills and level of usage of digital devices. Their doubts and hesitations with respect to the use of various applications were also clarified at this stage.

2. VII Development of the Capacity Building Module

Based on the survey findings as well as review of literature, a suitable training module was designed with the objective of building the capacity of women to use digital devices (mobile phones) and various ICT
based initiatives. A training module comprising of multi-media mix was developed and field-tested to meet the various needs of women.

To arrive at various applications of ICTs suited to the needs of urban poor intensive brainstorming and mind mapping sessions were held. Gender analysis of their needs was undertaken using Moser’s framework which classifies women’s needs into Practical Gender Needs (food, water, fuel, household related, sanitation) and Strategic Gender Needs (education, skill development, decision making, income generation, etc). Besides, the findings of the primary survey which highlighted their perception of women towards their own digital needs were considered to finally derive the most important components of digital literacy related needs of the urban poor women.

These have been depicted in Figure 2.4.
Figure 2.4: Applying digital skills to various sectors to meet PGN and SGN of women and mind map (source: Primary survey and Brainstorming sessions)
Selected components from the above were included in the training and capacity building program. It is important to mention that all the components could not be included due to limitations of resources and time. The components which have been selected for the inclusion in capacity building program are:

1) General uses of the Mobile phone usage for day to day calling and receiving phone calls, SMS, photography, use of calendar, setting alarm etc.
2) Making contacts through selected social media (WhatsApp)
3) Information searching related to diverse issues—health, education, nutrition, beauty and fashion, Government schemes etc.
4) Household and personal management (payment of bills, filling of forms online, LPG booking, checking bank accounts, availing benefits of government schemes, etc.)
5) Admission to educational institutions especially schools, EWS category admissions, lateral entry to schools and seeking information about the same
6) Seeking employment
7) Entrepreneurship/ income generation
8) Use of selected mobile based applications for safety of women, financial management, health care etc.

A multi-media approach was used for the capacity building program comprising of the following: Ice breaking games, flashcards, short films, hand puppets, songs and parodies and Power point presentations.

In addition, specially designed booklets with information on digital literacy skills were given to the women to function as ready reminders and further clarify the doubts. Environment building tools made were also used such as banners, posters and badges, danglers to provide for the right context to the program.

The training was delivered using interactive lectuette, power point presentations, demonstration, hands on exercises and evaluation exercises. Role play and short films were used to give preliminary knowledge and motivate the audience followed by question and answer sessions.

Skill assessment tool was designed for the purpose of assessing the change in behavioral intent as well as skills of the poor women to various aspects of digital literacy, before and after the training. The tool was also administered to the women three weeks after the training to assess their retention. This tool helped to gauge the impact of digital literacy related training on ICT usage by poor women to provide evidence for out-scaling such activities.
2. VIII Data processing

In accordance with the kind of information and data collected, the data was subjected to qualitative as well as quantitative analysis.

2. VIII.1 Quantitative Data: The quantitative data was condensed into purposeful and useable categories through coding and tabulation. Coded Data was entered in Microsoft Excel and also exported to SPSS. The data was analyzed using suitable statistical techniques. Frequencies, percentages and coefficients were used to examine relationship among variables. Readable figures and charts were generated from the data for effective presentation.

For the purpose of examining the usefulness of the training and capacity building module, pre and post data scores were analyzed using chi square.

2. VIII.2 Qualitative Data: The qualitative data obtained from Focus Group Discussions and in-depth interviews was integrated with quantitative data to get deeper insights and clearer picture of various issues.
2. IX Study Design

The study design of the present study has been presented in fig 2.5

![Study Design Diagram](image_url)

*Figure 2.5 An overview of the study design*
2. X Organizational framework

![Organizational setup for the research study](image)

*Figure 2.6. Organizational setup for the research study*
Chapter -3

Review of Literature

A detailed review of available literature was undertaken under the following heads:

3. I. Current scenarios of gender differentiated digital literacy

3. II Use of Digital Literacy by women for different sectors
   3. II.1 Health
   3. II.2 Education
   3. II.3 Income Generation
   3. II.4 Miscellaneous

3. III. Barriers faced by women in ICT access and usage

3. I Current scenarios of gender differentiated digital literacy

During the last two decades, there has been lot of interest and experimentation in the potential of Information and Communication Technologies (ICTs) worldwide for achieving socio-economic development. Studies conducted across different countries have shown that use of ICTs can work as catalysts to enhance the rate of change in different areas including women empowerment. India too has a vast potential in exploiting ICTs for development as more than 1.19 billion people use mobile phones and almost 445.96 million people have access to the internet (TRAI, 2017). Besides, 25% of Indians still lack literacy skills and almost 90% lack digital literacy (DEF, 2016). Due to a combination of all these factors, people at large have failed to benefit from the ICT revolution.

According to GSMA intelligence consumer survey 2017, only 65 percent women own mobile phones as compared to 84 percent men. The same study has also shown that 78 percent of people use mobile phone for calling, only 35 percent females, as compared to 46 percent males send or receive SMS. About 31 percent males have internet connection on their mobiles as compared to only 13 percent females. Only 50 percent males as well as females browse the internet, use social media, or download and use different mobile applications. About 57 percent people (males as well as females) use internet for making video calls. The data shows low internet connectivity of both males and females and even lower usage of internet based applications, reflecting poor digital literacy skills of both males & females (GSMA, 2017).
The poor status of women is well reflected by the poor performance of India as well as several other developing countries in gender related indices. The human development index (HDI) value for females in India is 0.683, whereas by comparison it is 0.575 for males (UNDP, 2017). The reasons are poor performance of women in access to knowledge, poor health status and significantly lower ability to earn money. In terms of the Gender Inequality Index, which measures inequality between men and women in terms of reproductive health, empowerment (education and number of parliamentary seats) as well as participation in labor force, India ranks a dismal 127 out of 189 countries (UNDP, 2017). In the Gender Gap Index, which measures the performance gaps in different domains between men and women, India has secured a very low rank and is placed at 108 out of 144 countries (WEF, 2018). To bridge these gender gaps the use of ICTs is of paramount importance.

In order to address the gender based and other inequalities and inequities in society and empower women, it is important to tap the tremendous potential of ICTs. Isolated ICT initiatives in different parts of the world have shown how such programs can benefit women. ICTs in different sectors have many national and international initiatives which are discussed below:

3. II.1 ICTs in Health

In this unit, the ICT based initiatives which pertain to the health of the entire family have been enlisted. Though these may cater to various socio-economic-strata, the ones especially suitable for poor families including poor women have been identified. The programs enlisted below have been arranged in chronological order from recent to earlier years.

3. II.1.1 National Initiatives

3. II.1.1.1 General Health Monitoring

- **Stree Swabhiman**: It was launched on 27th January, 2018 by Union Information Technology and Electronics Ministry in partnership with Common Service Centers (CSC). It helps in creating awareness about menstrual health. Under this initiative, 207 micro sanitary pad manufacturing units have been set up already and are operated by women entrepreneurs. It also generates employment for 8-10 women per unit. Also, Village Level Entrepreneurs distribute the pads to almost 1,000
girls in primary and secondary schools in their village, encompassing girls from 7th to 12th grade. Stree Swabhiman Project is conceptualized to create avenues for the rural and semi-urban women to become self-reliant and also progress towards a healthy eco-friendly lifestyle.

- **MeraAspataal Application**- This app was launched by government of India on 27th, August, 2016 and revised on 26th, April, 2017 and has more than 5000 downloads. The aim is to capture the patient’s feedback for the services received at the hospital through user friendly multiple channels such as SMS, OBD (Outbound dialing). The feedback can be submitted in seven different languages for the hospital visited in last seven days. This feedback is helpful for government to take various decisions in pertaining to quality of healthcare delivery across the country (Press Information Bureau, 2016).

- **Online Registration System**- It was launched on July 2015 by the Government of India, to improve the of services for citizens for taking online registration & appointment with doctor, payment of fees, online viewing of diagnostic reports, enquiring availability of blood online etc. in various government and private hospitals. Over 100 hospitals are on board and about 9 lakhs appointments had been transacted online till 2018. The system also helps in improving patient management services at registration and appointment desk. The user needs to verify the Aadhaar Number, then select desired hospital and department and select date of appointment. After all this is done the person receives SMS for appointment (The Hans India, 2018).

- **National Health Portal**: It was launched on November 14, 2014. The aim of this portal is to provide access for authenticated health information to citizens across the country. The National Health Portal launched the voice web services as a part of digitalization of health sector and voice-based web portal for 24X7 toll-free health services. This portal provides information and solves queries related to health, diseases, lifestyle, first aid, directory services, health programs, policies, laws and guidelines. Users need to dial a toll free helpline number 1800-180-1104 and ask about the information that they are seeking related to health. This advanced system is capable of recognizing user voice input. Presently, the voice web service is available in Hindi, English, Bengali, Tamil and Gujarati. Efforts are on to include more Indian languages in future (Ministry of Health and Family Welfare, 2015).
• **Mission Indradhanush mobile apps:** The Ministry of Health & Family Welfare launched “Mission Indradhanush” on 25th December, 2014 depicting seven colors of the rainbow, to fully immunize more than 89 lakhs children who are either unvaccinated or partially vaccinated. It provides for immunization against seven life-threatening but vaccine preventable diseases which include: Diphtheria, Whooping cough, Tetanus, Polio, Tuberculosis, Measles and Hepatitis-B. Apart from this, pregnant women are also immunized against tetanus. Mission *Indradhanush* Mobile App has been developed by Immunization Technical Support Unit (ITSU). The main objective of Mission Indradhanush App is to provide a user-friendly interface to track the progress made under Mission *Indradhanush* by health department of different states in a more comprehensive manner. It is a tool to enable data collection about the immunization rate at National/State/District levels. The content and data available through this mobile app would be beneficial for policy makers, program managers at state and district level and immunization experts. The data for each of the 201 districts is regularly updated by Mission *Indradhanush* Control Room placed at ITSU and made available through this Mobile App after each round of Mission *Indradhanush* (Ministry of Health and Family Welfare, 2015). As a result of the program, it is easier to review the progress and coverage of immunization across different states and districts because of availability of data online.

• **Sehat Saathi:** It is a rural telemedicine system that can be used to extend medical care to patients in the remote parts of the country. It was developed at Media Lab Asia at IIT Kanpur in 2007 and extends medical care to patients in the remote parts of the country. The model provides front end contact through a suitably trained non-medical person, back end support from doctors, pathologists and other health specialist for diagnosis and treatment via teleconsultation, video conferencing using computer systems. It provides the interaction with different doctors for different health problems and also provides other health professionals for diagnosis and treatment (M.V Ramana Murthy, 2010).

• **E-Hospital- The Hospital Management Information System (HMIS):** It was first launched in Gujarat in 2006. It began as a pilot in four hospitals in 2006, by March 2008 the new system became live in all 30 government hospitals across the state. It is a one stop solution which helps in connecting patients, hospitals and doctors under single digital platform. It has been implemented in
321 hospitals and 4 crore patients have been registered since September, 2015. Later, Odisha Government launched this initiative in January, 2018 where CDAC (Centre for the Development of Advanced Computing) provided the technical support (PTI, 19th January, 2018).

- **GVK Emergency Management and Research Institute:** It was a project started on 15th August, 2005, where it handled medical emergencies through a helpline number "108". It is a free service for the people via phone. It has ambulances all over India but its main hub is in Hyderabad, Andhra Pradesh and other states where it serves are Gujarat, Goa, Tamil Nadu and Karnataka. The ambulance service is known as Janani Ambulances and till May 2012 total of 792 vehicles were used for 24*7 services (GVK EMRI, 2015).

- **Central Government Health Scheme:** For the last six decades, Central Government Health Scheme is providing comprehensive medical care to the Central Government employees and pensioners enrolled under the scheme. CGHS system has been digitalized in the year 1954 providing services such as cashless payments and reimbursements, online appointments, SMS alerts and digital records of patients. The doctors prescribe medicines through automated procedures; all records of patients are available on the network, the inventory of medicines etc. is also maintained in the network making it easy to check for availability of medicines.

3. **II.1.2 Ante and Post Natal Care, Maternal Care and Immunization**

- **Reproductive, Maternal, Newborn, Child and Adolescent Health (under National Health Mission):** It was launched in 2013 and essentially looks to address the major causes of mortality among women and children as well as the delays in accessing and utilizing health care and services. It majorly looks after the facilities equipped for prenatal care, increase the proportion of pregnant women receiving antenatal care, increase proportion of mothers and newborns receiving postnatal care at annual rate of 7.5% from the baseline of 45% (CES, 2009). It also aims to increase the proportion of deliveries conducted by skilled birth attendant, reduce the unmet need for family planning methods among eligible couples, increase met need for modern family planning methods among eligible couples and decrease the proportion of total fertility contributed by adolescents (15–19 years). The entire records under that program are digitalized making it easy to consolidate data and review the performance of the program against the objectives and desired outcomes of the program. The redressal of grievances by people can be sent through telephone, email, mobile phones and fax so that suitable action can be taken. GIS maps are used for planning and monitoring.
GPS system is used for tracking ambulances and mobile health units, video conferencing for regular review of the progress are some of the modern technologies for better communication and connectivity.

- **Kilkari**: Kilkari meaning baby’s gurgle in Hindi is an Interactive Voice Response (IVR) based mobile service that delivers free time-appropriate audio messages about pregnancy and child birth and care directly to the mobile phones of pregnant women. Initiated in the year 2013 in Bihar, it was out-scaled in 2013 to the entire country and aims to cover 10 million new mothers. The programme was designed by BBC Media action and launched by the Government of India. It creates awareness among pregnant women and parents of children about the importance of Ante-Natal Care (ANC), institutional delivery, Post-Natal Care (PNC) and immunization. The service covers the critical time period – where the most maternal/infant deaths occur - from the 4th month of pregnancy until the child is one year old. Families subscribe to the service receive one pre-recorded system generated call per week. Each call is of 2 minutes duration and serves as reminders for what the family should be doing that week depending on the woman’s stage of pregnancy or the child’s age. The Kilkari services were to be available to different states in regional dialect. (Press Information Bureau, Ministry of Health and Family Welfare, 2015)

- **TB Patient Monitoring System “Nikshay”**: It was launched by Government of India in June 2012. It is a web-based solution for monitoring of TB patients for tracking of individuals for treatment. It has been implemented across all States for monitoring of TB patients. Also a Missed Call Centre facility with Toll Free No: 1800-11-6666 for reaching to unreached TB patients is available, for counseling and treatment support. Approximately 80 lakhs patients have been registered on Nikshay (Ministry of Health and Family Welfare, 2015).

- **Ananya**: Launched in May 2010, Ananya Program—a collaboration between the Bihar state government and the Bill & Melinda Gates Foundation—aims to reduce maternal and infant mortality in the state. The aim of the program is to reduce maternal, neonatal and child mortality and improve key nutrition and health outcomes, essential health and nutrition services for children under five and men and women of reproductive age, especially pregnant women and newborns. Ananya’ programme provides health care services in Bihar via mobile phone. A "Mobile
"Academy" training course has been developed to expand health workers' knowledge of 10 life-saving health behaviors and enhance their communication skills. The audio course is delivered via Interactive Voice Response (IVR) that can be accessed from any mobile handset. A multimedia service called "Mobile Kunji" (key or guide), which provides information on these health issues, has also been introduced. Mobile Kunji and Academy are accessible from any mobile phone handset (no special software is required) (Sara Chamberlain, 2014).

- **Mother and Child Tracking System:** MCTS was launched in December 2009 by the Ministry of Health and Family Welfare, Government of India. It is a comprehensive system for improving delivery of health care services to pregnant women and children up to five years of age through name based tracking of each beneficiary, monitoring service delivery, identification of gaps, better planning and implementation of Programs.

  The MCTS is designed to capture and track all pregnant women (from conception up to 42 days post-partum) and all new-born children (up to 5 years of age) and to ensure that all pregnant women receive their full Ante-natal Care (ANC) and Postnatal Care (PNC) services at the due times, institutional deliveries for pregnant women, particularly for high risk mothers, are encouraged and all children receive the full immunization schedule at the due time. Pregnant women and children registered under MCTS program receive regular SMS alerts on their pending services. After the baby is born, each baby is allotted a number; the families can check the status of services provided to them or pending or due by feeding the number on the online portal.

- **Aarogyam** started in year 2008 in Uttar Pradesh aimed at using ICT to pregnancy, ensure proper maternal care, and provide child survival services to new born and infants. The main elements of this program included MCTS and IVRS to send out timely the information on immunization schedules to women and answer to their queries as well. This program was brought out in practice seeing the condition of deaths of mothers on the very first day after giving birth and Uttar Pradesh is at its worst condition on the same issue. Later it was associated with MCTS program under which baseline health survey was taken by ASHA worker and a unique ID is given to each household. This unique ID helps to track the record of the mother and the child. A total of 11,464 mothers and 7,083 children were registered for health care through the MCTS component between April-September 2013 and in 2010-12, the IVRS averaged 1,545 outgoing voice calls per month to alert beneficiaries to upcoming immunization/vaccination schedules. (World Health Organization, 2014)
- **Mobile Academy**: Mobile Academy is an anytime, anywhere audio training course on interpersonal communication skills that a health worker or ASHA (Accredited Social Health Activist of the National Health Mission) worker can access from her mobile phone. It gives ASHAs tips on how to convince families to adopt priority RMNCH (reproductive, maternal, newborn and child health) behaviors, while refreshing her existing knowledge. The course is 240 minutes long and consists of 11 chapters with 4 lessons each. At the end of each chapter there is a quiz for them and all ANM/ASHAs passes the course are provided with a printed certificate. Table 3.1 sums up the various characteristic features of the ICT based health initiatives.

### Table 3.1: Various ICT based health initiatives in India

<table>
<thead>
<tr>
<th>S.No.</th>
<th>NAME OF THE PROGRAMME</th>
<th>AREA of IMPLEMENTATION</th>
<th>ORGANIZATION</th>
<th>YEAR</th>
<th>FOCUS AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mission Indradhanush, Mobile Application</td>
<td>Nation wide</td>
<td>Ministry of Health and Family Welfare and Immunization Technical Support Unit (ITSU)</td>
<td>2015</td>
<td>-Provides user friendly interface to track progress made under Mission Indradhanush -Immunization officers at different levels will be able to showcase their performance in different rounds of Mission Indradhanush</td>
</tr>
<tr>
<td>2</td>
<td>Online registration system</td>
<td>Mehrauli, New Delhi</td>
<td>Ministry of Electronics and Information Technology, Government of India</td>
<td>2015</td>
<td>-Improves service like online registration and appointment, payment of fees, online viewing of reports, enquiring availability of blood online, etc</td>
</tr>
<tr>
<td>3</td>
<td>National Health Portal</td>
<td>India</td>
<td>Ministry of Health and Family Welfare, Government of India</td>
<td>2014</td>
<td>-Provide access for authenticated health information for citizen across country -Launched voice web service as part of Digitalization of health sector -Portal provides information and solve queries related to health programs, policies, laws and guidelines</td>
</tr>
<tr>
<td>No.</td>
<td>Program Name</td>
<td>Location</td>
<td>Implementor</td>
<td>Year</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------</td>
<td>------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 4   | Kilkari                        | Bihar            | BBC Media action and Government of India                                   | 2013 | -Interactive Voice Response (IVR) based mobile service that delivers free time appropriate audio messages about pregnancy and child birth  
- Creates awareness regarding ANC, PNC, Institutional delivery and Immunization  |
- Missed call centre facility for reaching unreached TB patients  
- Counseling and treatment support  |
| 6   | Ananya                         | Bihar            | BBC Media Action with Bill and Melinda Gates Foundation                    | 2010 | -Aims to reduce child mortality  
- Improve maternal health  
- Counseling families  
- Reduce maternal, neonatal and child mortality  
- Mobile Academy training course has been developed  
- Multimedia service called Mobile Kunji introduced for information on health issues  |
| 7   | Mother and Child Tracking System | All states in India | Ministry of Health and Family Welfare, Government of India                  | 2009 | -Improve delivery of health care services to pregnant women and children up to five years of age  
- Capture and track all pregnant women and all new born children up to five years of age  
- SMS alert for beneficiaries and health functionaries. |
Various mobile applications have also been started by the Government/other organizations to enhance the effective delivery of health services and improve the working of health programs. A summary of some of these applications is presented here:

**Table 3.2: Recent mobile applications for healthcare.**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name</th>
<th>Year of launch</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>NHP Directory Services</td>
<td>June, 2015</td>
<td>Provides information related to Hospitals across India</td>
</tr>
<tr>
<td>2.</td>
<td>India Fights Dengue</td>
<td>April, 2016</td>
<td>Enables a user to check Dengue Symptoms, get nearest Hospital / Blood bank information and also share feedback</td>
</tr>
<tr>
<td>3.</td>
<td>NHP Swasth Bharat</td>
<td>April, 2016</td>
<td>Information dissemination on Disease, Lifestyle, First Aid</td>
</tr>
<tr>
<td>4.</td>
<td>Vaccine Tracker (Indradhanush Immunization)</td>
<td>April, 2016</td>
<td>Support parents in tracking immunization status of their children and helps them in ensuring complete and timely vaccination</td>
</tr>
<tr>
<td>5.</td>
<td>MeraAspatal Mobile</td>
<td>August, 2016</td>
<td>To capture the patients feedback for the services offered</td>
</tr>
<tr>
<td>6.</td>
<td>Pradhan Mantri Surakshit Matritva Abhiyan</td>
<td>August, 2016</td>
<td>For reporting pregnancy care related information from across states</td>
</tr>
</tbody>
</table>
3. II.1.3. International initiatives

- **Maternal and child health care project:** It is an initiative started by UNICEF in Rwanda through text messaging alert system. The objective is to facilitate routine surveillance of health events and advising women on the provision of care, particularly in high-risk situations. From June 2010 to May 2011, the trained CHWs specialized in maternal health in the Musanze District monitored a total of 11,502 registered pregnancies. As a result of the program, the percentage of pregnant women who delivered at a health-care facility in the Musanze District rose from 68% in April 2010 to nearly 95% (World Health Organization, 2014).

- **Mwana Program:** It is a project that helps in early diagnosis of HIV through text messaging service since 2009 in rural Zambia. Other than SMS service it uses wireless cellular telephony also to not only reduce delays in early diagnosis of HIV but also improve follow up postnatal treatment. Such early diagnosis of infants born to HIV infected mother has 75% chance of surviving if proper treatment is received. Techniques like wireless cellular telephony and SMS service was taken up because 3 out of 4 people in Zambia have a mobile phone and text messages are valued there. Similarly, a mobile application was started named “RemindMi” that reminds the mothers to improve the infant’s postnatal treatment. The reminders were also sent to the community-based agents so that no appointment is missed and they can encourage women for the postnatal checkups. In August 2013, Programme Mwana was running in 496 health facilities in 10 Zambian provinces with staff of 1,338 and 1,918 registered communities based agents. Since the starting of programme Mwana, the use of Rapid SMS has increased the average number of HIV test results compared to those recorded on paper (World Health Organization, 2014).

- **Health call center’s/Health care telephone help line:** Health call center’s/Health care telephone help lines are a service created to deliver health care advice services by trained health professionals on the telephone. This method of communication is established to manage national emergencies. It was routinely made available during the H1N1 influenza outbreak in 2009. This mobile technology infrastructure developed health call centers that can increase accessibility of health advice and
information to patients and the public. The project has been operating in Canada, the United Kingdom, United States of America, Bangladesh, India, Mexico, and Pakistan. The impact of this program has been huge. The African, Americas, and Eastern Mediterranean Regions frequently reported offering health call centers and help lines that addressed specific health issues. This included public health issues such as HIV/AIDS, drug abuse, addiction and suicide, family planning, smoking cessation, cholera, dengue and febrile syndromes and emergencies. The European Region reported more general-purpose health call centers (64 percent) as compared to other regions. The African 17 percent and South-East Asia 38 percent Regions reported a low level of pilot-stage activity for health call center/health care telephone help line initiatives. Countries in the high-income group reported the highest number of established health call centers (WHO, 2011).

- **E-learning program:** A program for on-line learning for health professionals and nurses was started in Kenya in 2005 in partnership with Nursing Council of Kenya and several other government and private organizations. Its pilot study started with four schools serving 145 students and its five year goal was to upgrade the skills of 22,000 enrolled community health nurses. Electronic learning was the most preferred mode because of its interactivity, cost effectiveness, and ability to achieve its goal in less time and at lower cost. The problem it faced was the inadequately skilled nurses that could not manage new and re-emerging diseases like HIV/AIDS. To solve this problem, e-learning program was introduced in which over 100 computers equipped training centers including rural, remote and marginalized districts were built along with enrollment of over 4,000 nurses and 192 implementers trained in IT skills for keeping records (Doldo, 2009).

- **Distance education radio for health workers in Nepal:** The Radio Communication Project (RCP) used two radio drama serials and several reinforcing components. ‘Service Brings Reward’ was an entertainment distance education program aimed primarily at 15,000 grassroots health workers. ‘Cut Your Coat According to Your Cloth’ was aimed at the general public to improve public perception of health service providers and increase demand for services. These programs followed a mutually reinforcing approach by simultaneously increasing skills and demand for services. Reinforcing components included print materials (program guide, reference manuals, posters, wall hangings, calendars, method-specific brochures and flipcharts) and interpersonal communication and counseling training. The RCP incorporated messages about the well-planned family, conception and contraception, modern contraceptive methods, the role of the caring husband, communication

- **Emergency toll-free telephone services:** Emergency toll-free telephone services are often used for quick access to health professionals or staff trained to provide direction during a medical emergency. Access to telephony services is required to engage with a health call center and/or emergency toll-free number. The South-East Asia Region reported the highest percentage of emergency toll-free telephone services at 88 percent. The African Region reported the least activity in this category 31 percent. Countries from the lower-middle income 63 percent and high-income 58 percent groups reported the highest level of service (WHO, 2004).

- **Appointment reminders:** Appointment reminders are voice or SMS messages sent to patients to schedule or attend an appointment. After receiving qualitative reports from the survey responses, the program was expanded to include immunization reminders, treatment results, and post-appointment follow-up calls. In low and lower middle income countries, where access to fixed-line telephony is minimal and in high-income countries where fixed line telephony is being replaced with mobile phones, the mobile phone is rapidly becoming the primary means of receiving appointment reminders. Countries in the high-income group reported the largest proportion of appointment reminder initiatives (71%). The majority of these initiatives were established (42%) using various functionalities including voice, SMS, and the Internet. The Americas (58%) and European (53%) Regions have the highest percentage of Member States with appointment reminder initiatives. SMS was the most common mobile phone feature used for appointment reminder initiatives (WHO, 2011).

3. II.2 ICTs in Education

Digital media in the form of ICTs have a tremendous scope in the education sector as they provide the means to access and choose educational institutions, courses, educational content for formal and non-formal education as well as evaluation and monitoring. ICTs offer various advantages to the learners, by providing improved learner support, widening the access to resources and giving learners the opportunity to learn anywhere at any time. Despite these advantages, use of ICTs in education has been quite limited to only some privileged groups, in terms of their socio-economic background. There are several ICT...
initiatives in education by the Government, NGOs and Corporate sector as CSR projects aiming to enhance educational levels and make education available to all and transcend geographical and other societal barriers. ICTs are making inroads at the schools, college level, in open schools and universities as well as children and adults who want to upgrade their skills, and qualifications while continuing their formal education of job. While all these initiatives concern people at large, the needs of adults especially adult poor women who are marginalized by socio-economic-cultural and gender based constraints and constructs are different and need to be given special attention.

The following section provides an overview of the different ICT based initiatives suited to the needs of poor women to enhance their literacy and education skills and think of ways and means how ICTs could further benefit poor women.

**Radio Rural Forums:** These were set up by UNICEF in 1956 at Pune. People were made to listen to half-an hour radio program broadcast by AIR and then asked to discuss the content of the program. There were some women’s groups also which listened to the programs. The theme of the entire exercise was, "Listen, Discuss and Act". The evaluation of the program showed that the radio forums helped to unify the villagers around common decisions and common acts, widening the influence of gram Panchayat and broadening the scope of its action.

**Krishi Darshan** was telecasted on Doordarshan on 26 January 1967. It also had a component catering to the special needs of women. This program was sponsored by Ministry of Agriculture in New Delhi. The objective of the program was to educate farmers regarding cultivation practices of various crops and create awareness about use of advance technology of agriculture. Information regarding allied rural business like animal husbandry, fishing, rural industries and poultry is also the part of said program. In a 24-hour channel for farmers, DD Kisan, telecasts special programmes on weather, farmer issues, commodities markets (The Economic Times, 2015).

**Satellite Instructional Television Experiment (SITE)** was a one year program from August 1, 1975 to July 31, 1976 to cater to a wide section of population in six most backward districts of the country. The SITE educational programmes were aimed at making the children sensitive to, and learn, community living and improve their basic concepts and skills. The educational and developmental programmes were beamed up to the satellite from earth stations set up in Ahmadabad and Delhi and were broadcast towards India using the high power transmitter and the large antenna aboard ATS-6. These programmes were received in about 2400 villages in six different states of India. SITE covered 2330 villages spanning in 20 districts of

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60
six states (clusters) namely Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Orissa and Rajasthan (Payal Kamat, 2012).

**National Mission in Education through ICT (NME-ICT):** National Mission in Education through ICT was set up by the Government of India which proposed the use of ICTs in education in its Eleventh five year plan (2007-2012). Many new ICT related projects were implemented by NME-ICT for development of e-learning education environment. Some of the major projects are e-GyanKosh, Flexi learn, NPTEL, CEC, Institute of Lifelong Learning (ILLL), e-PG Pathshala. The use of these new learning technologies contributes greatly in formal education system across the country as well as also has opened up many significant opportunities for informal and continuing literacy and learning programs for youth and adults (Iftkhar & Jihye, 2015).

**The Project on Radio Education for Adult Learners (PREAL)** was started in May 1988 and aimed to enhance the functional literacy and strengthen the reading ability of women in rural areas of India through radio lessons. PREAL also aimed to use radio technology to increase awareness of the need for literacy and educate listeners on issues relating to daily basis. The radio lessons taught learners to read three words per class, and followed the instructional procedure of- listen and speak, listen and see, see and read. The radio programs were accompanied by written material and were designed to be culturally and linguistically appropriate for the target audience. Lessons had entertainment value, and used storytelling, enactment, audio games, music and folklore to attract and motivate learners, and to strengthen the learning process. The project also involved distributing radio-cassette players and blank cassettes to adult education centers, where the learners gathered to hear the radio lessons (Sarma, 2001).

**The Tata Computer-based Functional Literacy Programme:** The Tata Computer-Based Functional Literacy programme (CBFL) started in 1988 in India, uses a mix of methods, including computer software, animated graphics, multi-media presentations and flashcards, to teach reading skills. The lessons are based on material developed by the National Literacy Mission and are researched and formulated. Computers deliver the lessons in multimedia form, supplemented with textbooks. Audio voiceovers explain how letters combine to give structure and meaning to various words and has to pronounce the words. Lessons are designed to be visually interesting and entertaining. The use of repetition strengthens what is learned. A typical class may have between 15 and 20 people and is held in the evening hours (Business& Human Right Resource Center, 2005).
Ganokendra: It started in 1992 in Bangladesh, the Dhaka Ahsania Mission has established Community Learning Centers (CLCs) called “Ganokendra” (the people’s center), with the aim of creating facilities for learning and community development. The Dhaka Ahsania Mission encourages the development of literacy by making reading materials and other written information available at Ganokendras, and providing classes in literacy, numeracy and subjects relevant to local needs, including vocational training (Alam, 2014). The Ganokendra program provides participants with skills training opportunities in a variety of fields including:

- literacy (basic and functional literacy);
- livelihood skills training and support to establish income generation activities / projects (for example, handicraft production, carpentry and agriculture);
- health (e.g. HIV/AIDs awareness, family nutrition, good sanitation practices, anti-drug and anti-tobacco awareness campaigns);
- environmental conservation

TARA Akshar Plus: it is an innovative computer based functional literacy program that trains rural women to read and write in Hindi, and carry out basic mathematical calculations. TARA Akshar was developed in 2004 by TARA haat Information and Marketing Services Ltd. Tara Akshar is a computerized literacy and numeracy program for adults that are supposed to impart literacy in 56 days with a very low dropout rate due to the element of interest. Primary targets of this program are women in rural India, predominantly from lower-caste groups. It is implemented by minimally trained, computer-aided instructors in an interactive, group-based manner (10 women per group). It runs for two hours a day for 56 days and includes a numeracy component in addition to the literacy module. The program targets women between 15-45 years of age who are illiterate (Tara Akshar plus, 2018).

Education Television project: The project was developed in 1961 in collaboration with the Adult Basic Education Society (ABES) and was implemented with the support of a range of agencies and non-governmental organizations. It was an early initiative by the Pakistan Television Corporation, the “Adult Functional Literacy Program” which used television in combination with literacy to provide literacy lessons to adult students. Lessons taught learners to read and write simple sentences relating to their daily life and work. The use of audio-visual techniques illustrated how letters and words are formed and reinforced learning. The half-hour literacy lessons were telecast twice a day, six days per week, so as to
reach people at a time that was convenient to them. The lessons were based around subjects of interest to the target audience; including health and nutrition, financial management and child care (Betz, 1990).

**Chauraha:** Television Program for Learning the Alphabet was one of India’s recent initiatives, started in 1785 using ICT to enhance literacy learning, this involved the regular screening of a television program titled “Chauraha” (“The Crossroads”), on a State-run television channel. The programme taught the Hindi alphabet using puppets and a drama narrative (UNESCO, 2006).

**Establishing a connected grid of tablet computers and MiFi devices**

The project was to implement the ICT based model in selected schools in the remote areas of Khadki, Gadi and Vavar in the state of Gujarat, Western India. It aimed to teach the students through the interactive multimedia apps on internet enabled smart phones. The touch based interaction with mobile devices, helped children to engage further in learning experience. The multimedia approach and interactive capabilities of the devices along with innovative fun based teaching techniques help the children to learn effectively. Another unique feature is that, MiFi routers are completely wireless, fit in the palm of the hand and can be easily set up (Doshi, 2014).

**Gyantantra Digital Dost**

Gyantantra Digital *Dost* (GDD), developed by Literacy India in 2010, is software based interactive multimedia learning process. It blends classroom teaching and text books; it is embedded with cartoon characters and assessment modules. It makes the learning process easy, effective and enjoyable. GDD covers important chapters of Hindi, English, Science, Math, and Environmental Sciences up to class five. The program also illustrates to the children in a simplified manner important issues of society such as HIV, sexual abuse, voting rights and opening of bank accounts. An evaluation of the program has shown that the bearing hands of 8,000 school going children have shown dramatic improvement. More than 10,000 older children have been able to achieve primary level learning and important life skills (Literacy India, 2013).

**National Scholarship Portal (NSP)**

This initiative was started by Ministry of Electronics and Information Technology, Government of India. It has over 2 crore registered students and facilitates various services for students starting from student application, application receipt, processing, sanction and timely disbursal of various scholarships to
students. At present, 26 registered schemes are available from 16 Ministries or Departments (National Scholarship Portal, 2018).

SWAYAM

It is a program initiated by Ministry of Human Resource Development, Government of India and All India Council for Technical Education (AICTE) with the help of Microsoft in July, 2017. It is designed to achieve the three principles of Education Policy that is, Access, Equity and Quality. The main objective of this program is to take the best teaching learning resources to all, including the most disadvantaged sections of the society. It also seeks to bridge the digital divide for students who have remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy. It covers students from class 9th till post graduation and covers courses that are free of cost for the learners and can be accessed by anyone, anywhere, at any time. It also hosts 2000 courses and 80000 hours of learning: covering school, under-graduate, post-graduate, engineering, law and other professional courses.

PMGDISHA (Pradhan Mantri Gramin Digital Saksharta Abhiyan)

PMGDISHA is a scheme brought by Ministry of Electronics and Information Technology, Government of India launched in October, 2017. The objective is to make six crore persons in rural areas digitally literate across States/UTs by reaching around 40% rural households and covering at least one member from every eligible household by 31st March, 2019. Courses taught are how to send and receive emails, browse Internet, access Government services, search for information, etc, to an age group of 14-60 years (Pooja Darade, 2017).
3. II.3 ICTs and Income generation

Existing ICT initiatives in Employment and Income Generation

Women across the world especially the developing countries lag behind men in economic empowerment. Not only there are fewer women in work force at all levels, their work span is considerably lower and they may earn lower wages as compared to males. Since ICTs are important tool to boost progress, they can be suitably used to enhance economics participation of women. Some of the initiatives in place have been presented here. They have broadly divided into three categories namely, steps taken by NGOs, national initiatives and international initiatives along with their impact on women.

3. II.3.1. National Initiatives

CSC Common Service Centers have been recently started by the Ministry of Electronics and Information Technology, Government of India in the year 2006. They help in empowering people in rural India by providing various Government services across 1.83 Lakhs Gram Panchayats. Up to June 2018, there are 3 lakhs CSCs and have created 12 lakhs direct and indirect jobs where 54,000 women are working. The main functions/ services of CSCs are:

- Agriculture Services (Agriculture, Horticulture, Sericulture, Animal Husbandry, Fisheries, Veterinary)
- Education & Training Services (School, College, Vocational Education, Employment, etc.)
- Health Services (Telemedicine, Health Check-ups, Medicines)
- Rural Banking & Insurance Services (Micro-credit, Loans, Insurance)
- Entertainment Services (Movies, Television)
- Utility Services (Bill Payments, Online bookings)
- Commercial Services (DTP, Printing, Internet Browsing, Village level BPO).

The Scheme creates a conducive environment for the private sector and NGOs to play an active role in implementation of the CSC Scheme, thereby becoming a partner of the government in development of rural India (CSC Scheme, 2018).
**CIRC Community Information Resource Centers** initiated on 26 January 2018 aims to improve the digital literacy levels among underprivileged women living in semi-urban parts of the city in Bengaluru. The ground staff in Bengaluru, Karnataka, often engages in door-to-door mobilization, during which they assess the needs of the community and inform them about how digital tools can address their needs. The center receives good response from women mostly from minority communities living in nearby slums. The beneficiaries have reported that digital literacy is able to give them the confidence to learn something new, which they lacked. CIRC Bengaluru has also been striving to train first-time women learners of digital tools, living in urban slums on the outskirts of the city in Karnataka. This project is supported by Oracle and Charities Aid Foundation. The women who acquire digital skills are more likely to find jobs and can also be entrepreneur, thus boosting the economic empowerment of women.

**Mahila e-haat:** This project was initiated by the Ministry of Women and Child Development on 7\(^{th}\) March, 2016. It focuses on online marketing platform for women in New Delhi. It is an initiative for women to participate and display their products online and be a part of Digital India and Stand Up India programs. The empowerment of women will take place in three stages in which Mahila E-Haat is the first stage. In the second stage, it is planned to integrate it with e-commerce portals to provide a larger platform for selling and buying goods. Lastly, Women’s Entrepreneurs Council will help to expand this initiative further and give it an institutional shape. More than 10,000 Self Help Groups (SHGs) and 1.25 Lakhs women beneficiaries stand to benefit by the initiative by registering themselves. Also, participation in e-Haat is open to all Indian women citizens more than 18 years of age and the entire business can be handled over mobile phones which is an advantage for all women including poor women (Press Information Bureau, 2016).

**SoochnaPreneur** – It is a programme introduced in the April 2016 by the Digital Empowerment Foundation (DEF) and QUALCOMM, which trains women entrepreneurs who can then set up information enterprises in rural areas to address the needs of digital and information services. This program helps women to enhance their digital skills and serve various information services need of consumers (especially in villages and community). This is important because a large chunk of population in India especially in rural areas is still not connected by modern digital communication technologies because of which, people are being kept away from their entitlements and necessities.

The DEF envisage training 350,000 women till 2019, through 100 digitally equipped service centers.
**Women on Wheels:** Azad Foundation runs a programme called ‘Women on Wheels’, in which women from *bastis* (poor communities) across Delhi are trained as professional drivers. The program focuses on ICT usage as the women are imparted technical skills on their mobile phones such as GPS, cab bookings and car maintenance. The women are also educated on issues such as self-defense, financial literacy and communications skills. In addition it serves the dual purpose of providing women with livelihood, as well as offering a safe mode of commute to women travelers. The organization works with young women aged 18-35 from disadvantaged backgrounds living in slums and resettlement colonies (Azad Foundation India, 2017).

**Skill India program:** In July 2015, the Skill India Mission, a mega drive initiated by the Ministry of Skill Development and Entrepreneurship (MSDE), has launched to make a difference in the lives of women through skill training and empowering them for better and secured livelihood. MSDE’s (Ministry of Skill Development and Entrepreneurship) started scheme-Pradhan Mantri Kaushal Vikas Yojna. More than 17 Lakhs women have already been trained under the scheme. With emphasis on women empowerment and improving employment opportunities, the scheme being implemented by National Skill Development Corporation (NSDC), encompasses skill development via short term training program, special projects and recognition of prior learning, covering over 250 courses. Attempts are made to find placement for trained women. Some of the women- centric projects have been- carpet weavers in Rajasthan (Jaipur Rugs Foundation), dairy and poultry farmers (pan-India), bakery and apparel training for Bru-tribe (North East), retail program for Amazon Meri Saheli (North East), etc. (MeitY, GoI). Digital skills are a part and parcel of the program (MeitY, GoI, 2014).

**Digital Cluster Development Programme (DCDP) -** This is a programme started by DEF in 2009 in collaboration with various Government bodies and CSR groups and it involves inclusive use of Information Communication Technology (ICT) and other digital tools in aspects of handloom cluster development, improving and scaling up weaving skills, designs, marketing and entrepreneurship, creating sustainable livelihood options for the youth in the clusters specially young girls. DEF in partnership with Ministry of Information Technology in Chanderi village (2009) brought out a project named “Chanderiyaan” and train young weavers in digital skills such as software for designing and marketing with help of computers. Due to this project, the average household incomes have tripled because of ICT intervention.
Datamation Foundation: started a project in 2003 in Seelampur area of Delhi for Muslim women. The project localized appropriate communication and information networks by setting up an ICT centre at a Madarsa. This helped link resource-poor women to the information and tools for knowledge management. It also helped establish buyer-seller linkages towards eradication of absolute poverty. The program has been able to create self-confidence in women and create awareness about their interest and helped them take collective decisions in addition to finding employment.

Aamagaon Soochna Kendra: (My village’s information centre) is a project started by Government of Orissa by setting up 73 Information and Communication Technology (ICT) kiosks in the rural areas of 12 districts of Orissa. These kiosks are run by Women SHGs/ Panchayat/ NGOs / CBOs / Youth Clubs and managed by the Community IT volunteers paid through user charges collected and managed by the local hosts. Under a partnership with Mission Shakti, women SHG members are trained on computer fundamentals and Internet basics at the IT Kiosks on payment of an affordable fee (Jyoti Parihar, 2017).

E-Seva Centres: Started in June 2002 in Andhra Pradesh, India, under which a Web enabled, rural ‘e-Seva Centre’s are run by self help groups of women from the poorest segments of society has been established. The aim is to help women achieve economic independence. It is also an attempt to replace the traditional form of governance and its accompanying deficiencies with a modern, more open, transparent and responsive service delivery system (Maier, 2007).

SEWA: SEWA is an organization of poor, self-employed women workers. It organizes workers to achieve their goals of full employment and self-reliance through the strategy of struggle and development. Full employment means employment whereby workers obtain work, income, food and social security. SEWA has launched various integrated development and capacity building program to train women in ICT usage. SEWA has pilot tested various ICT tools for poverty mitigation, micro-enterprise development and even disaster mitigation, with a lot of success. SEWA’s ICT efforts focus on the following aspects: capacity building, livelihood generation and security and knowledge sharing. It organizes computer trainings for women and their children in the villages of nine districts of Gujarat. The trainings are all about exposure and introduction to very simple computer applications that can help them in their trades, and help them communicate with one another and ease some burden in their lives. Video conferencing equipment are...
being used in many of SEWA’s centers for effective interaction, holding literacy training, health related, childcare related and other trainings for the community members (SEWA, 2009).

The India BPO Promotion Scheme has been initiated by Ministry of Electronics and Information Technology, Government of India, to create 1.5 lakhs direct employment opportunities for the youth by promoting the IT industry. The BPOs are setting up across the country in small towns and rural areas and so far, 45,480 seats for establishments have been allocated (MeitY, 2014).

3. II.3.2. International Initiatives

The Phoenix Project Taiwan (2005): This project started in 2005 with a Microsoft Unlimited Potential Grant. It teaches basic IT skills to women in Taiwan via a 24-hour curriculum, focusing on how to send emails, how to use digital cameras and how to post on the internet with a description, as these basic skills are relevant for women in communicating with their children and possibly doing business online. It was found that the status of women improved, they had more self-confidence and led to better children-mother relationship (Melhem & Morell, 2009).

Women in Technology Middle East and North Africa (WIT MENA) (2005): It was a partnership program to empower women and expand their participation in the workforce. The women were to be provided essential ICT skills business planning and professional development skills training. In partnership with Microsoft and Middle East Partnership Initiative of the US Department of State, WIT is implemented by the Institute of International Education in collaboration with local partners in nine countries: Bahrain, Iraq, Jordan, Lebanon, Morocco, Oman, Saudi Arabia, UAE and Yemen. Since its launch in 2005, 3,500 women have been trained (Women in Technology MEA, 2014).

Pallitathya Help-line, Development Research Network (D.Net) Bangladesh (2004): D.Net (Development Research Network) is a non-profit organization, which envisages the use of information and communication technology (ICT) for economic development of Bangladesh. In 2004, Pallitathya Help-line was introduced as a project under Pallitathya Programme, which provides villagers with a set of mobile phone numbers to make a specific query on any livelihood matters or to send some urgent information to D.Net for further action. The call is answered by a specialist at the ‘help-desk’ located at D.Net’s headquarter. At present D.Net provides ‘help-line’ services in four villages of Nilphamari,
Bagerhat, Netrokona and Noakahli districts in Bangladesh. There are four bare-foot women mobile-phone operators who work as infomediaries. The Helpline was accessed by over 4,000 users over a 15 month period. Research shows that 95% of queries are answered and 80% were satisfied with the information they got. The main benefit is financial saving with many examples of travel or use of middlemen being avoided (Pallitathya Help-Line Center, 2006).

**Women-operated ICT Services Unit North-Western Uganda (2002):** The ICT unit carries out computer application training, typesetting, data entry and photo scanning. Its main customers include civil servants, students on vacation and from tertiary institutions, local government contractors and local government councils. People are trained in MS Office Suite, Adobe Page maker and SPSS (Women ICT enterprise, 2002). It provides employment to women who work in the ICT center and helps build self confidence in women (World Bank, 2009).

3. II.4. **Impact of training in digital skills on women**

There are multiple challenges to ICTs becoming a positive force for women's economic and social empowerment. Bridging the technology gender gap will not be solved by solely including more girls in programs or by passively placing computers in schools, libraries and resource centers. Solving the technology gender gap is about building skills and changing mentalities. Therefore it is important to train not only the youth but people in other age groups as well to bridge this huge gap. It is significant to identify and upgrade specific skills required which would subsequently lead to use of ICT enabled programs and services and ultimately make an impact on status of women in society. Following are some of the initiatives taken globally to enhance digital skills of women and their impacts on various aspects of their lives.

**Internet Saathi**

Internet Saathi programme aims to facilitate & improve digital literacy among women in rural India. The programme is a joint initiative of Google India & Tata Trusts. It is supported by the Foundation For Rural Entrepreneurship Development (FREND) set up by Tata Trusts. Women in rural India can complete the Saathi training, learning how to access and use the internet, and they in turn impart training to their community and neighboring villages. Launched as a pilot in Rajasthan in July 2015 it has covered 300,000 villages across India. On an average, 25% women continue to use the internet after
being trained in various techniques. Almost 90% of the women who attended the training now have a better understanding of internet.

**Intel- She will connect**

In 2014, Intel launched the Intel She Will Connect programme, with the goal to reduce the gender gap in internet use around the world by addressing women’s lack of awareness and skills. The programme began in Sub-Saharan Africa where the gender internet gap is the greatest as outlined in the Women and the Web report, and is currently running pilots in Kenya, Nigeria, and South Africa. The goal is to reach five million young women in the region by 2020. The programme focuses on having participants “learn by doing,” i.e. learn practical skills like browsing and email. The platform focuses on helping women understand what is possible with the Internet, rather than just teaching basic computer skills. Intel has collaborated with World Pulse, an online community for women in 190 countries, to encourage access to online peer networks, and help programme participants stay connected and continue learning from each other in safe spaces, trained more than 500 trainers and 13,000 women across the three countries. In 2015, the programme continued to scale its in person classroom training as well as expand training to mobile platforms, provide information and content to women regarding the benefits of getting connected, and conduct additional research into the impact and effectiveness of the programme approach. The program helped in creating a social circle for women which they are deprived of and made them more independent in terms of digital learning. Due to hands on experience women gained confidence and participated in decision making at home (UN, 2014).

**Google: Helping Women Get Online (HWGO)**

An interesting pilot project was started by Google India, in the Bhilwada district of Rajasthan entitled ‘Helping Women Get Online’ (HWGO) in November 2013. About 100,000 women were trained in six states of India on the basics of the internet usage as part of the program. The training included an awareness module, coupled with hands-on training modules aimed at teaching women how to use the internet and mobile phones. It targeted at both urban and rural women across age groups, primarily in low and middle income districts. HWGO included numerous videos which showed different aspects of using the internet. This included step-by-step videos of how to use different internet features, with a dedicated section on mobile internet skills. Topics included “Internet usage charges on your phone”, “Sending emails from your phone”, “How to watch and share videos on YouTube”, “How to search for information online” etc. Google has created different levels of modules (basic, middle, and advanced), incorporating learning
from their own research and field testing, and feedback from on-the-ground partners. Under this program Google has also set up a toll free number where women can call and clarify any doubts they have about the Internet. The centre resources act as guides, giving step by step assistance on Internet related issues. The call centre also supports five languages. Since the launch of the initiative in 2013, over 1.5 million women were already trained on the basics of Internet, while reached another 40 million women through television and digital campaigns (World Bank, 2009).

**Women in Technology (WIT)**

A study was conducted by Women in Technology (WIT) in partnership with Microsoft for women of nine Middle East countries namely Bahrain, Iraq, Jordan, Lebanon, Morocco, Oman, Saudi Arabia, UAE and Yemen in 2005. As many as 2,500 women were trained and capacity building of 50 local women’s organizations was undertaken as part of the program. WIT meets its vision through a variety of leadership development, technology education, networking and mentoring opportunities for women at all levels of their careers through educational programs held on various topics. The project had speculated that in five years time by 2010, more than 10,000 women participants would have been provided access to new careers which would give the society a better shape. It helped women in networking, accessing right content to enhance their skills for employment and brush up on the leadership skills (Microsoft, 2009).

**The SEWA RUDI Sandesha Vyavhar (RSV)**

In 2004, The Self-Employed Women’s Association of India (SEWA) established the “Rural Distribution Network (RUDI)” programme through which agricultural products were purchased from local farmers, processed and packaged at a central processing facility. To develop the RUDI Sandesha Vyavhar (RSV), a mobile-based management information system (MIS) for local sales women called RUDI behns, was introduced for those who managed sales in the field, and those who worked at the central procurement and processing facility. The key challenge was that most of the 3000 RUDI behns were semi-literate. Moreover, they had a limited mobile skill set. To address the challenge, two major steps were taken-SMS-based mobile application was introduced in the local dialect and RUDI behns with more experience in mobile phones were trained as master trainers at SEWA’s central office who further trained other behns at the district and village level. The pilot program trained 2,500 RUDI behns. Based on the initial trainings, 97% of the interviewed RUDI behns saw a growth in customers (most of them saw a 10% - 20% growth). 97% of Rudi behns said they would recommend RSV to others. In 2014, the scheme was rolled out to more
districts within Gujarat, with the aim of recruiting and training 2,500 new RUDI behns. Women trained found interest in learning and strengthening their skills. They not only felt the need to learn but were eager to teach the skills to their family members (World Bank Report, 2009).

**NABANNA project**

As part of UNESCO research project in Nabanna in 2004, poor women were trained in the use of ICTs through five centers located in different districts of West Bengal, India. It was found that after the women received training, they not only gained more respect, but they could also get better jobs and had become more confident. It is a success story of rural women's empowerment through IT. The emphasis is on building a framework for information sharing, content creation, and off-line information dissemination. The central focus of this element of Nabanna's early work in Baduria involved teaching a core group of 60 "information agents" to plan and create content. They then discussed and exchanged it with other women through a range of media that included computers, the internet, face-to-face meetings, and newspaper. Each information agent set up and managed an information group of 10 women in her own neighborhood. These groups met once a week to discuss issues that impacted their own lives and communities. To enable skill development, three ICT centres were set up in Baduria, Jagannathpur, Arbelia and West Bengal. The women were taught basic computer skills and how to use MS Office and desktop publishing (DTP) applications.

As a result of the program, the women gained more respect at family and community level as they acquired IT Skills. The younger women felt that they could easily approach the job market with greater confidence than before. They also became more creative after learning various computer programs. (UNESCO, 2003)

**The SCALA (Sharing Computer Access Locally and Abroad) Project Philippines (2002):** EWB collaborated with the Social Technology Bureau of the DSWD to design and pilot the SCALA Project (Sharing Computer Access Locally and Abroad). The SCALA Project involved setting up Computer Livelihood Training Centers (CLTC) to help underprivileged youth access employment opportunities. The training at the CLTCs included basic computer literacy training, life skills education, resource linkages and employment support. As of 2005, 60% of the project’s beneficiaries were underprivileged females, out of school youth but 90% of the DSWD work force comprised of female social workers. In a study conducted in Philippines as part of SCALA project, young men and women from underprivileged sections of society.
were imparted training in computers to enable them to access employment opportunities. In 2005, 60% of the beneficiaries were underprivileged female out of school youth. It was found that the computer related training helped to enhance the self-esteem and self-confidence of women (City of Tacloban, 2011).

*Network and Capacity Building project*

A study conducted in rural communities in Armenia, as part of the Network and Capacity Building project reflected that when training was given to women in ICTs, they benefitted by gaining marketing skills, improved self-esteem, were better equipped with knowledge and confidence and developed the ability to fight against discrimination for social justice and gender equality. Under the program, ICT training courses were held which had about 50 rural women; including 20 jobless refugees aged 16-20 living in poverty (Knowledge for development series, 2003).

*Tele-centers Foundation (TCF)*

TCF, launched in 2005 in partnership with the International Telecommunications Union (ITU), developed a unique package of training and activities including the Tele-centres Women’s Digital Literacy Campaign and the ICT to empower the most disadvantaged and underserved communities of women and girls around the world. It encourages women learners to form small groups and work together, either online or face-to-face. This increases motivation among women, and also increases the effectiveness of the learning process. TCF tries to involve women as much as possible in the running and management of tele-centres. They not only benefit personally from the training, but are also instrumental in spreading awareness in the larger community, and ensuring that more women enroll in and benefit from the training. New modules of ICT and Entrepreneurship training are being delivered in more than 12 countries. In one of the trainings in Ghana, more than 100 women who ran local market stalls in Accra and the Eastern, Central and Western Regions were given a three-day capacity building workshop on ways to use their mobile phones to improve their businesses.

It leverages its network of more than 350,000 tele-centres to create a strong learning environment for women on the ground and has so far trained more than a million women in 79 countries. The programme continues to evolve and expand, constantly searching for new content and opportunities to engage more women and girls in effective learning experiences based on ICT resources. It shifted the focus on internet access in general, rather than mobile internet specifically and provided valuable learning’s in terms of training content and approach for women. (Tele-centres foundation.org foundation, 2013)
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**Agri-tech using ICTs**

As part of ITU’s capacity building efforts in Thailand in collaboration with the Food and Agriculture Organization (FAO), Microsoft (Thailand) and Cisco (Thailand), a capacity building programme was launched 2015 which aimed at imparting digital skills to female school students in Thailand. The program consisted of three training sessions of three days each primarily focusing on school children in Thailand. The training focused on ICT skills, knowledge and innovations that could be applied to both the ‘Smart Farm Model’ and the Learning Program of the Agricultural and Technology Schools and Colleges.

The students were trained to use mobile devices for farm applications, as well as raise awareness on use of unmanned aerial vehicles and drone technology as it relates to the development of agricultural and natural resources. More than 200 female students and other community members built skills and awareness to help them use ICTs for farming. Students gained skills and knowledge to innovate using simplified agricultural linked ICT devices, ICT using to measure moisture in the farm, mobile devices especially the mobile phone to communicate all the farmers themselves. They also learnt clicking pictures, video shooting and video editing, how to create the impactful storytelling. The girls, women, local leaders and other relevant stakeholders gained knowledge and skills on entrepreneurship, smart organic farming, simplified agricultural linked ICT devices, and natural resources management. They were also well equipped with mobile devices for farm applications, as well as raise awareness on use of technology (ITU Emerging trends for ICT4SDG, 2018).

**Kutch Mahila Vikas Sangathan (KMVS):**

This initiative is a part of the KMVS programme ‘ making women’s voices and votes count- An ICT based intervention in India’, supported by UN women fund for Gender equality for enabling the representation of excluded women’s concerns in local governance processes. The aim was to disseminate information on various issues such as PDS and ration cards, individual benefit schemes like widow pension, old age pension, disability support, housing schemes etc. through ICT. Capacity building of these representatives was undertaken by various tools like workshops and training sessions, exposure visits within and outside Gujarat and regular monthly meetings at the block level every year with participation of 350-400 women. Approx. 1800 rural families have benefitted from information support from the program. It helped women feel more comfortable with the technology and overcome the cultural barriers that currently prevent them
from accessing mainstream channels for learning support. It also made them more self-reliant towards digital technology (Pavarala & Malik, 2007).

Table 3.3 presents a summary of some of the ICT based employment initiatives for women.

<table>
<thead>
<tr>
<th>Name of the Programme</th>
<th>Area of Implementation</th>
<th>Organization</th>
<th>Year</th>
<th>Focus Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIRC</td>
<td>Bengaluru and Karnataka</td>
<td>Digital Empowerment Foundation (DEF) and Oracle and Charities Aid Foundation</td>
<td>2018</td>
<td>-Improve digital literacy levels among underprivileged women</td>
</tr>
<tr>
<td>Mahila e-haat</td>
<td>New Delhi</td>
<td>Ministry of Women and Child Development, Government of India</td>
<td>2016</td>
<td>-Online marketing platform for women -Products and information of women are displayed online</td>
</tr>
<tr>
<td>SoochnaPreneur</td>
<td>Rural areas</td>
<td>Digital Empowerment Foundation (DEF) and QUALCOMM</td>
<td>2016</td>
<td>-Trains women entrepreneurs to address the needs of digital services</td>
</tr>
<tr>
<td>Women on Wheels</td>
<td>Delhi</td>
<td>Azad Foundation</td>
<td>2015</td>
<td>-Women of Basti’s from Delhi are trained as professional drivers and required ICT skills</td>
</tr>
<tr>
<td>Skill India Program</td>
<td>Different states of India</td>
<td>Ministry of Skill Development and Entrepreneurship</td>
<td>2015</td>
<td>-Skill training to women and empowering them</td>
</tr>
<tr>
<td>Digital Cluster Development Programme (DCDP)</td>
<td>Madhya Pradesh</td>
<td>Digital Empowerment Foundation (DEF) in partnership with Government bodies and CSR groups</td>
<td>2009</td>
<td>-Technological enablement of artisans to bridge the digital divide</td>
</tr>
<tr>
<td>Datamation Foundation</td>
<td>Seelampur area, Delhi</td>
<td>Information Technology Enabled Services (ITES) and International Organizations</td>
<td>2003</td>
<td>-Helped link resource-poor women to the information and tools for knowledge management - Establish buyer-seller linkages</td>
</tr>
<tr>
<td>Aamagaon Soochna Kendra</td>
<td>12 Districts of Orissa</td>
<td>Government of Orissa in partnership with Mission Shakti</td>
<td>-</td>
<td>-Set up ICT kiosks in rural areas -Women trained in computer fundamentals and internet basics</td>
</tr>
</tbody>
</table>
3. III Barriers to digital literacy

It is well known that women face several barriers to acquiring and sustaining digital literacy. Some of the barriers are due to gender based differences in society; others are due to socio-economic cultural barriers along with lack of infrastructural support for using digital literacy. The following section has documented various kinds of barriers.

According to the UN's International Telecommunication Union Agency (2016), internet penetration is at only 40 percent in developing countries and 15 percent in the least developed countries. The report also highlights that gender gaps are one of the significant reasons apart the regional differences. Women's access to ICT is constrained by various factors such as issues of technological infrastructure, socially and culturally constructed gender roles shape and limit the capacity of women and men to participate on equal terms. Women also often lack the financial resources, education levels and equal opportunities to access ICT goods and services.

The study conducted by Center for Communication and Development Studies (2013-2015), surveyed nearly 10% of households in six low income settlements of the urban slums of India. They study revealed that only 18 % of adult residents use the internet, out of which the share of female users were very low (The Hoot, 2016).

According to the study conducted by GSMA, 1.7 billion females in low and middle income countries are without mobile phones. Furthermore, the gender gap appears to have widened in recent years. The study also found that the internet user gender gap grew from 11 percent in 2013 to 12 percent in 2016 (GSMA, 2010).

A study conducted by Financial Express highlights barriers to digital literacy and focused on one of the prominent barrier which is availability of network and villages of people to use services in various sectors. Today mobile broadband networks although cover 80 per cent of the world’s population, providing internet access to all is still a challenge. Consumer research undertaken by the GSMA reveals that the connectivity issue relates more to demand than supply-side factors. There are billions of people worldwide who are

| e-Seva Centres | Andhra Pradesh | West Godavari District Administration | - | -Established web enabled rural e-seva centre’s run by SHGs |

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covered by mobile broadband networks but are unwilling or unable to get online. This process is a barrier for people to use digital literacy (Financial Express, 2015). Similar observation has been made by other studies as well.

A study conducted in Asia in 2014 calculated that more than 2 billion people which is more than 50 per cent of the Asian population covered by mobile broadband networks but do not access the services. Affordability was the prime concern for not using the services. The cost of mobile ownership has fallen significantly in recent years, but affordability of internet connectivity remains a significant barrier to use of ICTs for people at the bottom of the economic pyramid, for the bottom 40 per cent of earners in India. An entry-level mobile device and tariff can account for 15 per cent of their monthly income in India. In some countries (such as Brazil and Argentina), consumer taxes can account for more than 30 per cent of the total cost of mobile phones (ITU, 2014).

**Reasons for non affordability of digital technology and services**

A GSMA report conducted in 2015 highlighted the barriers related to digital technology. There are insufficient IT infrastructure and teaching support for digital education which often prevented mobile users from obtaining the digital skills required to explore the benefits of accessing the internet. (Jon Fredrik Baksaas, GSMA, 2015).

A study conducted by ITC revealed that more than 50 percent of websites worldwide are in English but only 2 percent of websites are in Mandarin and less than 0.1 per cent are in Hindi. Even in Latin America, despite the prevalence of the Spanish and Portuguese languages in the region, less than 30 per cent of content accessed is in local languages. The issue is particularly pertinent in India, where 80 per cent of survey respondents cited a general lack of awareness and a lack of locally relevant content as the main barrier to internet adoption. Lack of locally relevant content is the biggest barrier to internet adoption in developing countries. Though India has about 650 million mobile subscribers, which represent about 13 percent of the global market, lag behind in internet use. Only 50 percent citizens in India currently subscribe to a mobile service (compared to 75 % in China) and a much lesser number use their phones to access the internet.

Only 31.2% of the population currently subscribes to the internet via mobile phones. This gap represents an opportunity to educate millions of Indian citizens on how they can use their mobile phones to improve education, employment opportunities and access to financial services and healthcare information. Many
people in India still face a number of barriers to owning and using mobile phones, including cost, network quality and coverage. Citizens must be empowered to use digital devices and resources in ways to benefit their own lives and communities to participate equitably in the global knowledge economy (Viktor Stephen, 2017).

Another study has shown that, only 10 per cent of mobile internet users felt that they understood their data plan properly and were able to make appropriate choice. Nearly 88 per cent of 2G consumers felt that mobile broadband was too expensive, 53 per cent felt that mobile broadband adds no value and 48 per cent believed there was no difference between 2G and 3G speeds (Tech2, 2018).

The study was conducted between September 2014 and January 2015 in Delhi covering 15,000 urban households and people aged between 15 to 75 years, which includes face-to-face interviews with nearly 4,500 smartphone users. Nearly 63 per cent of the users reported that they faced quality and reliability issues, such as lost connections and inconsistent network speeds while using mobile networks indoors, while 68 per cent of consumers said they face app-related issues, such as lengthy lag time, apps taking a long time to refresh, maps failing to load and session failures while they are commuting or were outdoors. The study noted that such problems are more common in mid-size and small towns compared with large cities proving to a barrier in ICT usage (Business line, 2015).

Despite significant progress in India in accelerating financial inclusion through various initiatives; challenges continue to remain on both the access and usage fronts. Making transactions digitally requires regular use of one’s bank account through a digital device. However, statistics show that in 2016, 37 percent of India’s population remained excluded from formal financial services and 60 percent were non-active users of their bank accounts due to illiteracy and lack of infrastructure. The number of bank account holders has increased in the last three years due to PMJDY. However, 26 percent of the accounts opened remain inactive with zero balance. Lastly, only 30 percent of bank account holders have digital access to their bank accounts, making it difficult for the remaining 70 percent to engage in digital transactions (Next Billion, 2017).

In addition to a bank account, the shift toward digital platforms requires phone ownership (preferably smartphone), internet access on the phone and digital literacy to use these technologies adequately. In India, women over the age of 45 years and those with only primary level schooling, the elderly and people living in remote and rural areas are more likely to lack access to and ownership of mobile phones. Moreover, only 22 percent of Indian adults use the internet and 17 percent own smartphone, which is a
must-have for many digital financial services platforms. Additionally, consumers also face infrastructural barriers such as poor network connectivity and irregular electricity, especially in remote and rural areas (NPM Platform for Inclusive Finance, 2017). Table 3.4 depicts the gaps in ownership and access to mobile phones.

Table 3.4: Gaps in ownership and access to mobile phones in India

<table>
<thead>
<tr>
<th>Phone Ownership and Access by Population Groups</th>
<th>Phone ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Group</td>
<td>Phone access</td>
</tr>
<tr>
<td>Rural</td>
<td>65%</td>
</tr>
<tr>
<td>Urban</td>
<td>74%</td>
</tr>
<tr>
<td>Women</td>
<td>58%</td>
</tr>
<tr>
<td>Males</td>
<td>76%</td>
</tr>
<tr>
<td>Above 45 years age group</td>
<td>61%</td>
</tr>
<tr>
<td>25-44 years age group</td>
<td>72%</td>
</tr>
</tbody>
</table>

Source: Financial Inclusion Insights, 2016

The 2016 Financial Inclusion Insights (FII) survey found that 49 percent of a representative Indian sample had low levels of digital literacy. Digital literacy was even lower for vulnerable groups: the elderly were 18 percent more likely than the youth to be digitally illiterate, and both women and those with lower levels of education were also less digitally literate than average. People especially new consumers had lack of trust in digital services, especially when the interface was difficult. In case the transactions fail due to poor connectivity or confusing instructions during, the initial trust placed in the platform was quickly revoked and the customers reverted to cash. Behavioral factors thus play a huge role in the stickiness of using cash instead of digital modes for financial transactions (FII, 2018).

There is limited acceptance of digital infrastructure by local merchants is especially in smaller states, towns and villages. Even when people have debit cards, mobile wallets, or other digital money, they have very few places to use these digital products due to the lack of electronic point of sale terminals (EPos) and retailers who accept digital payments. By May 2017, India had 2.6 million EPos terminals—much lower than the retail estimated levels. This prevents individuals from poor and low-income households, from making efficient use of the many digital payment services. The access barriers tend to be technology-based, while the usage barriers are mostly, though not exclusively, related to knowledge and attitudes (Anoushaka Chandrashekhar, Misha Sharma, 2017).
Chapter-4

Results and Discussions: The Status of Digital Literacy

A primary survey was conducted on a sample size of 400 respondents comprising of 200 males and 200 females selected from all the 11 districts and 4 Villages of Delhi. The results of the survey are presented here encompassing gender differentials in various aspects of ICTs such as level of digital skills, as well as challenges and barriers faced in the use of ICT based initiatives by males and females.

Background Information

4. 1 Profile of the respondents

4. 1.1. Age profile: In order to get a perspective of both adult males as well as females in terms of digital skills and usage of ICT based services, the selected male and female respondents were aged between 20 and 50 years. Effort was also made to include married men and women and exclude children as respondents in the study. It was found that more than half of both male and female respondents (59 percent and 52 percent) across all the districts were relatively young and were in the age group 20 to 30 years. The age group of 31-40 years comprised 21 percent males and 26 percent females. Lastly, 21 percent males and 23 percent females were in the 41-50 year age group (Fig 4.I.1). This is explained by the fact that a large majority of the slum dwellers had migrated from rural areas either for work or after marriage. They had left behind their parents and older family members back in the villages.
Moreover, it is well accepted that young migrate much more as compared to the elderly population. While some family had migrated less than three years ago, others had migrated 3-5 years ago and a smaller number of families did so more than 5 years ago. They had come in search of better employment and income opportunities and a better quality of life as compared to life in their villages.

Migration is a common feature of all developing countries. As per Census of India, about 20.6 million persons (21.1% of the total migrants) moved from rural areas to urban areas during the last decade (Census of India, 2001). Globally across developing countries it is estimated that between 1950 and 2050 the rural urban population would flip from 70:30 to 30:70 (UNDESA, 2009). In India too, the slum population is expected to grow at a faster rate in future. Since the migrants from rural areas generally face limitations of literacy including digital literacy, meeting the digital training needs of this group will pose future challenges.

**4. I.2 Educational profile:** Literacy is one of the great challenges in the developing world and one of the primary causes of digital illiteracy. Universal education is still an unattainable dream for many of our rural and urban poor as has also been shown by the present study. The educational level of both males and females among the sampled respondents was very low with females lagging behind men in terms of their educational attainments. As compared to 23 percent males, as many as 36 percent females were illiterate. About 13 percent males and 23 percent females had studied only up to different levels of primary school and had dropped out due to various reasons such as lack of interest in education, burden of marriage, household work or the need to work to generate money for the family. Almost an equal number of males
and females (32 percent and 28 percent) had completed primary school and progressed to middle or senior school only 15 percent males and only 6 percent females had studied in 11th or 12th grades. Further, only 8 percent females were graduates as compared to 19 percent males (Fig. 4.I.2). Women, who had studied till some stage of primary school, were not currently involved in reading or writing activities and were not at all confident about their literacy abilities. Men however were involved in some literacy, related activities as well as in their jobs or reading newspapers either at home or workplace. The gender differentials in literacy and education were much more apparent at the two extremes of the continuum. This is reflected by more women (36%) being illiterate as compared to men (23%). Conversely more men (19%) had studied till or above graduation as compared to only 8% women.

![Figure 4.I.2 Educational profile of the respondents (Source: Primary survey)](image)

The findings of the study are in tune with NSSO data on rural and urban literacy drawn from 36,479 households in rural areas and 29,447 in urban areas in 2014. Rural literacy has been estimated at 71 percent as compared to 86 percent literacy in urban areas, in the age group of seven years and above (NSSO 2015). Though slums are a part of the urban areas, surveys carried out by different agencies have shown much lower literacy rates, poor performance and other parameters of the slum population posing further challenges to digital inclusion.
4. I.3 Occupational profile:

Considerable differentials were observed in the occupational profile of males and females.

![Occupational profile of the male respondents](image)

*Figure 4.1.3 Occupational profile of the male respondents (Source: Primary survey)*

The males were engaged in a variety of occupations. Almost 55 percent males were self-employed in various professions such as tailors, electricians, painters, and carpenter or had small shops; 12 percent were in service mostly as drivers, attendants or helpers in offices or shops. Another 9 percent were daily wagers in the construction industry. Almost one fourth of the males (25%) said they were unemployed and took up odd jobs whenever available (Fig.4.1.3).
The occupational profile of women was much different than that of males. The graph above (Fig. 4.I.4) depicts distribution of women in terms of their occupational profiles. It was surprising to find that despite the low level of income of families; as many as 69 percent women were housewives and were without any paid employment. Almost 17 percent women took up jobs of domestic workers and worked as cleaners, cooks, or attendants to children, sick or elderly. A small number of women (5%) were self-employed as beauticians, petty sellers, etc. Women said they had lot of household work and they hardly got any suitable employment opportunities in the area. Moreover, if they went out to work, who would take care of their children?

4. I.5 Religion of the respondents: Large majorities (85%) of the respondents were Hindu and the rest were Muslim. The other religions were not represented by the slum population. This composition was comparable to the religion wise breakup at the national level. It was also found that the North and South districts had higher number of Hindus (92-98%) whereas East and Central districts had higher number of Muslims (23-27%) as compared to other districts.
4. I.6 Income profile:

Collecting data on the income of families was an arduous task as both men and women were hesitant in sharing income related information. Effort was made to collect data of appropriate income of the families. About 58 percent families had income less than 15,000 a month out of which a large majority (52 percent) earned Rs 6,000/- to 15,000/- per month. 43 percent families had income greater than 15,000/-. Of these, 21 percent earned between 16,000 and 20,000/-. About 14 percent families had income between 21,000 - 30,000 (Fig 4.I.6).

Small number (8 percent) families were better off as compared to others and earned more than Rs.31, 000/- per month. The average monthly income of families was placed at Rs 16,752/-. Considering about five members per family, the per capita monthly income of families was a little above Rs. 3000/-.

4. I.7 Number of family members:

Almost all the families lived in a nuclear set up as the houses in the slum areas were very small. Moreover, the parents and other family members stayed back in the village to look after the farm, livestock and other relatives. It was found that 73 percent families had up to 5 members, 24 percent families had 6-8 members and only four percent had more than 8 members (Fig. 4.I.7). These families either had many children as in East and Central Districts or had some extended family members staying with them. On the whole, it was
found that the average family size in the slum was five members typically comprising of a couple and three children.

![Figure 4.1.7 Family size of the respondents (Source: Primary survey)](image)

**Ownership of Digital Devices**

4. II Gender differentiated ownership of Digital Devices and Services

It was encouraging to note that the ownership of mobile phones was quite high among the respondents as many as 90 percent of the males had mobile phones for their personal and exclusive use. Out of them, 59 percent had a smartphone. Further 58 percent of them had internet connectivity on their phones (Fig. 4.II.1). By comparison, a lesser number (58%) of females had their own mobile phones out of which only 22 percent had a smartphone with them. Further, only 18 percent women had internet connectivity on their phones.

It was also seen that among the 400 respondents of the study, about 48-49 percent had at least one smartphone in their family whereas 16-22 percent had at least two Smartphones.
The respondents said that phone had become a necessity in present day times especially for men whose service or self-employment was based on the mobile phones to a large extent. This was the reason for more men using smart phones. As revealed by the Focus Group Discussions, the male respondents said they used more features on the phone, thus spent more money on its purchase. By comparison, women owned ordinary phones which were primarily meant for making and receiving calls. The women were also asked why they did not have internet connection on their phones, they said that the services were expensive, and only one member could afford to have internet connectivity. Moreover, many women said they did not have much knowledge of internet and used the phone primarily for staying connected with their relatives back home in the villages.

The ownership of computers was found to be very minimal among the families as only one percent of the families owned a desktop or a laptop. None of the respondents had a tablet. Both male and female respondents said they did not have much use of computers, as the families were not well versed in their usage. Moreover, they said that, computers were very expensive and beyond their purchasing capacity. They said they were already struggling to make the two ends meet, how could they afford to buy computers? They also reported that they could perform the needed tasks through their mobile phones only. They visited the cybercafés if use of computers was absolutely essential.

The gaps in the type and quality of phones owned by males and females, has been highlighted by other studies as well. The findings are in consonance with research conducted by GSMA, a trade body of mobile operators which shows that women in India are 36 percent less likely to own mobile phones than men.
Some of the reasons for this were lack of address and ID proof among women, high cost of mobile phones and financial dependence of many women on the male-earning members of the household. Therefore, many women had to resort to borrowing handsets from other members of the family (GSMA, 2016). A study on the usage of broadband phones by working women identified “smartphone complexity” as one of the top three barriers preventing women from acquiring internet enabled phones (GSMA & Women, 2012). A research study by the Grameen Foundation in India, found that only 36% of women surveyed were able to use a mobile phone independently (Grameen Foundation, 2014).

A study conducted in 2014 by Telenor India in UP’s Aligarh district in India also inferred that a large majority of men were found to have smart phones while women owned the basic phones. To bridge this gap Project ‘Sampark’ was launched in western U.P, which through street plays and door-to-door contact with families’, the volunteers explained the benefits of mobile connectivity to people. Currently running in parts of Western Uttar Pradesh, the project was able to provide livelihood opportunities to local women who also worked as promoters. The project brought over 75,000 rural subscribers into the mobile network. This initiative helped in creating evidence that if families perceive enhanced income or other opportunities by using digital technologies, the gender gaps in their use may become smaller.

The comprehensive sex-disaggregated differentiation is witnessed internationally as well. Women’s access gap to mobile and internet across countries ranges from 16-40% (ITU, Intel, UN Women, 2014). A study conducted on 11,000 men and women from low and middle-income countries, about mobile access and usage has shown that women are on an average, 14 percent less likely to own a mobile phone as compared to men. In South Asia, this figure is much higher 38 percent, reflecting indirectly on the status of women. In addition, female mobile phone owners are also less likely to access mobile internet than their male counterparts in 9 out of the 11 surveyed countries. This gender gap varies significantly across countries, but is particularly wide in Kenya, India and Indonesia. Globally, women are 12 percent less likely to use the internet (both mobile and fixed-line) as compared to men. One of the contributory factors for lower use of ICTs by women is the poor digital skills and lack of gender sensitive planning for realizing the full potential of use of ICTs. This is because only 10-15 percent women are part of the decision-making group in ICT sector across countries (GSMA, 2015).

In 2014, a survey conducted by Google on 5,000 women in Asia Pacific, focused that 30 percent women who had not used internet said it was because they “lacked digital skills”. Another 35 percent said they doubted the usefulness of internet to women. Another study revealed that 37 percent of non-user women, who did not currently use the internet, said it was because they were not comfortable and familiar with the
technology. They also said that no one was available to teach them about how to use internet (Intel, “Women and the Web”, 2012).

It is thus apparent that to encourage women to use internet enabled services and applications; they need to be provided with training facilities including, affordable and accessible infrastructure at the same time.

4. II.2 Purpose of mobile phones usage

The study brought out interesting results in terms of usage of mobile phones. Calling and receiving phone calls was the primary purpose of using mobile phones both by men and women across all the districts. There were no gender based differences in this activity.

In addition, SMS, photography, WhatsApp were the other functions and applications used by a significant number of respondents. However, there were considerable gender based differences in use of mobile phone in terms of using various apps.

Whereas, 59-70 percent men used these services (SMS, WhatsApp and photography) only 21-55 percent women did so. Searching for jobs and other information was done by a quarter of men (25-35%) but only 5-10 percent women. About 30-35 percent men engaged in online shopping and paying of bills whereas only 5-10 percent women did so. The FGDs revealed that some women took help from others for online

Figure 4.II.2 Gender differentiated pattern of usage of mobile phones (Source: Primary survey)
shopping and opted for cash on delivery. About 10-25 percent men used the mobile phones for admissions of children, use of banking facility or for availing Government schemes as compared to fewer women (5-6%) (Fig. 4.II.2). The men said there were many agents sitting in the local markets that transferred money on their behalf to their respective villages and charged money from them. This was considered as a very practical option since people could not do so themselves. However, some women could use mobile phones to their advantage.

Pooja, 24 works in a Boutique and has a smartphone. She uses WhatsApp more in comparison to other applications and shops online with the help of her nephew.

The FDGs and in-depth interviews showed that though the ownership of mobile phones and internet connectivity among women was comparatively lower as compared to men, but this did not deter many of them from using the services. Many women reported using their husband’s or children’s phones in the evening for maintaining social contacts through Facebook or for watching videos related to their areas of interest (recipes, fashion etc.). They also used video calling to converse with their family members in the villages. The families also reported that they did need to use online platforms on several occasions such as for making train reservations, admission of children etc., but in the absence of skills and digital equipment, they sought paid help of cyber café operators in their neighborhood. The study has shown significant gender differences in ownership of mobile phones, internet connectivity, as well as use of various applications and features on the mobile phones. However, many women were showing keen interest in the issues of digital literacy.

Padmini Chattu (2013), also highlighted that the role of mobile phones among women is not only for communication but also to be safe in difficult times, be a social connector in day to day life and use e-learning device to become literate like Barefoot College, a school in northwestern state of Rajasthan, provides mobile phone training to women to use it in marketplace. In Gujarat, mobile phone allows rural health care workers to compile information about pregnant women and send them messages of checkups and vaccinations.
4. II.3 Gender related barriers to the use of digital devices

The respondents were also asked if there were gender related barriers in the usage of mobile phones. The women reported that men needed the mobile phones much more than women themselves as in many cases their livelihood was linked to mobile phones. Therefore, men purchased better quality phones and also had internet connectivity. As for women, many said they only needed the phones to talk to their relatives back home for which an ordinary family phone was sufficient. The employed women needed to converse with the employer so often. Many women reported not being literate enough and not possessing digital skills to use the phones or computers. Women, who did not have internet on their phones but were familiar with usage, used their husband’s or children phone in the evening. In some families, many men did not like their wives talking on phone especially in the evening when the men were back from work. The women therefore preferred to converse with each other in the daytime.

Regarding the usage of mobile phones by family members especially children, several respondents said it was a common practice not to give phones to young girls as the girls did not need them and could misuse the phones. Moreover, the families had little resources, so could not afford to give phones to all the children. However, if the boys needed phones, the parents tried to provide the same. Similar findings have been shown by other studies in India and other developing countries that access to mobile ownership has been restricted for girls and women since there are restrictions on women’s mobility as well as decisions related to their marriage. In urban parts of India, social media such as Facebook and WhatsApp are often regarded with suspicion, and women were discouraged by their families from using these applications out of fear they may inadvertently put them into contact with men. Women often fear their photos may be leaked or used inappropriately. In rural parts of Uttar Pradesh and Haryana, Khap Panchayats (unofficial governing bodies at village level) often do not allow unmarried women to own cell phones as it is seen as a symbol of sexual promiscuity. A review of studies on usage of mobile phones by girls and women have shown that women face many socio-cultural and gender based barriers in usage, more so in rural areas where women constitute only two percent of the internet users (IT for Change, 2014). In many families, in both rural and urban areas, unmarried girls are not allowed to keep mobile phones lest they start friendship with males, which, is not appreciated. Similarly, there may be restrictions on married women’s use of mobile phones (The Hindu, July, 2015). Many instances have been reported in newspapers, where women faced several restrictions in the use of mobile phones and which were enforced by family members. In several rural and urban homes, a common family phone is available to all the members including women for communication with kith and kin. Conversely, strong patriarchal norms allow male members to own...
personal phones secured with passwords and offering complete privacy for their use (Doron, Assa Jeffrey, Robin, 2013).

Such barriers for women in usage of digital equipment like mobile phones are because of social and cultural barriers, there are poor ICT infrastructure, lack of electricity and inefficient services. Also, women lack digital skills and there is limited online information in languages other than English.

Nazma, 30, housewife, said she wishes to learn smartphone but cannot because she does not own a personal phone. Moreover, her family members including husband expect that she does the household chores rather than wasting time on the mobile phone.

4. II.4 Mobile Applications downloads

In an attempt to study the usage of various mobile phone based applications, a list of fifteen most commonly used mobile-based applications was drawn based on their popularity and ranking. The respondents were asked about the applications they had downloaded on their phones. The study has shown overall low usage of these applications both by men and women. However, women (Fig. 4.II.4) lagged way behind men in the download and use of applications on their mobile phones.

It was found that WhatsApp, YouTube, Facebook, Google Maps and Google were the most popular and highly acceptable applications which were downloaded by 48-58 percent men as compared to only 11-

Figure 4.II.4 Use of popular mobile applications by the respondents (Source: Primary survey)
30 percent women. Email was used by 38 percent men but only by 13 percent women. The application ‘Paytm’ was downloaded by 30 percent men as compared to only 7 percent women. Many respondents (both men and women) said they did not know how to download the applications. The same was done either by their children or the seller from who they had purchased the phones. The FGDs revealed that though less number of women had downloaded these applications on their phones, but more women as compared to men were eager to know and learn and about the apps which could improve their lives.

4. II.5 Frequency of usage of apps

These apps provide a technology-based platform for citizens to connect, transform and shape their own lives for the better. Downloading different applications on the mobile phone did not mean that they were actually used by the respondents. On being asked which of the mobile applications they used on a daily basis, huge gender gaps were found in the same.

Table 4.1 Frequency of usage of apps by males and females

(Source: Primary survey)
While 51 percent men used WhatsApp daily, only 13 percent women did so. Almost 24 to 50 percent males used Facebook, YouTube and Google; hardly 3-8 percent women did so (Fig 4.II.5). A large number of respondents especially females were totally unaware of use of many applications even though they were downloaded on their phones. The usage of apps for payments, entertainment, email, shopping was extremely limited among the respondents.

4. II.6 Reasons for Non-Usage of Digital Devices

The respondents were further asked about the reasons for non-usage of digital devices as well as mobile-based applications. The most common reasons cited by both males and females for non-usage of digital devices and apps were time constraints, unaffordable services, high cost of equipment, lack of skills and complicated as well as unfamiliar technology. The men said they had very limited time to learn new features on mobile phones as they had to earn money to run the household and were busy throughout the day.
Almost 52 percent males and 65 percent females cited time constraints for non-usage of digital devices. In addition, 60 percent women (as compared to 6 percent men) said they had the dual burden of household chores and had to take care of elderly, children and the sick. It was also noted that 7 percent women and 2 percent men cited cultural taboos against the use of digital devices. The other reasons cited by both males and females (20-46 percent respondents) were lack of skills, unaffordable services, complicated usage and high cost of equipment (Fig 4.II.6). The FGDs revealed that men faced self-imposed cultural taboos. They said they were too old to learn digital skills. They felt ashamed learning from their children. Poor Wi-Fi connectivity and high cost of internet connectivity were additional reasons cited by several male and female respondents for lack of use of mobile-based apps.

Rekha Devi, 35, housewife has a smartphone for her personal use but she feels it is complicated to use. She has a lot of household work to do. She depends on her husband and children for using any application other than calling relatives back home.
Training in Digital Skills

4. III Awareness about centers offering computer training and internet usage services

It was found that 25 percent of males and 11 percent of females were aware about the presence of cyber cafés in their respective areas. Only 12 percent males and hardly 2 percent females knew about computer training centers operating in their area (Fig 4.III.1). Most respondents reported that the computer training centers were there for the benefit of children and were not meant for training of adults. The respondents said that due to lack of availability of computers and printout facility at home, the children had to visit cyber cafés to meet the demands of homework.

![Figure 4.III.1 Gender differentiated awareness of computer training centers and cybercafés (Source: Primary survey)](image)

Very few people were aware of computer training facilities at community center and communication information centers. The respondents were further asked if they knew about the recent government schemes and initiatives for enhancing digital literacy such as National Digital Literacy Mission and the Common Service Centres. It was surprising to note that despite several efforts of the Government and advertisements through different media, none of the respondents, either male or female were aware of them. The women were asked if there were any training centers or facilities especially for women in the nearby area. They reported that no such training centers were present for training adults. They said they were willing to
increase the use of digital technology but because of lack of equipment, training and encouragement they lagged behind.

Kalpana, 35, housewife, said her husband owns a smartphone; he can operate the smartphone as well as the computer. Since they don’t have a computer at home, he often visits the cybercafé. She, herself has never been to a cybercafé.

When specifically asked about the presence and conduct of computer training programs in their area, only 4 percent males and females said they were aware. They said that such centers were run by the Government from time to time or NGOs but were meant for training children and youngsters. Some men and women also said there should be training facilities especially for males and females separately as they did not want to learn along with children.

The study reflected the lack of penetration of efforts at enhancing digital literacy of adults to the poorer sections of society at the grassroots level. It is therefore important that for digital inclusion and enhancing ability of people to participate in development and benefit from it. It is necessary to build their digital literacy skills. Special efforts are required to encourage women to come and participate in digital processes and systems.

4. III.2 Steps to increase the use of technology

When the respondents were asked about the steps that should be taken in order to increase the use of digital devices and technology, both men and women equally felt the need of several steps such as imparting training, support from family, availability of facilities and infrastructure as well as access to education. The parents reported that most schools where their children studied were equipped with computers many of which were not in working condition. It was necessary that facilities be maintained in schools and good teachers should be available.

They said there should be more computer training centers and cyber cafés in their vicinity so that students did not have to travel far to learn and do their assignments. There should be women-centered training programs in the use of digital skills.
4. III.3 Readiness to be a part of training

When asked about their willingness to participate in digital literacy training, surprisingly, a large majority of people, 76 percent men and 84 percent women said they were willing to take part in such training programs (Fig 4.III.3). Of the people who did not want to participate in training, the women said they had the burden of performing household chores and thus had no time for training, while men reported being out of the house to work the whole day and therefore the time constraint to undertake training.

![Willingness of the respondents to be a part of the training in digital literacy (Source: Primary survey)](image)

Figure 4.III.3. Willingness of the respondents to be a part of the training in digital literacy (Source: Primary survey)

Most of the respondents, especially the mothers said that they themselves were not educated and were digitally illiterate, but they definitely wanted their children to be educated and digitally literate. The respondents were also ready to bear the cost of training themselves at an affordable price amounting to about 100-200 Rupees per month.
4. III.4 Perceived Benefits of training

The respondents were asked about the benefits of being digitally literate. It was encouraging to find that both men and women equally felt the need of being trained and the paybacks they would receive after the training. They said that a lot of digitally performed operations were making the traditional systems outdated. It was important to be digitally literate if they had to progress. Digital literacy could also lead to better job opportunities, increased income and occupational growth.

![Diagram of benefits](image_url)

*Figure 4.III.4 Perceived Benefits of the training by male and female respondents (Source: Primary survey)*

Some women said that digital literacy was important for them to increase their self-confidence as well as perform day to day tasks. The training could be beneficial for their future job/work prospects (Fig 4.III.4). Digital literacy was important not only for household management but also to keep pace with changes in the society for searching information and for entertainment.
Glimpses of the communities during survey process

Common area in front of houses in Shankar Camp Slum in South Delhi

A computer training centre in Chanderpuri camp in East Delhi

A computer training centre in the surveyed area

A kutcha road in District Chanderpuri Slum in East Delhi
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

A middle aged woman talking on her mobile phone

More males downloaded apps on their phones as compared to women

Women filling water from community taps in Nepali camp in South Delhi

A Shopkeeper and daughter busy with mobile phone in free time
Glimpses from Data collection and FGDs

Rapport formation with the community women

Women responding to the research team

Narrow lanes, small houses made data collection a challenge

Focus Group Discussion session with women at Mansrovar Park

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women
Chapter-5

Developing the Training/ Capacity building Module

This chapter caters to two objectives of our study which were:

**Objective 5:** To design and implement a need based training module to train women in the use of ICTs.

**Objective 6:** To assess the potential impact of training on the uptake of ICT based initiatives available to women and their consequent impact on women empowerment.

The baseline study of the slums and villages reflected the limited knowledge and awareness of urban poor women with respect to digital literacy and use of ICT based initiatives. The ownership of digital devices was limited to mobile phones. More men (59 percent) had smart phones as compared to women (22 percent). The used the mobile phones majorly for making phone calls while some used messaging services, photography, etc. The use of mobile based applications relating to finance matters health care, safety and security, education etc. was extremely limited. There was extremely poor ownership of computers as only 1 percent families were found to be having a desktop or laptop. It was therefore considered appropriate to impart digital literacy training using their smart phones.

It was considered important to train the women in digital literacy skills so that women could benefit from their use by having access to information about various issues, save time, energy and improve the quality of their personal and occupational issues. A gender analysis of the various needs of women was undertaken using the Moser’s framework. This classifies women’s needs into Practical Gender Needs and Strategic Gender Needs.

<table>
<thead>
<tr>
<th>Practical Gender Needs</th>
<th>Strategic Gender Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and fiber</td>
<td>Education (children, women)</td>
</tr>
<tr>
<td>Freshwater</td>
<td>Training and skills development</td>
</tr>
<tr>
<td>Hygiene and Sanitation</td>
<td>Decision making</td>
</tr>
<tr>
<td>Fuel</td>
<td>Income generation</td>
</tr>
<tr>
<td>Housing</td>
<td>Leadership</td>
</tr>
<tr>
<td>Fodder</td>
<td>Access and control over resources</td>
</tr>
<tr>
<td>Healthcare</td>
<td>Community Participation</td>
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</tbody>
</table>

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women
Based on the above needs, women roles have been classified as follows:

1. **Reproduction and Household Roles** - These roles involve childbearing and caring as well as domestic tasks that support the household’s wellbeing, such as cooking, cleaning, fetching water, washing, and attending to the sick and elderly members of the family. It thus not only includes biological reproduction but also the care of the family members. These responsibilities are performed primarily by women and children but not considered as real work by the society.

2. **Productive Roles** - These roles are related to activities that produce goods and services for consumption or trade (growing crops for sale or household consumption). Both women and men can be involved in productive activities, but often their functions and responsibilities differ. However, women often carry out these roles alongside their reproductive roles in a household farm, home/subsistence/production. Thus women’s productive work is often less visible and is even less valued than that of men.

3. **Community participation Roles** - The community managing role of women involve community work such as holding social events, activities to improve or care for community resources (land or irrigation ditches), and/or participating in groups or farmer organizations, participating in group activities of holding leadership roles. Such participation increases the mobility of women, given them access to more information and enables to make more effective and informed decisions often leading to a better status in family and society. Traditionally, men have been participating more often in political affairs of the community (e.g., serving as a chair of the farmers’ association); whereas women contribute their time for free for a social good but now women are also occupying positions in the political system especially with 50 percent reservation for women in local Government.

Considering the needs and roles of women in society as well as based on the findings from the baseline survey, a mind map covering digital literacy needs of women was made (Fig 2.4 page 42). Several existing modules on digital literacy were consulted for their content as well as communication methods used. Some of them were: NDLM, PMGDISHA, GSMA, SCERT, Age Action, etc. It was felt that the existing modules were very generic; involved working a lot more on computers and tablets and in some the difficulty level was somewhat higher and not suitable for the slum or rural women. The most important
point was that the existing module did not fulfill the gender specific needs of women such as the Practical and Strategic Gender Needs.

The training content of the new module for the present study was developed to suit different categories of women learners and depending on the availability of time, money and other resources at hand for the training. One of the modules was of 30 hour duration comprising of 15 sessions, each session being of two hours duration. This module was could be covered in a period of 15 days to about 3 months. This allowed for flexibility to suit the time availability of learner and trainer (Annexure IV).

The other module was of 10 hour duration and could be covered in two to five days depending on the time availability of various groups of women. This module comprised of 10 sessions, each session of one hour. The training module was developed keeping the SMART objectives in mind i.e., Simple/Specific, Measureable, Achievable, Realistic and Time bound. The following guidelines were kept in mind while designing the training module:

1. Each learner is different and may take different amount of time and guidance to learn.
2. Principles of andragogy (adult learning) must be kept in mind throughout the training.
3. There are variations in smart phones; therefore, the trainer has to adapt the content accordingly so as not to confuse the learner.
4. An exercise at the end of each activity should be mandatory part of module.
5. Question and answer time must be provided at the end of each session.
6. The expected outcomes should be met at the end of each day/session.
5. I Training Module for Urban Poor Women (10 hours duration)

**Day 1**  
**Session 1**

**Objectives:** 1. To Introduce the learners to smart phone/ordinary phone buttons.  
2. To train the women in making and receiving phone calls.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>10:00am-10:15am</td>
<td>Registration</td>
<td>-Registration of women participants</td>
</tr>
<tr>
<td></td>
<td>10:15am-10:30am</td>
<td>Ice Breaking</td>
<td>-Games to know each other in an innovative way</td>
</tr>
<tr>
<td></td>
<td>10:30am-10:35am</td>
<td>About the training</td>
<td>-Introducing the participants to the training and its objectives.</td>
</tr>
<tr>
<td>1.</td>
<td>10:35am-10:45am</td>
<td>Functions of Smartphone</td>
<td>Introduction to smart phone</td>
</tr>
</tbody>
</table>

**Exercise:** Ask participants to identify different buttons on the smart phone.

A Smartphone is a cell phone that allows you to do more than just make phone calls and send text messages. It can browse the Internet and run basic software programs like a computer and uses a touch screen to allow users to interact with them. There are thousands of smart phone apps (software programs), including personal-use and business-use programs that can all run on the phone.

- Introduce the parts of a smart phone through a demonstration model

- **Earphone slot:** you can insert earphones here
- **Volume control**
- **Switch on/off button**
- **Screen lock on/off**
- **Home button:** this button exits whatever you are doing and return you to home screen
- **Camera**
- **Charging Point**
<table>
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<tr>
<th>No.</th>
<th>Time</th>
<th>Activity</th>
<th>Instructions</th>
</tr>
</thead>
</table>
| 2.  | 10:45am-11:00am | Making and receiving calls | **Making a phone call on new number**
- Tap on the Phone button by clicking the call icon. Now touch the Keypad button. A number set from 0 to 9 will appear onscreen.
- Dial the number by just touching them. - Once you have entered the number, tap the green call button.
- The keypad will disappear and the call will start.
- When you want to end the call, just tap on red button. The call will be over

**Calling a saved contact**
- Tap on the Phone button by clicking the call icon. Now touch the Keypad button. A number set from 0 to 9 will appear onscreen
- Instead of touching the keypad numbers, click on the contacts option present on the top right/bottom of the screen
- List of contacts appears on the screen. Now search for the contact you want to make the call to from the search icon situated above the contacts option
- Select the contact, and click on call option to make a phone call

**Receiving a phone call**
- When a phone call comes in, your phone will ring
- If the caller is in your contact list, their name will appear on the screen. If not then you will see the phone number only
- Tap/swipe on the green answer button
- You can also reject a call by pressing/swiping the red button

**Exercise:** Each participant to make a phone call to a new no. given and a contact saved.

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<tr>
<th>No.</th>
<th>Time</th>
<th>Activity</th>
<th>Instructions</th>
</tr>
</thead>
</table>
| 3.  | 11:00am-11:10am | How to add a contact | **Adding a contact**
- On your phone’s Home or application screen, tap on the Contacts button
- The Contacts list will appear
- To add a new contact, tap on the Add Contact button or + button
- The Add Contact page will appear. There will be fields that you can fill in. To fill out a field, tap on the field box.
- The onscreen keyboard will popup, allowing you to tap in appropriate details.
- Type the name and number in the given field
- When you have completed, tap on the Save button.
- The person will now be in the Contacts list

**Deleting a contact**
- On your phone’s Home or application screen, tap on the Contacts button

<table>
<thead>
<tr>
<th>No.</th>
<th>Time</th>
<th>Activity</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>11:10am-11:15am</td>
<td>How to add a contact</td>
<td></td>
</tr>
</tbody>
</table>

Session 2

**Objective:** To learn about adding and deleting contacts
Exercise: Add your trainer’s contact number in your phone
Make a phone call to your trainer
Delete your trainer’s number

Expected Outcomes: The learner will
- Be aware of all the buttons of a Smartphone
- Make and receive calls on saved and new number
- Be able to add and delete contacts

Session 3
Objective:-To enable the learners to read, send and reply to messages using SMS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>12:00pm-12:10pm</td>
<td>Reading of text messages</td>
<td><strong>How to read text messages</strong>&lt;br&gt;- Tap on the message button&lt;br&gt;- An entire list of messages will appear&lt;br&gt;- Tap the particular message and it will open up&lt;br&gt;- Read the message and understand it</td>
</tr>
<tr>
<td>2.</td>
<td>12:10pm-12:30pm</td>
<td>Receiving and replying to text messages</td>
<td><strong>How to reply to a text message</strong>&lt;br&gt;- On your phone’s Home or application screen, tap on the Message button&lt;br&gt;- Open the conversation you want to reply to&lt;br&gt;- The conversation screen appears with all the conversation that has happened&lt;br&gt;- You write the message in the text box provided and click on send</td>
</tr>
<tr>
<td>3.</td>
<td>12:30pm-12:45pm</td>
<td>Sending and receiving text messages</td>
<td><strong>How to send a fresh message</strong>&lt;br&gt;- Tap on the message button present on your phone’s home screen. A screen with all the conversation will appear&lt;br&gt;- Click on the pencil icon to send a new message. A new screen will appear with keypad&lt;br&gt;- Enter the contact of the person you want to send the message to&lt;br&gt;- Type the message in the message box given and click on send</td>
</tr>
<tr>
<td></td>
<td>12:45pm-1:00pm</td>
<td>Test your skills</td>
<td>Send a new message to your trainer saying ‘Hi’&lt;br&gt;Reply to the message sent to you by the trainer</td>
</tr>
</tbody>
</table>

Expected Outcomes: The learner will
- Be able to read, reply and send a fresh message through SMS
**Session 4**

**Objective:** To enable the learner to use WhatsApp application

**Benefits:**
- The WhatsApp imports all the contacts of the phone automatically and provide information about who all in your contacts are using WhatsApp application
- All the tools are very easy to use.
- Location, images, status can be shared with friends. Friends can chat with friends without spending any money using WhatsApp on internet enabled devices.
- Messages are sent without any charges to any part of the world provided internet is available on mobile devices.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1.    | 1:00pm- 1:30pm | Functions of WhatsApp application | Introduction
WhatsApp is a free to download messenger app for smartphone. It uses the internet to send messages, images, audio or video. The service is very similar to text messaging services; however, because WhatsApp uses the internet to send messages, the cost of using WhatsApp is significantly less than texting. |

**Downloading WhatsApp**
- Go to play store/Google already installed in your phone and click on it
- A screen appears in which you will have to type WhatsApp in the space provided
- Click on WhatsApp Messenger on the menu shown and then click on Install.
The installing screen will appear showing the percentage of the app downloaded

**Note:** Once the application is downloaded, its icon automatically appears on the home screen.
- Click on the WhatsApp icon present on your phone’s home screen
- A new screen appears. Click on Agree and Continue
- A new screen appears where you are asked to enter your mobile number
- Once you enter your phone number, a verification screen appears in which you have to write the OTP (One Time Password) you have received on the number entered.
- After the verification, now you have to type the name you want on your profile and a display picture. Then click on Next
- Since you are new on WhatsApp, therefore, there will be no chats and a blank screen of chats will appear
- Click on the contact list to start a new chat
<table>
<thead>
<tr>
<th></th>
<th>Time</th>
<th>Activities</th>
</tr>
</thead>
</table>
| 2 | 1:30pm-1:40pm | - Select the contact you want to text to and click on it.  
  **Reading message on WhatsApp**  
  - Tap on the WhatsApp icon  
  - New screen with the list of contacts saved will appear  
  - Tap on any contact whose message you want to read  
  - The new screen opens up the message
| 3 | 1:40pm-1:50pm | **Replying to a WhatsApp message**  
  - On opening the message of a person, tap on the box where “Type a message” is written  
  - The keypad appears and you can type your message you want to convey  
  - Click on the green arrow to send your message
| 4 | 1:50pm-2:00pm | **Sending a fresh message through WhatsApp**  
  - Tap on the WhatsApp icon  
  - New screen with the list of contacts saved will appear  
  - Select the contact you want to send a message - A new screen appears with the person’s name on top and you can type the message in the box by clicking on it  
  - And then click on send arrow, and the message will be sent to the person  
  - Once the message is sent and you see a double tick, it means that the person has received the message but has not seen it  
  - Once the tick is turned to blue color, it means that the person has seen the message you have sent to him/her
| 5 | 2:00pm-2:20pm | **How to form a group on WhatsApp**  
  - Click on the WhatsApp icon present on your phone’s home screen  
  - Your chat page will appear  
  - Click on the top right icon  
  - A new menu appears showing different options  
  - Click on the New Group option  
  - Select the contacts from your list you want to make group with  
  - Once you have selected the contacts, press the green arrow on bottom right corner of your screen and then give a name to your group  
  - After naming the group, click on next e.g.,
<table>
<thead>
<tr>
<th></th>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>2:20pm- 2:30pm</td>
<td><strong>Friends group, family group</strong>&lt;br&gt;- The group has been formed and will be visible to you on your chat screen&lt;br&gt;&lt;br&gt;<strong>Video calling using WhatsApp</strong>&lt;br&gt;- Click on the WhatsApp icon present on your phone’s home screen&lt;br&gt;- Your chat page will appear&lt;br&gt;- Open the chat of the person you want to video call&lt;br&gt;- Click on the video button present on the right hand side of the name of the contact person&lt;br&gt;- Your video call will start</td>
</tr>
<tr>
<td>7.</td>
<td>2:30pm- 2:45pm</td>
<td><strong>How to send photos from the picture gallery using WhatsApp</strong>&lt;br&gt;- Click on the Gallery icon present on your home screen&lt;br&gt;- Select a picture from your gallery by clicking on it for a few seconds&lt;br&gt;- Few option on the top of the screen appears. Click on the share option&lt;br&gt;- A new pop up appears showing you the options to send the picture to&lt;br&gt;- Select the WhatsApp icon and then select the contact you want to share the picture with&lt;br&gt;- Click on the send option to send the picture to your contact</td>
</tr>
</tbody>
</table>

**Exercise**<br>- Form a group of 4 friends and name the group. (e.g. FRIENDS)<br>- Type a message in the new group formed by you and send the message.<br>- Send a picture from your gallery to your friends group

**Expected Outcomes:**<br>- At the end of the session you will be able to:<br>- The learner will understand various functions of WhatsApp<br>- Be able to read, reply and send a fresh message<br>- Independently form a group on WhatsApp<br>- Be able to exchange pictures, messages on WhatsApp

**Session 5**

<table>
<thead>
<tr>
<th></th>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2:45-3:00</td>
<td><strong>Introduction</strong>&lt;br&gt;Himmat plus application is women safety mobile application of Delhi Police.&lt;br&gt;&lt;br&gt;<strong>Function</strong>&lt;br&gt;This is an emergency app in which user raises the SOS alert from the <strong>Himmat App</strong>, and the location information and audio-video is transmitted to Delhi Police control room</td>
</tr>
</tbody>
</table>
**Himmat plus Application**  
- To install the application, click on Play Store icon  
- A screen appears in which you will have to type Himmat Plus App in the space provided  
- Click on the Himmat Plus App and then click on Install  
- Accept the settings by clicking ‘ACCEPT’ button  
- The application starts getting installed and once its installed click on the open option  
- On opening the application, you have to register yourself and fill in the details asked: name, mobile number, emergency number and gender  
- After filling in all the details, click on log in button  
- A new screen will appear in which you will have to write the number sent on your registered mobile number for verification  
- Once the verification is done, your application is ready to use  

**Note:** In case of emergency at any point of time, click on SOS button situated on the lower right hand side of the screen. Some other safety applications are: Nirbhaya SOS App

<table>
<thead>
<tr>
<th>Exercise: How can you use Himmat application in your life</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expected outcome:</strong> At the end of this session the learner will able to learn:</td>
</tr>
</tbody>
</table>
| - How to register herself on Himmat application  
| - How to use Himmat application |

**Snacks**
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>10:00am</td>
<td>Recapitulation of Day 1</td>
<td>A brief introduction of what was done on the first day of training and clearing the doubts of women</td>
</tr>
<tr>
<td>2.</td>
<td>10:15am-10:20am</td>
<td>Using Google</td>
<td><strong>Introduction</strong>&lt;br&gt;It searches for information about (someone or something) on the Internet using the search engine Google.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Information search on Google</strong>&lt;br&gt;-Click on the Google icon&lt;br&gt;-Tap on the box provided, keyboard will appear&lt;br&gt;-Type the information you need to search. For e.g., what to do in heavy menstruation periods, remedies for headache, video on home remedies for good hair, stitching and nutritious recipes the screen will appear.</td>
</tr>
<tr>
<td>3.</td>
<td>10:20am-11:00am</td>
<td></td>
<td><strong>Search for employment</strong>&lt;br&gt;-Click on the Google icon&lt;br&gt;-Tap on the box provided, keyboard will appear&lt;br&gt;-Type the information you need to search. For e.g., Domestic Helper agencies, Job vacancies for teachers, technician, sales person etc.&lt;br&gt;Note: Some online sites for job searching are; Naukri.com, Shine.com, TimesJob.com, Indeed.com, etc.&lt;br&gt;The participants can register (provide some details on any one site)</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td><strong>School admission for EWS Category</strong>&lt;br&gt;-Click on the Google icon&lt;br&gt;-Tap on the box provided, keyboard will appear&lt;br&gt;-Type ‘EWS Admission Delhi Online’&lt;br&gt;-List of schools will appear&lt;br&gt;-Locate the one near your area&lt;br&gt;-Follow the instructions for registration</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td><strong>Image search on Google</strong>&lt;br&gt;- Type what you want to search. For e.g. ‘blouse designs, mehendi design and rangoli’ and click on images&lt;br&gt;- The blouse designs will appear as shown in figure. Click on the image want to open for the design</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td><strong>Video search on Google</strong>&lt;br&gt;- Click on the YouTube link type mehendi songs. Many</td>
</tr>
</tbody>
</table>
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

Exercise:
- Search the list of schools near your area from Google
- Look for images of your interest
- Look for healthy recipes via YouTube

Expected outcome: The learner will be able to learn:
- How to navigate Google
- How to search information and see videos on YouTube
- How to look for different portals using Google

Session 2

Objective:- Usage of Bhim application

Benefits:- All in one for all bank accounts

No Internet Connectivity Required: The BHIM App can transfer funds from one bank account to another without an internet connection. For that, you need to dial *99# from a mobile phone, and this will show a welcome screen with seven options - to send money, check your balance, or see transaction history. So, with BHIM app, a non-smart phone user can also do any transaction from anywhere.

Authentication & Security

<table>
<thead>
<tr>
<th>S.No</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1.   | 11:30am-12:00pm | Using Bhim application | **Introduction**  
It is a government application to transfer money from one bank to another securely  
**How to use Bhim Application**  
- Go to play store  
- A screen appears in which you will have to type Bhim App in the space provided  
- Click on the Bhim App  
- Click on install |
A new screen appears. Click on accept option
- Once the application is installed then click on open
- After the application is installed, its icon will appear on the home screen
- On clicking on the icon a new screen will appear which asks you to verify your mobile number.
- You enter OTP (One Time Password) and then click on next
- After the verification of mobile number, a new screen appears which tells about the applications function. Read them and click on next
- Now you will have to set a pin/ password and confirm it.
After confirming click on the tick mark present on the lower right hand side of the screen
- Once you have confirmed the pin/password choose the language you are comfortable with and click on next
- Once the above steps are done you are ready to use the application and make transactions, by selecting the bank, the account, and by choosing the mode of transfer of money

Note: Some other applications for online transactions are: Paytm, Tez, Hike messenger

| Expected outcome: | The learner will learn: How to use BHIM app for various purposes. |

### Session 3

**Objective:**- Usage of Online Registration System application

**Benefits:**- Centralized data management
- Saves time- there is no need to be physically present for booking appointments
- Secure online payment processing 24/7
- Improved work efficiency

**Customized online registration**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1.    | 1:15pm-2:00pm | Using Online Registration System | **Introduction**
It is a centralized data management system used for booking appointments in hospitals and tracking the medical report

**How to take appointment through Online Registration System (ORS)**
- To install the application, click on Play Store icon
- A screen appears in which you will have to type e-Hospital Online registration in the space provided
- Click on e-hospital online registration and then click on Install
- Accept the settings by clicking accept button
- The application starts getting installed and once its installed click on the open option
- Once the application is installed, its icon appears on the home screen. Click on the icon
- A new screen appears in which you can book appointment with or without Aadhaar
- To book appointment with Aadhaar option, you need to click on With Aadhaar and a new screen will appear in which you will have to fill in the details required and click on proceed.

-A new screen appears in which you will have to fill your Aadhaar number and tick the no objection box.

-After filling the Aadhaar details, an OTP (One Time Password) will be sent to the registered mobile number which needs to be entered. Then click on Submit.
-Once you click on submit, a screen appears in which all the details are shown that are connected with your Aadhaar. After checking the details, if everything is correct, then click on Book Appointment.
- Once you click on submit, a screen appears in which all the details are shown that are connected with your Aadhaar. After checking the details, if everything is correct, then click on Book Appointment.

-Once you click on Book appointment, a message box appears saying ‘SMS will be shortly sent to you giving details of your appointment’. Click on OK.
-By clicking on Ok, you see your details on the screen. Verify it and click on Done.
- Once you click on Done, you will receive a text message showing all your details of appointment.

Note: All the information can be entered and seen in Hindi by...
Field testing of the communication module- In order to field test the communication module, it was administered to a group comprising of 25 urban poor women from a slum. The shortcoming and difficulties encountered were examined and the required changes were made. The training module was then administered to 100 women in four groups, each group comprising 25 women. The women resided in areas near the Gender Resource Centers located at Gagan Vihar, Badarpur and JJ Colony Madanpur Khadar. The women were approached through the personnel of Gender Resource Centers.

The group size was limited to 25-30 participants to enable face to face interaction and participation by the women. Some inclusion criteria were set for training. These were:

- The group should comprise of adult women above 18 years of age
- Women who had basic literacy skills in 3R’s – Reading, Writing and Arithmetic were preferred
- Women currently or formerly using any one form of internet based application
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

- Willingness of family and women themselves to take part in the training
- Access to a smartphone

The services of a local counselor were hired to look into any problems arising out of selection of women for training.

All the preparations for training were worked out including the setting up of venue, refreshments, provision of training kit and gifts as prizes. Also, a multimedia approach was used to deliver the communication module. Various media like ice-breakers (for rapport formation and team building), Flash Cards, PowerPoint presentations, demonstrations, and interactive exercises were used in the training. The module was administered in a very interactive manner to generate positive energy in the group, Question and answer sessions were held in between to clear the doubts of women.

5. II Participatory activities for conducting the training

The trainings were conducted at the Gender Resource Centres. The women were informed well in advance by the GRC personnel about date, time and purpose of training. Banners and posters were put up at the venue three to four days prior to the program to attract the attention of residents.

5. III Conducting the Training

During the administration of the module efforts were made to involve all the participants and ensure that the communication intervention was transacted as planned. A pre and post test related to digital literacy skills was administered before and after the training program.

Background information about age, education and occupation was also taken from the respondents (Annexure VI).

5. III.1 Details of activities

Day 1: Rapport formation and download applications on the phones.

5. III.1.1 Details of Activities Day 2:

Environment building and Registration

For the purpose of building a conducive atmosphere for training, posters, banners, danglers were hung in the room. Further, registration was carried out where entries of the women were made asking their name,
area, and phone number. Then they were given the I-cards, which they had to carry with them on all the days.

**Kick start with a prayer**
To involve women in the training activities, the prayer “Hum Honge Kaamyaab” was sung. It helped to build solidarity in the group and made the mood lighter.

**Ice breaking games**
In order to build a rapport with the group, ice breaking game was planned for them such as **Pasand Na Pasand TV Ke Sang**, wherein each woman was asked to show their face on the television and tell their names along with their likes and dislikes as. This activity helped in unfreezing the audience, allowed them to speak and express themselves. It also gave a chance to gauge their awareness level and set the perfect environment for the upcoming activities.

**Introduction with a poem**
To introduce the topic of Digital Literacy, a poem named “*Maine Mann Mein Li Hai Thaan*” was sung along with the women. A brief regarding Digital Literacy training was also introduced in a friendly manner.

**Flash Cards**
Two sets of flash cards were developed to impart knowledge to women about Digital Literacy: Smartphone and its applications. The use of flash cards helped in exercising the mental process of active recall.

Flash cards I: सीखो डिडिटल ज्ञान, बनो सशक्त और पाओ मान। The set had 16 cards explaining:

- Importance of digital literacy
- Medium of digital literacy
- Smartphone and its features
- Making and receiving calls
- Adding and deleting a contact
- Sending a text message
- Setting an alarm
- Viewing a calendar and setting reminder
- Downloading of applications
- WhatsApp messenger- Registration and sending messages
- Group formation on WhatsApp
• Photography - Pictures and Videos
• Clicking and sending pictures through WhatsApp
• Himmat Application

To make it more interactive, Question and Answer session was conducted. Each session culminated but not without an exercise wherein the participants could test their own learning and clarify if they had any doubts.

5. III.1.2 Details of Day 3

Activities carried out:

Rekapitulation
On 3rd day, the training was started by a warm welcome and a brief discussion on the activities carried out on Day 2. Some doubts were clarified regarding the same. Followed by the discussion, flash cards presentation was started.

Flash cards II: आइए दोहराएँ/सीखो डिडिटल ज्ञान, बनो सशक्त और पाओ मान l The set had 6 cards focusing on the Government based applications used on the day to day basis. The applications covered under this were:

• YouTube
• Google
• Online Registration System
• Bhim Application
• Online FIR

After every application, women were given exercises to make them have hands on knowledge and experience of the applications taught. A demonstration of each application was at first done. The participants were then asked to use the particular application on their own phone. For example, they were asked to type relevant key words or title on Google to view information. These exercises were repeated 2-3 times to enable the women to grasp the technique. Doubts and hesitations were clarified at the end. Prizes were given to good performers in exercises and question answer sessions.
After the completion of the training, a post test was administered to the women to gauge the skills learnt as a result of the training. In the end, a training kit was provided to the women trainees. An informative booklet on digital literacy skills in very simple language was a part of the module.

A certificate of participation was also given to the women who attended the entire duration of training. The group eagerly clicked photographs throughout the session. They were also served light refreshments during the short break.
Chapter 6

Results and Discussions: Outcome of training in Digital Literacy

Training in digital literacy was imparted to 100 women in four batches comprising 25 women per batch. The training was conducted in two Gender Resource centers. The training module was of 10 hours duration spread over a period of three days. Both pre and post-test were conducted to examine the gains in digital literacy as a result of the training program. The results of the communication intervention (training program on digital literacy for urban poor women) have been presented here. It is important to mention that the knowledge and skills of women who came to the GRCs for the training was somewhat higher than the 400 sampled women from 11 slums and two villages from Delhi. This may be because of better education and socio-economic status of the people living in colonies adjoining the GRCs.

In order to see if the differences between pre and post training scores were statistically significant, Chi square test was used. This was because conclusions needed to be drawn about the frequency distribution of the population for different variables and the proportion of cases falling under different categories in the study before and after the intervention of training in digital literacy skills.

6. I Use of mobile phone for making and receiving phone calls

![Figure 6.1 Usage of mobile phone (Source: Primary Survey)](image)

\[ \chi^2 = 10.894 \quad P = 0.004 \]

Figure 6.1 Usage of mobile phone (Source: Primary Survey)
Almost all the women used their phones for calling their relatives or friends. They said they learned the same from their children or by themselves. For some women, the children connected the calls for them and they only did the job of talking on the phone. The graph shows the percentage of women using their phones independently for making and receiving calls with help and who were not able to use their phones for calling. Almost 74 percent women could make phone calls independently, about 20 percent women could use their phones for calling with some help and a mere 6 percent were not able to use it at all (Fig. 6.1). After the training the number of women who could independently use their phone for making calls and receiving increased to 90 percent whereas the rest 10 percent said they would still need help. Many women who had doubts about saving, editing and deleting contacts could clarify them during the training program. Many women, who did not know about how to check missed calls, receive incoming calls or finding contacts could also benefit by the training as they could clarify their doubts and hesitations.

There was a significant difference in pre and post training scores in performance of women with respect to usage of mobile phones for making and receiving phone calls. $\chi^2(2, N=100) = 10.894, P=0.004$.

6. II Usage of internet

Fewer women as compared to men had internet connectivity on their phones. However, many women used internet on their husbands or children phone in the evening. Only 51 percent said they could use internet related applications independently while the rest either needed help (13 percent) or could not use at all (36 percent). However, after the training, the number of women who were able to use internet based applications increased to 71 percent whereas the rest 29 percent said they would still need help.

Figure 6.2 Usage of Internet (Source: Primary Data)
applications independently increased to 71 percent. About 20 percent women said they could use but still needed help at least initially (Fig. 6. II). Only 9 percent women said they could not learn how to use the internet as they were quite old and did not feel the need to use internet. Besides, their children knew how to use the same and could undertake the required tasks for the family.

There was a significant difference in pre and post training scores in performance of women with respect to usage of internet, $\chi^2(2, N=100) = 20.964$, $P=0.000$.

6. III Using Basic functions of phone

This section contains basic functions of a smartphone like making and receiving phone calls, sending SMS, viewing calendar and setting alarm. The results of 100 women respondents are as follows:

6. III.1 Sending and Receiving SMS

Out of the 100 women trainees, about 59 percent women knew how to see and reply to text messages through SMS, 7 percent said they could do with some help. Almost 36 percent of the women could not send or receive SMS. After the conduct of training, as many as 81 percent women were able to send SMS (Fig. 6. III.1). The major challenge in training the women on how to send, receive and read messages was the low literacy level of women. A large number of women were primary school dropouts; other had left their education a long time ago and was totally out of touch of reading and writing. There were other
women who didn’t know typing in English but could do so in Hindi. Therefore, to overcome the limitations related to limited language skills, standardized commonly used messages were used. The women found this activity very useful as they required using SMS on many occasions. There was a significant difference in pre and post training scores in performance of women with respect to sending and receiving messages, $\chi^2(2, N=100) = 22.553$, $P=0.000$.

6. III.2 Use of Calendar on the phone

![Calendar Use Chart](image)

Table: Percentage of Respondents

<table>
<thead>
<tr>
<th></th>
<th>PRE</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independently</td>
<td>68</td>
<td>87</td>
</tr>
<tr>
<td>With Help</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Not able to use</td>
<td>26</td>
<td>3</td>
</tr>
</tbody>
</table>

$\chi^2 = 21.570$  $P=0.000$

*Figure 6. III.2 Usage of Calendar (Source: Primary Data)*

Calendar was another basic function that was taught in the training. Even before the training, as many as 68 percent women knew how to see a calendar and set a reminder on phone. About 6 percent women required help whereas 26 percent women said they were not able to see the calendar or set a reminder. After the conduct of training, as many as 87 percent women could use the calendar on phone independently (Fig. 6.III.2). Another 10 percent said they knew how to use the calendar but needed help for setting reminders. Only 3 percent women said they would not be able to use calendar or reminder on phones. This was because of poor literacy level, lack of need and low motivation of the women for the same. Some women also said most of the times there is already calendar on the wall, where was the need to see the calendar on the mobile phones. There was a significant difference in pre and post training scores in performance of women with respect to usage of calendar on the mobile phone, $\chi^2(2, N=100) = 21.570$, $P=0.000$. 
6. III.3 Setting Alarm

![Chart showing percentage of respondents setting alarm independently, with help, or not at all, pre and post training. Pre-training data: 61% independently, 5% with help, 34% not able to use. Post-training data: 84% independently, 10% with help, 6% not able to use. χ²(2, N=100) = 24.915, P=0.000.](image)

When asked about how to set an alarm, more than 60 percent women said they could do so independently. Setting alarm was required as they had to wake up early to fill water, cook and send children to school. After the conduct of training, the number of women who learned to set an alarm increased to 84 percent. Almost 10 percent women as compared to five percent earlier said they would need help initially while six percent women (as compared to 34 percent earlier) said; they would not be able to set the alarm (Fig. 6.III.3).

There was a significant difference in pre and post training scores in performance of women with respect to usage of alarm, χ²(2, N=100) = 24.915, P=0.000.
6. IV Use of Mobile Applications

Women were also imparted training in selected mobile phone applications which was selected on the basis of analyzing their Practical as well as their Strategic Gender Needs as shown in Fig 2.4.

6. IV.1 Use of WhatsApp

![Figure 6. IV.1 Usage of WhatsApp (Source: Primary Survey)](image_url)

\[ \chi^2 = 13.723 \quad P=0.001 \]

WhatsApp is the most widely used application worldwide because of the ease of sending messages. It sends free messages, pictures, and videos at no cost (except the cost of internet connectivity). Before training as many as 55 percent women knew how to use WhatsApp application independently whereas 11 percent could use it with the help of their children. 34 percent women said they were not able to use WhatsApp at all. The women were however very eager to learn more about the application. They also did not know the procedure of forming groups and had doubts in searching contacts. The learnt the activity eagerly and with enthusiasm. After the training, almost 72 percent women could use WhatsApp application independently including forming groups but 16 percent said they would need help from someone. The women were very excited to make group of friends and relatives and felt that these were very useful for them. Only 12 percent women as compared to 34 percent earlier said they would not be able to use WhatsApp even after the training (Fig. 6. IV.1). these women also said they could communicate face to face with people and there was no need to learn WhatsApp. They had lots of household work to do which would get disturbed.
There was a significant difference in pre and post training scores in performance of women with respect to usage of WhatsApp application, $\chi^2(2, N=100) = 13.723$, $P=0.001$.

6. IV.2 Video Calling

![Figure 6. IV.2 Video Calling (Source: Primary Survey)](image)

$\chi^2=11.004 \quad P=0.004$  

*Figure 6. IV.2 Video Calling (Source: Primary Survey)*

Video calling facility was considered very important by the women as it helped them to stay in touch with their family staying far away from them. Many females had some of their children living in the villages and looked forward to talk to them especially through video call. While 63 percent women said, they had learnt about how to make and receive video calls independently, 37 percent did not know how to do so. After the training, a larger number of the women (77 percent) could make video calls on their own, 9 percent said they would still need help and the rest 14 percent said they would not be able to use the facility on their own. Somebody who would connect the call for them and they would talk (Fig. 6. IV.2).

There was a significant difference in pre and post training scores in performance of women with respect to usage video calling, $\chi^2(2, N=100) = 11.004$, $P=0.004$. 

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women
6. IV.3 Clicking and sending pictures

![Graph showing the percentage of respondents clicking and sending pictures](image)

\[ \chi^2 = 13.170 \quad P = 0.001 \]

*Figure 6. IV.3 clicking picture (Source: Primary Survey)*

Clicking and sending pictures to friends and relatives was a very popular activity among the women. A large number of women (76 percent) knew how to click and send pictures through WhatsApp, while 24 percent either needed help or did not know the same at all. After the training program as many as 90 percent women could perform the task independently (Fig 6. IV.3). The rest 10 percent women said they could do the same with some help. They could click the pictures but faced problems in sending the same. The women were trained to send pictures clicked directly through WhatsApp as well as select and send...
picture from the photo gallery. They were also demonstrated the method of deleting superfluous pictures from the photo gallery to permit enough storage space on their phones.

There was a significant difference in pre and post training scores in performance of women with respect to clicking and sending of pictures, $\chi^2(2, N=100) = 13.170, P=0.001$ and sending pictures, $\chi^2 (2, N=100) = 13.043, P=0.001$

6. IV.5. Searching for information (Use of Google)

![Figure 6. IV.5 Searching information (Source: Primary Survey)](image)

$\chi^2=21.594 \quad P=0.000$

Searching for information such as of recipes of food, designs of garments and mehendi (henna application) were a craze among many women. Approximately 64 percent women were able to search information independently on the phones. Another 4 percent said they needed help and 32 percent had no idea how to search information. The women were imparted training on Google search related to search for nearby schools, dates of filling forms, design of outfits. The session was quite popular among the women as they learned more about the activity. After the training session, 78 percent women could search for information all by themselves (Fig. 6. IV. 5). Another 10 percent women felt that they could search information with someone’s help and 12 percent said they still could not search information.

There was a significant difference in pre and post training scores in performance of women with respect to searching of information, $\chi^2(2, N=100) = 21.594, P=0.000$. 

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women
6. IV.6 Connecting to YouTube

Figure 6. IV.6 Usage of YouTube (Source: Primary Survey)

YouTube was a very popular application especially among the younger women. Before the training was conducted, only 43 percent of women knew how to use YouTube, 19 percent said they needed help and the rest 38 percent said they could not use the application. The women were imparted training on how to download YouTube on their mobile phones and how to search for videos by typing key words. The women searched for videos of nutritious and other recipes, household remedies, healthcare, etc. After the training session, 74 percent of women could do so independently (Fig. 6. IV. 6). Another 13 percent could use it with help and the rest 13 percent could not use the same at all. They said their children were proficient in the task and enable them to watch videos on the mobile phone. They said, because of their limited/ no literacy, it was difficult for them to learn.

There was a significant difference in pre and post training scores in performance of women with respect to connecting to YouTube application, $\chi^2(2, N=100) = 14.182$, $P=0.001$. 

$\chi^2 = 14.182 \quad P=0.001$
6. IV.7 Online bill payments

There are different applications for online payment of bills. When asked from women about the payment of bills, only 6 percent knew how to pay bills independently through Paytm and majority of women (94 percent) did not know how to use any online payment application. BHIM while is a Government approved application used for payment of bills and other transactions. Only 6 percent women knew how to use BHIM application and 85 percent did not know how to use it. After the training was conducted, only 37 percent women handle BHIM application independently while 23 percent said they could need help, another 40 percent women said they would not be able to use the application because of their limited education and the complexity of the app (Fig. 6. IV.7).

However, the major challenges were that many women did not have bank accounts while for many others accounts, mobile number and Aadhaar cards were not linked making it impossible for them to use the BHIM application. They were also scared of making mistakes and said that for transferring money to their villages they used the services of agents who charged the commission from them. The women were however very excited that they could pay their bills sitting at home.

There was a significant difference in pre and post training scores in performance of women with respect to online bill payments, $\chi^2(2, N=100) = 106.753, P=0.000$. 

![Figure 6. IV.7 Usage of BHIM (Source: Primary Survey)](image)
6. IV.8 Online Shopping

The women were asked if they use any online shopping applications. Only 6 percent of women used shopping application independently and a large majority of women (88 percent) did not know how to use any online shopping application. The women were eager to learn about the same as they had heard of the trend from other women as well as they knew about discounts, offers on online shopping. Training was imparted to women about online shopping from Myntra and Jabong. After the training, 48 percent women said they would be able to do online shopping independently, but 37 percent said they would need help and 15 percent said they would not be able to do the same at all (Fig. 6. IV.8). Some other challenges were lack of credit cards/ debit cards.

There was a significant difference in pre and post training scores in performance of women with respect to usage of online shopping application, $\chi^2(2, N=100) = 48.887$, $P=0.000$. 

$$\chi^2 = 48.887 \quad P = 0.000$$

*Figure 6. IV.8 Usage of online shopping apps (Source: Primary Survey)*
6. IV.9 Online Registration System (ORS)

ORS (Online Registration System) is a Government approved mobile application for booking online appointment with doctors placed in different hospitals. About 10 percent women knew about the application and had used it independently while 80 percent did not know about the application at all. After the training, 40 percent women said they would be able to use the application independently, while 29 percent still felt that they could use the application with someone’s help (Fig 6. IV.9). Another 31 percent said, it would not be possible for them to use the application. Many women said, in case of illness they consulted nearby doctor (private) and did not go to Government or private hospitals. The women were imparted training in what the application was about and the steps to be followed in registration.

There was a significant difference in pre and post training scores in performance of women with respect to usage of Online Registration System application, $\chi^2(2, N=100) = 107.636, P=0.000$.

$\chi^2 = 107.636 \quad P= 0.000$

Figure 6. IV.9 Usage of ORS Application (Source: Primary Survey)
6. IV.10 Himmat Application

Himmat application is a Government approved online safety application which helps women to feel and be safe whenever they are alone. It also helps women to contact the police and her family members in one click. This application also works in offline mode. When women were asked about this application, majority of them (91 percent) did not know about it or how to use it and only 7 percent were using this application independently. After the training, 54 percent women said that it was easy to use and they could use the application (Fig. 6. IV.10). There were still 28 percent women who felt they would require help to use application whereas 18 percent said they would not be able to use the Himmat application. There was a significant difference in pre and post training scores in performance of women with respect to usage of Himmat application, $\chi^2(2, N=100) = 126.412, P=0.000$.

6. IV. 11 Online FIR

None of the women from the 100 respondents knew how to lodge an online FIR except one. The 1 percent women who knew about online FIR was because her husband was a police inspector. The women were made familiar with the website where FIR is to be lodged. They were explained the steps to be taken to lodge an FIR except the SUBMIT step. The training session brought some clarity about the steps to be followed.
6. V Comparison of pre and post training scores

![Comparison of pre and post training scores](image)

*Figure 6.V. Differences in pre and post training scores related to use of different features on the mobile phone (Source: Primary Survey)*

![Comparison of pre and post training scores](image)

*Figure 6.VI. Difference between pre and post training scores related to various mobile applications (Source: Primary Survey)*

The summary of pre and post training scores is shown in Figures 6.V and 6.VI which highlight considerable gains in skill levels of women in using various features of the phone as well as in using mobile based applications. A large number of women were already familiar in making phone calls before the training but they gained in terms of learning properly how to save and search for contacts and how to...
see missed calls. There were considerable gains after the training in terms of usage of basic features of the smartphone, how to send and receive SMS, how to set and alarm and a reminder, how to use the calendar and to browse the internet for information. The women were also very eager to learn about all these aspects since they needed them regularly in their day to day life as well as to fulfill their occupational roles.

In terms of usage of various mobile applications, some women were already familiar with using WhatsApp, watching video on YouTube and Google search. However, the women were not at all familiar with apps such as Himmat Plus, BHIM and Online Registration System for seeking appointment with doctors. After the training, there was a significant increase in the number of women who could use Google search, WhatsApp and YouTube. In addition, 50-70 percent women learnt about how to use Himmat plus App (for safety), BHIM App (for payments) and ORS (for appointments). Thus, the need based training program on digital literacy for women showed very promising results in terms of gain in the skill level of urban poor women. Had the training program been for a longer duration, the absorption of information and skills as well as the coverage of the women could have been enhanced. Another important aspect of the training is the formation horizontal learning networks which develop among the participants as well as with the family members to clarify the doubts and the hesitations in the use of technologies. Women who are interested in learning can benefit by communicating with each other and asking for clarifications.
Photographs

Glimpses from Training Sessions

Environment Building Tools for training – BANNER on display at the venue

Environment Building Tools for training – POSTERS on display at the venue

Registration of women for the training

Women being given I-Cards for Training
An innovative way of introducing self on dummy T.V.

Prized possessions-Ladies with their smart phones

Women learning about Digital Literacy

Ladies at group work-learning to use smart phones
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

Training through Training Aids - Flashcards

Training session in progress

Training session on “How to make calls”?

Training session on “How to use Calendar”?
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The “Photography Session”- women taking selfies with the trainers

The “Youtube” Experience: Happy Faces

Participant using “WhatsApp” for clicking and sending pictures

Trainer conducting session on “Himmat Plus Application”
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Participant using “BHIM” for making online transactions

Participant demonstrating using “ORS” for making online appointment with doctor

Women posing with certificates of participation at Gagan Vihar

The line up – women with certificates of participation at J.J Colony
6. VII Recall of digital literacy skills after three weeks

A recall of the various digital literacy skills was undertaken three weeks after the training had been conducted. The Gender Resource Center personnel were informed of the date well in advance. They in turn informed the women trainees to come to the GRC on the scheduled date and time. About 50-60 percent women attended the follow up session. The highlight of the recall session was that there was a very good retention of the skills learnt during the training. While in some cases there was a drop in the number of women who could use the application or feature independently, in others, the recall scores were higher than the post training scores. This was because women had been practicing the various phone features as well as applications and clarifying their doubts from friends and family members. During the recall it was found that almost all the women could use a smart phone independently. 90 percent women could use internet on their phones (as compared to 71 percent in the post test). Majority of women (88 percent) said that they could send messages as compared to 81 percent in the post test. As many as 90-94 percent women could use the calendar and set the alarm as compared to 84-88 percent women in the post test.

In terms of using various applications such as WhatsApp, YouTube and Google search 88-92 percent women could use them in the recall as compared to 72-77 percent women during the post test. There was no change in the use of Online Registration System as 53-54 percent women said they could use the said at the time of recall as well as immediately after the training. In case of Himmat Plus application, 68 percent women reported their ability to use the application independently as compared to 59 percent earlier. However, women found the BHIM application to be complicated and only 34 percent women during the recall said that they could use the application independently as compared to 48 percent women after the training.

The high scores of independent performance of women in using various features and applications on mobile phone are though very encouraging can be explained by two factors: the first factor was the inquisitiveness of the women and their willingness to learn new features on mobile phone from the fellow trainees, friends and family members. They said they kept on trying the features on their phones. It was encouraging to find that the women found the booklet given to them to be very handy, simple and easy to understand and very informative.

The second reason for higher scores in the recall session may be that the more active women who had higher proficiency in the usage of mobile phones reported for the recall meeting leading to higher scores of skill acquisition.
Chapter 7

Conclusion

The present study has shown poor digital literacy skills of both males and females among the urban and rural poor in Delhi. There were gender gaps in the ownership of mobile phone, smart phones as well as internet connectivity on the phones. While the phone was being used for making and receiving phone calls by both males and females alike, the other functions of the phone and applications were used more by males as compared to females. The literacy and education levels of males were considerably higher than the females. The ownership of computers was extremely limited among the poor with hardly one percent of the sampled population reported owning a computer. Most of the digital functions were performed with the help of mobile phones. Therefore, the training on digital literacy could be given to the women only through the use of mobile phones. Despite gender based differences in ownership and use of mobile phones, many women were eager to learn digital literacy skills to improve their personal as well as occupation lives and lifestyles.

The results of the pre and post test of the training of digital literacy have shown that it was much easier for women to learn about sending messages through WhatsApp, SMS, clicking and sending pictures, setting alarm and seeing the calendar, video calling as well as Google search because they often needed these services in their day to day lives. On the other hand, they faced higher level of difficulty in learning various mobile applications such as Bhim, ORS, online shopping etc to name a few. This was because of several reasons. One was the lack of need of the women to use these applications. The other reasons were lack of own bank accounts, lack of ownership of credit/debit cards and non linkage of Aadhaar numbers to their bank accounts. Many of the applications were available only in English, making it difficult for many women to read them and fill up information. They were scared to follow the steps in apps as they were afraid of sharing their information and for fear of actually booking an appointment or filing an FIR. In terms of online shopping applications, the women said they did not need the same and preferred buying from shops by making cash payments. The study has shown that if various operations have to be done by the digital mode, it is important to train people to do so but, at the same time it is important to create a need in the people to use the online modes. Since women have hitherto been excluded from the use of digital technologies it is very important to integrate them as an important stakeholder in digitalizing India.
It is seen that even resource poor and non-semi-literate women are aware of the power of digital technologies. If women are given an opportunity, they can use ICTs to advance their basic needs and interests. The present study has shown that when contextual training based on a thorough analysis of the Practical and Strategic Gender Needs of women is imparted to women in safe, secure and familiar environment, it is well accepted by them with eagerness and enthusiasm. It is important to provide women access to digital devices and support services such as internet connectivity at affordable prices to enable them to use the digital technologies. It is also important to have separate training spaces for women with trainers familiar in the local language who can deliver the training at the level of the women. This is important because the primary survey has shown lack of willingness of women and feelings of embarrassment in learning in the premises of training centers meant for children. This implies that even if the venue is same as that for training of children, the time slots for training women or men need to be different and meant entirely for them to make them feel comfortable. Since the use of digital technologies has all round impact on various domains of education, health, employment and environmental sustainability; such training can actually help women to improve their confidence and enable them to improve the quality of their personal and occupational life. Women can also use digital skills to look for more employment options and opportunities, can enhance their own businesses and enhance their income ultimately leading to improved quality of life as well as to their own empowerment. It is therefore important to move on from ‘Digital Divide’ to providing ‘Digital Opportunities’ to the most marginalized sections of society including poor urban and rural women.
Limitations of the study:

The study had the following limitations:

- Many respondents were not willing to give their time for the survey. Moreover, it was a challenge to conduct the survey among the narrow lanes and clustered houses in various slum areas. In many cases there was no place to sit and discuss issues with the women.
- There were few open spaces to conduct FGD or use other qualitative methods of data collection.
- Many of the computer training centres present in the slum clusters were closed during the visits to the sites making it impossible to communicate with the trainers/managers at the centre.
- There were no venues in the slums with seating space, electricity and projection facilities where the training for women could be organized.
- The training was therefore conducted at GRCs wherein the women who came for training were at a little higher level of literacy as well as digital literacy as compared to the average women living in slum clusters.
- The limited literacy/nil literacy levels of women posed a major challenge to the trainers while imparting digital literacy training.
- Women who were above 40 years of age were not very responsive towards the training.
- Many women did not have access to a smartphone as well as internet connectivity at home, making it difficult for them to practice what they had learnt, eventually leading to de-learning and forgetting the skills learnt.
- Women were only free for a limited time during the day so the training time had to be adjusted to suit their needs.
- The duration of training could have been spread over a longer period with more hours to enhance the absorption and retention of information and skills. This was not possible in the study due to limitation of resources.
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

Recommendations of the study

- Relevant content based on PGN, SGN
- Enable improved personal and occupational aspects
- Access to computer/mobile and internet
- Accessibility of training location
- Effective training methods and materials
- Clear language in local dialect
- Privacy and Security
- Non-threatening environment
- Positive orientation of family to training
- Affordability and connectivity

*PGN- Practical Gender Needs, SGN- Strategic Gender Needs

Figure 8. I. Determinants of effective training for women in ICTs (Source: Author’s representation with inputs from FAO, 2018)

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Recommendations of the study

- It is important to enhance awareness about digital literacy needs of both men and women for better income, efficiency in work and output.

- Women need to be given special encouragement to acquire digital literacy.

- There is an urgent need to create demand for the use of ICTs by women.

- The existing training infrastructure in the form of training centers available in communities could also be used for training women.

- There should be special time slots for training women exclusively so that the hesitation experienced by them is minimal.

- The women must feel safe with the trainer as well as by the training environment and location.

- The training environment needs to be non-threatening.

- The timings of the training should be suited and managed according to the availability of women of the community.

- However, the training curriculum must be based on an analysis of their Practical and Strategic Gender Needs of women.

- The training should preferably be imparted by females who speak in the locally understood language and who can come down to the level of the women.

Figure 8.I above reflects the recommendations emanating from the present study
References

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Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women


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Annexures

Annexure I

INSTITUTE OF HOME ECONOMICS
UNIVERSITY OF DELHI
F-4, Hauz Khas Enclave, New Delhi-110016
Phone No: 26532402, 46018108, 26516616 (Fax)

Dated 3 May 2018

To
Dr Savita Aggarwal
Institute of Home Economics
F-4 Hauz Khas Enclave
New Delhi

Subject: EC approval for the protocol titled “Opportunities and Challenges in Digital Literacy: Assessing the Impact of Digital Literacy Training for Empowering Urban Poor Women”

Dear Dr Savita Aggarwal,

The Institutional Ethics Committee reviewed your protocol titled “Opportunities and Challenges in Digital Literacy: Assessing the Impact of Digital Literacy Training for Empowering Urban Poor Women.” In its meeting held on 3 May 2018 at Institute of Home Economics. The following members were present in the meeting:

1. Dr Nalin Mehta
2. Mr. Ashwani Kumar
3. Dr. Bani Tamber Aeri
4. Dr. Renu Arora
5. Dr. Archana Burman
6. Dr. Geeta Pankhani
7. Dr. Mita Tuli
8. Dr. Charu Gupta

After examining your proposal, the Ethics Committee hereby gives approval to the protocol entitled: “Opportunities and Challenges in Digital Literacy: Assessing the Impact of Digital Literacy Training for Empowering Urban Poor Women”.

IEC experts to be informed about the progress of the study after every 6 months, any SAE occurring during the course of the study, any changes in the protocol and patients information sheet/ informed consent form and needs to be provided with the summary of the final report to facilitate protocol achieving.

Be informed that the Ethics committee are based on ICH-GCP, Schedule Y and ICMR guidelines.

[Signature]

Dr Charu Gupta
Member Secretary
Institutional Ethics Committee
Institute of Home Economics
(University of Delhi)
Information Sheet

Title of the study: Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy training for empowering urban poor women

Background of the study:
Namaste! We work at the University of Delhi. We are conducting a study to examine the gender differentials in ways in which urban and rural poor women and men access, use and experience various ICTs, and to access the impact of training in digital skills on the uptake of ICT enabled initiative by women. You are being asked to participate in the research study. We would like to give a brief introduction about our work before we begin. Please listen to this information carefully, you can ask questions about anything which you do not understand before deciding whether or not to participate.

Why is the study being done?
In this research we will be examining the existing knowledge, digital skills, barriers and problems faced by urban and rural poor men and women in the use of ICTs. Later on, we will work towards capacity building of women in digital literacy skills which will enable them to use the ICT based programs and derive benefit from them and ultimately empower them.

What will happen if you take part in this study?
If you participate in this study, you and your family will be asked some questions about your education, occupation, and access to digital equipment’s, awareness and usage of digital technology, problem faced while using these technologies. This will take about 30 minutes. The decision on your participation will be made by you only.

Who can take part?
Adults, both men and women in the age group 18-49 years can participate in the study.

Type of research intervention:
The study is a combination of both exploratory as well as interventional research. After conducting the survey selected women who are willing to participate will receive training in digital skill in a two-days training program.

Procedure:
Capacity building module comprising of various media will be used to train women in digital skills. Collaboration will be sought from various NGOs, local leaders, and GRC working in the area.

Duration:
The study is spread over a period of 15 Months. Preliminary data collection would be done over a period of one to two months. This will be followed by capacity building of women in digital skills followed by data analysis and report writing.

Voluntary participation:
Your participation in the study is voluntary. You can choose to say ‘No’ and this will not involve any penalty.

**Risks & discomforts:**
You and your household will not be exposed to any risks by participating in this study. A trained enumerator will be asking you questions so that you do not feel any discomfort while interviewed.

**Benefits:**
Yes, many benefits will come to the female participants for e.g.: selected women will be trained in digital skills; they in turn will be instrumental in training other women. Also, evidence will be generated for problems faced while using digital technology which will be communicated to policy makers who can address those issues. The study will also create evidence, if digital literacy training can enhance usage of ICT based initiative by women.

**Reimbursements:**
The participants in the study will not be provided with any payments.

**Confidentiality:**
All information about the respondents will be kept confidential at all stages of the study. Their personal data and identity would not be revealed at any stage of the study.

**Whom to contact:**

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अनुलग्नक I (b)
इन्स्टिट्यूट ऑफ होम एकनॉमिक्स
dिल्ली विश्वविद्यालय
एफ-४, हौज़ खास एन्क्लेव, नई दिल्ली-११००१६
जानकारीशीट

अध्ययन का शीर्षक: डिडिजल साक्षरता के अवसर और चुनौती: डिडिजल साक्षरता प्रशिक्षण का आंकलनप्रभाव शहरी गरीब महिलाओं को सशक्त बनाने के लिए

अध्ययन की पृष्ठभूमि:

नमस्ते! हम दिल्ली विश्वविद्या या में काम करते हैं। हम एक अध्ययन कर रहे हैं जिसके अंतर हम ये देखेंगे शहरी गरीब पुरुषों और महिलाओं सूचना संचार और तकनीकों का किस तरह उपयोग करते हैं। हम आपसे इस अध्ययन का भागीदार बनने के लिए खूब से खूब आपको अपने काम के बारे में बताना चाहेंगे। ये जानकारी का ध्यान से सुने, क्यूंकि ये सब समय कुछ न समझ आने पर आप सवाल पूछ सकते हैं।

यह अध्ययन क्यों किया जा रहा है?

इस अध्ययन में हम देखेंगे की शहरी गरीब पुरुषों और महिलाओं को डिडिजल तकनीकों का कितना ज्ञान और कौशल है और किन बाधाओं और परेशानियों से गुज़रना पड़ता है। बाद में हम महिलाओं के डिडिजल साक्षरता की क्षमता का निर्माण करेंगे जिससे वो सूचना संचार का इस्तेमाल करके में सक्षम हो जाए ििससे परिवार की तरकीब और सभी सशक्त बनने।

इस अध्ययन में भागीदार बनने से क्या होगा?

अगर आप इस अध्ययन के भागीदार बनते हैं तो आप और आपके परिवार से हम कुछ सवाल पूछेंगे आपकी पढ़ाई और नौकरी के बारे में, डिडिजल उपकरणों की पहुंच, जागरूकता और प्रयोग के बारे में, और क्या परेशानियां इन सबके प्रयोग में आती है। ये सब जानकारी लेने में हमे लगभग 30 मिनट लगेंगे। आपको इस अध्ययन का भागीदार बनना है या नहीं ये फैसला आपके ऊपर ही होगा।

कौन कौन भाग ले सकता है?

पुरुष और महिलाएं जो 18-49 वर्ष के हो, इस अध्ययन में भाग ले सकते हैं।

अनुसंधान हस्तक्षेप का प्रकार:

ये अध्ययन खोज पूर्ण और हस्तक्षेप अनुसंधान का मेल है। इस सर्वेक्षण का आचरण करने के बाद इक्कु चुक महिलाओं कि दिन का डिडिजल अंश में प्रशिक्षण दिया जाएगा।

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women
समय:

यह पूरा 15 महीने का है। प्रारंभिक डेटा संग्रहण 3 से 4 महीनों में किया जाएगा। उसके बाद महिलाओं को डिजिटल कौशल पर क्षमता निर्माण किया जाएगा। फिर डेटा विश्लेषण होगा और रिपोर्ट लिखी जाएगी।

स्वेच्छिक भागीदारी:

इस अध्ययन में आपकी भागीदारी स्वेच्छिक है। आप चुन सकते हैं की आपको इस में भाग लेना है या नहीं, आपके न बोलने पर आपको कोई भी नुकसान नहीं होगा।

जोखिम और असुविधाएँ:

इस अध्ययन में भाग ले कर, आप और आपका परिवार किसी भी जोखिम के भागी नहीं बनेंगे। एक प्रशिक्षित प्रणाली आपसे सवाल करेगा ताकि आपको जवाब देते हुए कोई असुविधा न हो।

लाभ:

इस अध्ययन में भागीदारी से महिला, पुर परिवार को अनेक लाभ होंगे। डिजिटल कौशल पाकर महिलाओं पुर परिवार का काम और भी सुविधाजनक से कर पाएंगी। बच्चों को पढ़ने में मदद ज्यादा कर पाएंगी। साथ ही सभी को डिजिटल साक्षरता पाने के लिए प्रेरणा मिलेगी। इस अध्ययन में सबूत इकट्ठा करेगा जिससे डिजिटल साक्षरता का प्रशिक्षण महिलाओं के सूचना संचार और प्रौद्योगिकी के प्रयोग को बढ़ाएगा।

भुगतान:

अध्ययन के प्रतिभागियों को कोई भी भुगतान नहीं दिया जाएगा।

गोपनीयता:

अध्ययन के हर पद पर प्रतिभागियों की सारी जानकारी गुप्त रखी जाएगी।
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

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INSTITUTE OF HOME ECONOMICS  
University of Delhi  
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Informed Consent Form

**Title of the study**: ‘Opportunities and Challenges in Digital Literacy: Assessing the impact of digital literacy training for empowering urban poor women’

I ________________ a resident of ___________________________ have read the information in the study information sheet/have had the study information sheet read out to me. I am over 18 years of age and exercising my free power of choice, hereby willingly give my consent of the study. I certify that:

1. I have fully understood the information provided about the study.
2. My rights and responsibilities have been explained to me by the investigator.
3. I have been informed that there are no known risks associated with this study and explained the possible benefits.
4. I understand that my participation in the study is voluntary and I am free to withdraw without giving any reasons, without my legal rights being affected.
5. My identity will be kept confidential if the data is published or presented in any scientific meetings
6. I have been provided with information about individuals who I can contact to seek clarification during the study period. I have also been provided a copy of the study information sheet and the consent documents.

…………………………
Signature of the participant

…………………………
Signature of the person taking consent

…………………………
Signature of the Principal Investigator

Date ________________
अनुलग्नक I (d)
इन्स्टिट्यूट ऑफ होम एकनॉमिक्स
dिल्ली विश्वविद्यालय
एफ-४, हौज़ खास एन्क्लेि, नई दिल्ली-१००१६

अध्ययन का शीर्षक: डिडजटल साक्षरता के अवसर और चुनौती: डिडजटल साक्षरता प्रशिक्षण का आकलन प्रभाव शहरी गरीब महिलाओं को सशक्त बनाने के लिए

मैं भागलकर का/ की निवासी हूं। मैंने अध्ययन जानकारी शीत पढ़ ली है/ पढ़कर सुना दी गई है। मेरी आयु १८ वर्ष से अधिक है, तथा मैं अपनी स्वेच्छा से इस अध्ययन के लिए अपनी सहमडत देता/ देती हूँ। मैं घोषित करता/ करती हूँ:

१. मैंने अध्ययन के बारे में दी गई सारी जानकारी समझ ली है।

२. मेरे अधिकार और निम्नलिखित मुझे समझ दी गई है।

३. मुझे बताया गया है, की इस अध्ययन से कोई भी जोखिम जुड़ा नहीं है और संभावित लाभ के बारे में भी मुझे बताया गया है।

४. मैं समझता/ समझती हूँ कि, कोई भी कारण दिए बिना मैं अपनी भागेदारी वापस लेने के लिए स्वतंत्र हूँ। इससे मेरे कोई भी कानूनी अधिकार प्रभावित नहीं होंगे।

५. अगर यह एटा प्रकाशित या किसी वैज्ञानिक बैठकों में प्रस्तुत किया जाता है तो मेरी पहचान गोपनीय रखी जाएगी।

६. मुझे उन सभी व्यक्तियों के बारे में जानकारी दी गई है, जिन्हें मैं अध्ययन की अवधि के दौरान स्पष्टीकरण के लिए संपर्क कर सकता/ सकती हूँ। साथ ही अध्ययन जानकारी शीत और सहमडत के दस्तावेजों के एक प्रति मुझे भी उपलब्ध कराई गई है।

------------------------
भाग लेने वाले के हस्ताक्षर

तिथि: ______________

सहमडत लेने वाले व्यक्ति के हस्ताक्षर

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

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Annexure II
Opportunities and Challenges in Digital Literacy: Assessing the impact of digital literacy training for empowering urban poor women

Zone: ____________
Name of slum/village: ____________

1) Personal Information:

Name:                                                                Occupation:
Age:                                                                Monthly Income:
Gender:  1) Male             2) Female
Education:  1) Nil             2) Up to Primary         3) 6\textsuperscript{th} - 10\textsuperscript{th}     4) 11\textsuperscript{th} - 12\textsuperscript{th}      5) Graduation and above
Marital Status: 1) Married             2) Unmarried          3) Others
House Address:                                                  Contact Number:

Type of family:  1) Nuclear
                  2) Joint
                  3) Extended

FAMILY OWNERSHIP AND USE OF DIGITAL TECHNOLOGY

2) Family Background:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Relation</th>
<th>Age</th>
<th>Education</th>
<th>Nature of Job</th>
<th>Part time/Full time</th>
<th>Approx Income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Job</td>
<td>Self Employed</td>
<td>Unemployed</td>
</tr>
</tbody>
</table>

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women
3) Availability of digital technology related equipment and facilities at home:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Equipment/Facility</th>
<th>Yes/No</th>
<th>Owned by</th>
<th>Operated by (relationship)</th>
<th>Purpose</th>
<th>Place of Use</th>
<th>Made life easy</th>
<th>Made life easy</th>
<th>Reasons for non-usage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>How many</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AM</td>
<td>AF</td>
<td>D</td>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Laptop</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>Desktop</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>Mobile Phone</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.4</td>
<td>Tablet</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>Type of Internet &amp; service provider:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>Wifi</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.6</td>
<td>Any other (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Multiple options can be ticked

**USE OF DIGITAL TECHNOLOGY BY ADULT MALE AND ADULT FEMALE**

4) Do you have following for your exclusive use:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Personal Use</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Mobile Phone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>Computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Tablet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5) Do you have internet connectivity in your phone?

1) Yes 2) No
6) Are you doing the following through your mobile phones/computer/tablets:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Services</th>
<th>Awareness</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>6.1</td>
<td>Making or receiving calls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2</td>
<td>SMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.3</td>
<td>WhatsApp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.4</td>
<td>Video Calling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.5</td>
<td>Photography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.6</td>
<td>Banking facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.7</td>
<td>Searching jobs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.8</td>
<td>Payment of bills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.9</td>
<td>Admission of children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.10</td>
<td>Availing Government Schemes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.11</td>
<td>Online Shopping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.12</td>
<td>Searching information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.13</td>
<td>Health related apps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.14</td>
<td>Social contacts via WhatsApp</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and Facebook</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.15</td>
<td>Any other, please specify</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Multiple options can be ticked

7) Status of awareness and usage about following:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Apps</th>
<th>Awareness</th>
<th>Downloaded</th>
<th>Frequency of usage</th>
<th>Requirement of Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>D</td>
<td>W</td>
<td>M</td>
</tr>
<tr>
<td>7.1</td>
<td>WhatsApp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>YouTube</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>Facebook</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.4</td>
<td>Truecaller</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5</td>
<td>Google Maps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.6</td>
<td>Google</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.7</td>
<td>Email</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.8</td>
<td>Pay TM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.9</td>
<td>Shopping Apps (Flipkart, Jabong, Myntra)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.10</td>
<td>Bhim App</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.11</td>
<td>Entertainment Apps (Hotstar, Voot)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.12</td>
<td>Any Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Multiple options can be ticked
8) What are the reasons for you not being able to realize full potential of mobile and computer related technologies:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Reasons</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1</td>
<td>Time Constraints</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.2</td>
<td>Too complicated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.3</td>
<td>Services are unaffordable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.4</td>
<td>Transportation problem to reach training centre</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.5</td>
<td>Cultural Taboos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.6</td>
<td>Electricity Problem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.7</td>
<td>Cost of equipment is very high</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.8</td>
<td>Lack Skill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.9</td>
<td>Burden Household Chores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.10</td>
<td>All of the above</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Multiple options can be ticked

9) Are you aware of the following in/around your area?

<table>
<thead>
<tr>
<th>S.No</th>
<th>Centres</th>
<th>Awareness</th>
<th>Used By</th>
<th>Level of Satisfaction</th>
<th>Purpose of use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes No</td>
<td>Women</td>
<td>Others Yes Partially</td>
<td></td>
</tr>
<tr>
<td>9.1</td>
<td>Cyber Cafe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.2</td>
<td>Communication Information Centres</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.3</td>
<td>Common Service Centres</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.4</td>
<td>Community Centre enabled with computers and internet facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.5</td>
<td>Computer training centre’s (Government, Private, NGO)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.6</td>
<td>Others (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9.7) Have you heard about the following?

1) Digital India Mission (DI Mission)
2) National Digital Literacy Mission (NDLM)

*Specify reason if not being used by women and girls
*Charges for the facilities used in the above table
**TRAINING IN DIGITAL SKILLS**

10) Has training of computer in schools/colleges imparted to children?

1) Yes  
2) No  
3) Don’t know

11) Has any computer related training/workshop/campaign been conducted in your community?

1) Yes  
2) No  
3) Don’t know

12) If yes, please answer the following:

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Organization Name (School/College)</th>
<th>Attended</th>
<th>No. of days</th>
<th>Benefitted</th>
<th>Reasons for not attending</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13) What steps can be taken to increase the use of technology?

1) Training of women  
2) Support by family  
3) Availability of facilities  
4) Increasing Literacy and Education  
5) All of the above  
6) Any other

14) If any of the above initiative is taken, would you like to be a part of the training?

1) Yes  
2) No  
3) Don’t know
15) How do you think such training can benefit you?

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Reasons</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1</td>
<td>Occupational growth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.2</td>
<td>Increase self confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.3</td>
<td>Increase income/ Reduction in poverty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.4</td>
<td>Better household management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.5</td>
<td>Better job opportunity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.6</td>
<td>Helps to bring about change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.7</td>
<td>To keep pace with present times</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.8</td>
<td>To search information easily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.9</td>
<td>For entertainment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Multiple options can be ticked*
अनुलग्नक II (a)

डिजिटल साक्षरता के अवसर और चुनौती: डिजिटल साक्षरता प्रशिक्षण का आकलन प्रभाव शहरी गरीब महिलाओं को सशक्त बनाने के लिए

क्षेत्र: _____________

बस्ती/ गाँव का नाम: _____________

1) अपने बारे में:

<table>
<thead>
<tr>
<th>नाम:</th>
<th>व्यवसाय:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>उम्र:</th>
<th>मासिक आय:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>लिंग:</th>
<th>पुरुष</th>
<th>महिला</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1)</td>
<td>2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>शिक्षा:</th>
<th>शून्य</th>
<th>मुख्य तक</th>
<th>6&lt;sup&gt;th&lt;/sup&gt;–10&lt;sup&gt;th&lt;/sup&gt;</th>
<th>11&lt;sup&gt;th&lt;/sup&gt;–12&lt;sup&gt;th&lt;/sup&gt;</th>
<th>5) स्नातकस्तर की पढाई और उपर</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1) शून्य</td>
<td>2) मुख्य तक</td>
<td>3) 6&lt;sup&gt;th&lt;/sup&gt;–10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>4) 11&lt;sup&gt;th&lt;/sup&gt;–12&lt;sup&gt;th&lt;/sup&gt;</td>
<td>5) स्नातकस्तर की पढाई और उपर</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>वैवाहिक दशा:</th>
<th>शादी शुदा</th>
<th>अविवाहित</th>
<th>अन्य</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) शादी शुदा</td>
<td>2) अविवाहित</td>
<td>3) अन्य</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>घर का पता: संपर्क संख्या:</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>परिवार के प्रकार:</th>
<th>एकल परिवार</th>
<th>संयुक्त परिवार</th>
<th>विस्तृत परिवार</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) एकल परिवार</td>
<td>2) संयुक्त परिवार</td>
<td>3) विस्तृत परिवार</td>
<td></td>
</tr>
</tbody>
</table>

परिवार का स्वामित्व और डिजिटल प्रौद्योगिकी की का इस्तेमाल

2) पारिवारिक पृष्ठ भूमि:

<table>
<thead>
<tr>
<th>क्र.सं.</th>
<th>रिश्ता</th>
<th>उम्र:</th>
<th>शिक्षा:</th>
<th>कार्य की प्रकृति</th>
<th>पार्ट समय/ पूरा समय</th>
<th>लग भग आय</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>काम वनियोजित रोजगार</td>
<td>प.टी कटी</td>
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</tbody>
</table>

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

170
3) डिजिटल प्रौद्योगिकी की संबंधित उपकरण और सुविधाएं की घर पर उपलब्धता:

<table>
<thead>
<tr>
<th>क्र.सं.</th>
<th>उपकरण और सुविधाएं</th>
<th>हाँ/ना और कितने</th>
<th>केस्वामित्व</th>
<th>द्वारा संचालित</th>
<th>उद्देश्य करने की जगह</th>
<th>जीवन को आसान बनाना</th>
<th>इस्तेमाल करने का कारण</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>लॅपटॉप</td>
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<td>ए . म . फ</td>
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<td>हाँ</td>
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<td>3.2</td>
<td>डेस्कटॉप</td>
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<td>3.3</td>
<td>मोबाइल फोन</td>
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<td>3.4</td>
<td>टॅबलेट</td>
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<td>3.5</td>
<td>इंटरनेट का प्रकार:</td>
<td>वाइफ़ई</td>
<td>बी</td>
<td>वाइफ़ई</td>
<td>दाता</td>
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<td>3.6</td>
<td>कोई दूसरा</td>
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</table>

*कई विकल्प चुने जा सकते हैं

**दिजिटल प्रौद्योगिकी का इस्तेमाल वयस्क पुरुष और महिला से**

4) क्या आपके पास ये सब है अपने विशेष उपयोग के लिए:

<table>
<thead>
<tr>
<th>क्र.सं.</th>
<th>विशेष उपयोग</th>
<th>हाँ</th>
<th>ना</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
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<td>4.3</td>
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</tbody>
</table>

5) क्या आपके फोन में इंटरनेट कनेक्टिविटी है?

1) हाँ 2) ना
6) क्या आप अपने मोबाइल फोन / कंप्यूटर / टॅबलेट से इनमें से कुछ करते हैं?

<table>
<thead>
<tr>
<th>क्र.सं.</th>
<th>सेवाएं</th>
<th>जानकारी</th>
<th>उपयोग</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>हाँ</td>
<td>ना</td>
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<tr>
<td>6.1</td>
<td>कॉल करना यात्रा ठाना</td>
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<td>6.2</td>
<td>स. म. स</td>
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<tr>
<td>6.3</td>
<td>वेट्सऍप</td>
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<tr>
<td>6.4</td>
<td>वीडियोकॉल करना</td>
<td></td>
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<tr>
<td>6.5</td>
<td>फोटोग्राफी</td>
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<tr>
<td>6.6</td>
<td>बैंकिंग सुविधा</td>
<td></td>
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<tr>
<td>6.7</td>
<td>काम दूंढना</td>
<td></td>
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</tr>
<tr>
<td>6.8</td>
<td>बिल के भुगतान</td>
<td></td>
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</tr>
<tr>
<td>6.9</td>
<td>बच्चों का स्कूल में प्रवेश</td>
<td></td>
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</tr>
<tr>
<td>6.10</td>
<td>सरकारी योजनाओं का लाभ उठाना</td>
<td></td>
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<tr>
<td>6.11</td>
<td>ऑनलाइन शॉपिंग</td>
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<tr>
<td>6.12</td>
<td>जानकारी खोजना</td>
<td></td>
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<tr>
<td>6.13</td>
<td>स्वास्थ्य संबंधित ऐप</td>
<td></td>
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</tr>
<tr>
<td>6.14</td>
<td>सामाजिक संपर्क वेट्सऍप और फेसबुक के जरिए</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.15</td>
<td>कोई दूसरा</td>
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</table>

7) जानकारी का स्टेटस और ऐप्स का इस्तेमाल:

<table>
<thead>
<tr>
<th>क्र.सं.</th>
<th>ऐप्स</th>
<th>जानकारी</th>
<th>डाउनलोड</th>
<th>इस्तेमाल करने का आवृति</th>
<th>सहायता की आवश्यकता</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>रोज साप्ताहिक महीने के कोई दूसरा</td>
<td>हाँ</td>
</tr>
<tr>
<td>7.1</td>
<td>वेट्सऍप</td>
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<tr>
<td>7.2</td>
<td>यूट्यूब</td>
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<tr>
<td>7.3</td>
<td>फेसबुक</td>
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<tr>
<td>7.4</td>
<td>ट्विटर</td>
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</tr>
<tr>
<td>7.5</td>
<td>गूगल नैग्यो</td>
<td></td>
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</tr>
</tbody>
</table>
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

8) आपके हिसाब से क्या कारण है मोबाइल और कंप्यूटर से संबंधित प्रौद्योगिकियों की पूरी क्षमता का अहसास ना होने का?

<table>
<thead>
<tr>
<th>क्र.सं.</th>
<th>कारण</th>
<th>है</th>
<th>ना</th>
<th>पता नहीं</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1</td>
<td>समय की पाबंदी</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
</tr>
<tr>
<td>8.2</td>
<td>बहुत जोशील</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
</tr>
<tr>
<td>8.3</td>
<td>सेवाएं पहुंच से बाहर हैं</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
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<tr>
<td>8.4</td>
<td>परिवहन की परेशानी</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
</tr>
<tr>
<td>8.5</td>
<td>सांस्कृतिक वर्जनाओं</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
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<tr>
<td>8.6</td>
<td>बिजली की परेशानी</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
</tr>
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<td>8.7</td>
<td>उपकरण की लागत बहुत ज्यादा है</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
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<tr>
<td>8.8</td>
<td>कोशल की कमी</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
</tr>
<tr>
<td>8.9</td>
<td>ऊपर के सभी</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
<td>स्थिरता</td>
</tr>
</tbody>
</table>

*कई विकल्प चुने जा सकते हैं*
9) क्या आप अपने क्षेत्र में इन सब से अवगत हैं?

<table>
<thead>
<tr>
<th>क्र.सं.</th>
<th>केन्द्र</th>
<th>जागरूकता</th>
<th>किसके द्वारा उपयोग हुआ</th>
<th>संतुष्टि के स्तर</th>
<th>इस्तेमाल करने का उद्देश्य</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>हैं/ना</td>
<td>महिला/अन्य</td>
<td>हैं/ना</td>
<td>अंशि करूप से</td>
</tr>
<tr>
<td>9.1</td>
<td>साइबर केफे</td>
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</tr>
<tr>
<td>9.2</td>
<td>संचार सूचना केन्द्र</td>
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</tr>
<tr>
<td>9.3</td>
<td>सामान्य सर्विस केन्द्र</td>
<td></td>
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</tr>
<tr>
<td>9.4</td>
<td>समुदाय केन्द्र जो कंप्यूटर और इंटरनेट से सक्षम हो</td>
<td></td>
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</tr>
<tr>
<td>9.5</td>
<td>कंप्यूटर प्रशिक्षण केन्द्र (सरकारी, निजी, एनजीओ)</td>
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<tr>
<td>9.6</td>
<td>कोई दूसरा</td>
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<td>9.7)</td>
<td>क्या आपने इन शब्दों के बारे में सुना है?</td>
<td>हैं/ना</td>
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<tr>
<td>1)</td>
<td>डिजिटल भारत मिशन</td>
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<td>2)</td>
<td>राष्ट्रीय डिजिटल साक्षरता मिशन</td>
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</tbody>
</table>
प्रशिक्षण डिजिटल कौशल का

10) क्या कंप्यूटर प्रशिक्षण आपके बच्चों के स्कूल या कॉलेज में दी जाती है?
   1) हाँ      2) ना    3) पता नहीं

11) क्या कोई कंप्यूटर से संबंधित प्रशिक्षण/ कार्यशाला/ अभियान आपके समुदाय में आचरण करा गया है?
   1) हाँ      2) ना    3) पता नहीं

12) अगर हाँ, कृपया नीचे दी गई जानकारी का उत्तर दे:

<table>
<thead>
<tr>
<th>पाठ क्रम</th>
<th>संस्था का नाम (स्कूल, कॉलेज)</th>
<th>भाग लिया हाँ</th>
<th>ना</th>
<th>कितने दिन</th>
<th>लाभ उठाया</th>
<th>भाग न लेने का कारण</th>
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</thead>
<tbody>
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</table>

13) आपके हिसाब से क्या किया जा सकता है प्रौद्योगिकी के उपयोग को बढाने के लिए?
   1) महिलाओं का प्रशिक्षण
   2) परिवार से समर्थन
   3) सुविधाओं की उपलब्धता
   4) साक्षरता भड़ाना और शिक्षा
   5) ऊपर के सभी
   6) कोई दूसरा

14) अगर कोई पहल की जाए तो क्या आप प्रशिक्षण के भागीदार बना पसंद करेंगे?
   1) हाँ      2) ना    3) पता नहीं
आपको क्या लगता है, प्रशिक्षण आपको कैसे लाभ दे सकता है?

<table>
<thead>
<tr>
<th>क्र.सं.</th>
<th>कारण</th>
<th>हाँ</th>
<th>ना</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1</td>
<td>व्यावसायिक विकास</td>
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</tr>
<tr>
<td>14.2</td>
<td>आत्मविश्वास बढ़ता है</td>
<td></td>
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<tr>
<td>14.3</td>
<td>आय में वृद्धि</td>
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<tr>
<td>14.4</td>
<td>बेहतर घर के प्रबंधन</td>
<td></td>
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</tr>
<tr>
<td>14.5</td>
<td>बेहतर नौकरी का अवसर</td>
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</tr>
<tr>
<td>14.6</td>
<td>बदलाव लाने में मदद करता है</td>
<td></td>
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</tr>
<tr>
<td>14.7</td>
<td>वर्तमान समय के हिसाब से</td>
<td></td>
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</tr>
<tr>
<td>14.8</td>
<td>आसानी से जानकारी खोजना</td>
<td></td>
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</tr>
<tr>
<td>14.9</td>
<td>मनोरंजन के लिए</td>
<td></td>
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</tbody>
</table>

*कई विकल्प चुने जा सकते हैं*
Annexure III

Guidelines for focus group discussion:

While conducting focus group discussion the moderator must create a thoughtful, permissive atmosphere, provide ground rules in brief. The pattern for introducing group discussion includes:

➢ Welcome
➢ Overview of the topic
➢ Ground rules.
➢ Questions (general to specific)
   • Use open-ended questions.
   • Avoid questions that can be answered with a "yes" or "no".
   • Use "think back" questions. Take people back to an experience and not forward to the future.
   • Use questions that get participants involved Use reflection, examples, choices, etc.
   • Focus the questions Sequence that goes from general to specific.

Question to be asked in focus group discussion

• Hello how is everyone? Today we are going to talk to each other and discuss about how we use our mobile phones and what are the problems faced by us in the use of related technologies.
• How do you all use the mobile phone, for what all purposes?
• Other than making and receiving calls, let us discuss other purposes for which we all may have used our mobiles in the last six months.
• Is your mobile phone for your personal use or it is shared with other family members?
• Does your family have a computer or a tablet?
• Who uses the same and for what all purposes?
• Is there internet connection of some form- wi-fi or on the mobile and who uses it?
• How has the use of mobiles changed our lives? Let us share our experiences!
• Have any of your family members received training in use of computers or mobiles?
• Who looks after tasks, which are to be done online such as admission of children to school, college, availing of some govt. schemes etc.
• Are there cyber hubs or government facilities, which you are aware of and which you family uses? Are girls allowed to go to these hubs?
• Are there women in your locality who have more knowledge and digital skills?
• Are they looked up to in the society and have you approached them ever for help?
• Have any training programs been organized for women in your area in the use of mobiles or computer?
• Do you think women should receive any such training? What all should they be trained in?
Annexure IV
Training Module for Digital Literacy
Each One Teach One Program

Target audience: Semi-literate rural/urban women
Total time: 30 hrs
Guidelines:
- This is a 10 days module. It might take less/ more time depending upon the learner’s adaptability.
- Each smart phone is different; therefore, the trainer has to make prerequisite arrangements (if/ when required) within the module.
- An exercise at the end of each activity is a mandatory part of module.
- Ensure that the expected outcomes are met at the end of each day.
- A 2-day module has been placed separately at the end of the following module which is optional in nature.

Day 1
Objective:- To Introduce the learners to smart phone/ ordinary phone buttons
To learn making and receiving phone calls

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
<th>Communication aid</th>
</tr>
</thead>
</table>
| 1.    | 30 min   | Functions of Smartphone | Introduction to smart phone

A Smartphone is a cell phone that allows you to do more than just make phone calls and send text messages. It can browse the Internet and run basic software programs like a computer and uses a touch screen to allow users to interact with them. There are thousands of smart phone apps (software programs), including personal-use and business-use programs that can all run on the phone.

- Introduce the parts of a smart phone through a demonstration model

Demonstration using smart phone
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Task</th>
<th>Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 min</td>
<td>Test your skills</td>
<td>Identify different parts of your smart phone and explain their functions</td>
<td></td>
</tr>
<tr>
<td>2. 15 min</td>
<td>Making and receiving calls</td>
<td>Making a phone call on new number&lt;br&gt;- Tap on the Phone button by clicking the call icon. Now touch the Keypad button. A number set from 0 to 9 will appear onscreen. &lt;br&gt;- Dial the number by just touching them. Tap in the number you want to call. &lt;br&gt;- Once you have entered the number, tap the green call button. &lt;br&gt;- The keypad will disappear and the call will start. &lt;br&gt;- When you want to end the call, just tap on red button. The call will be over</td>
<td>Demonstration</td>
</tr>
<tr>
<td>3. 15 min</td>
<td>Calling a saved contact&lt;br&gt;- Tap on the Phone button by clicking the call icon. Now touch the Keypad button. A number set from 0 to 9 will appear onscreen &lt;br&gt;- Instead of touching the keypad numbers, click on the contacts option present on the top right hand corner of the screen &lt;br&gt;- List of contacts appears on the screen. Now search for the contact you want to make the call to from the search icon situated above the contacts option &lt;br&gt;- Select the contact, and click on call option to make a phone call</td>
<td>Demonstration</td>
<td></td>
</tr>
</tbody>
</table>

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4. 15 min

Receiving a phone call
-When a phone call comes in, your phone will ring
-If the caller is in your contact list, their name will appear on the screen. If not then you will see the phone number only
-Tap/swipe on the green answer button
-you can also reject a call by pressing/swiping the red button

Adding a contact
- On your phone’s Home or application screen, tap on the Contacts button
- The Contacts list will appear
- To add a new contact, tap on the Add Contact button or + button
- The Add Contact page will appear. There will be fields that you can fill in. To fill out a field, tap on the field box.
- The onscreen keyboard will popup, allowing you to tap in appropriate details.
- Type the name and number in the given field.
- When you’re done, tap on the Save button.
- The person will now be in the Contacts list

Deleting a contact
- On your phone’s Home or application screen, tap on the Contacts button
- The contact list will appear
- Select the contact you want to delete/remove
- Click on the 3 dotted icon. A new menu bar appears
- Click on delete
- A new pop up appears. Click on Ok

5. 20 min

Demonstration

6. 15 min

Demonstration

Important list of helpline numbers

<table>
<thead>
<tr>
<th>Service</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>All India Women’s Helpline (All India)</td>
<td>1091 / 1090</td>
</tr>
<tr>
<td>National Commission for Women (NCW)</td>
<td>0111-23219750</td>
</tr>
<tr>
<td>Delhi Commission for Women (DCW)</td>
<td>011 23378044/ 23378317/ 23370597</td>
</tr>
<tr>
<td>Women in Distress</td>
<td>1091</td>
</tr>
<tr>
<td>Police Control Room</td>
<td>100</td>
</tr>
</tbody>
</table>
### Day 2

**Objective**: To enable the learners to read, send and reply to messages using SMS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
<th>Communication aid</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>30 min - 1 hour</td>
<td>Reading of text messages</td>
<td><strong>How to read text messages</strong>&lt;br&gt;- Tap on the message button&lt;br&gt;- An entire list of messages will appear&lt;br&gt;- Tap the particular message and it will open up&lt;br&gt;- Read the message and understand it</td>
<td>Demonstration</td>
</tr>
<tr>
<td>2.</td>
<td>30 min - 1 hour</td>
<td>Receiving and replying to text messages</td>
<td><strong>How to reply to a text message</strong>&lt;br&gt;- On your phone’s Home or application screen, tap on the Message button&lt;br&gt;- Open the conversation you want to reply to&lt;br&gt;- The conversation screen appears with all the conversation that has happened&lt;br&gt;- You write the message in the text box provided and click on send</td>
<td>Demonstration</td>
</tr>
<tr>
<td>3.</td>
<td>30 min - 1 hour</td>
<td>Sending and receiving text messages</td>
<td><strong>How to send a fresh message</strong>&lt;br&gt;- Tap on the message button present on your phone’s home screen. A screen with all the conversation will appear&lt;br&gt;- Click on the pencil icon to send a new message. A new screen will appear with keypad&lt;br&gt;- Enter the contact of the person you want to send the message to&lt;br&gt;- Type the message in the message box given and click on send</td>
<td>Demonstration</td>
</tr>
<tr>
<td></td>
<td>15 min</td>
<td>Test your skills</td>
<td>Send a new message to your trainer saying ‘Hi’&lt;br&gt;Reply to the message sent to you by the trainer</td>
<td>Exercise</td>
</tr>
</tbody>
</table>

**Expected Outcomes**: The learner will
- Be aware of all the buttons of a Smartphone
- Make and receive calls on saved and new number
- Be able to add and delete contacts
- Be able to read, reply and send a fresh message through SMS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>30 min</td>
<td>Recognize different parts of smart phone</td>
<td>- Show the smart phone and ask learner to identify various buttons</td>
</tr>
</tbody>
</table>
| 2.    | 30 min   | How to add a number in contact list | - Save trainer’s number  
                              How to make and receive calls | - Make a call  
                              - Receive the call made |
| 3.    | 30 min   | How to read, send and reply messages through SMS | - Read the message sent by the trainer  
                              - Reply ‘hello’ to the trainer  
                              - Write afresh message saying ‘how are you?’ to the trainer and send |
## Day 3

**Objective:** To enable the learner to set an alarm
- How to see a calendar
- How to set a reminder

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
<th>Communication aid</th>
</tr>
</thead>
</table>
| 1     | 20 min   | How to set an alarm | - Open clock app by tapping on the clock icon  
- A new screen appears. Click on the clock icon present on the top left hand corner of the screen  
- Suppose you want to set an alarm for 5:30 PM and the time shown on the phone screen is 3:30 PM, then tap on + icon, present at the bottom of the screen  
- Doing so will open a new alarm page  
- Set an alarm by hours: minutes. Then for morning tap AM, for evening tap PM  
- Note: You can set your alarm for the whole week also by tapping on the **Repeat** option  
- Then tap the **Bell** icon to set the alarm sound  
- Tap the **Vibrate** option if you want the alarm to vibrate.  
- Tap the **Label** icon to add a label or title to your alarm (Example, "Workdays") | Demonstration     |
| 2     | 15min-30 min | Usage of calendar | - Click on ‘Calendar’ icon and Calendar will open  
- Click on right/ left arrow to change the month  
- To see the particular occasion/holiday click on the marked dates  
- To set a reminder click on specific date and then click the + icon | Demonstration     |
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15 min Test your skill
Mark a reminder for any date in September naming it “Homework submission” Exercise

Expected Outcomes: The learner will
-Be able to set alarm in their phone
-Be able to site calendar on Smartphone’s screen
-Be able to set remainder of important events

Day 4
Objective:-To enable the learner to use WhatsApp application

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1.    | 20 min   | Functions of WhatsApp application | **Introduction**
WhatsApp is a free to download messenger app for smartphone. It uses the internet to send messages, images, audio or video. The service is very similar to text messaging services; however, because WhatsApp uses the internet to send messages, the cost of using WhatsApp is significantly less than texting.

**Downloading WhatsApp**
-Go to play store/Google already installed in

Communication aid
Demonstration

The image will appear like this. Add title, change time and save it.
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>30 min - 60 min</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>your phone and click on it - A screen appears in which you will have to type WhatsApp in the space provided - Click on WhatsApp Messenger on the menu shown and then click on Install. The installing screen will appear showing the percentage of the app downloaded</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> Once the application is downloaded, its icon automatically appears on the home screen. - Click on the WhatsApp icon present on your phone’s home screen - A new screen appears. Click on Agree and Continue - A new screen appears where you are asked to enter your mobile number - Once you enter your phone number, a verification screen appears in which you have to write the OTP (One Time Password) you have received on the number entered. - After the verification, now you have to type the name you want on your profile and a display picture. Then click on Next - Since you are new on WhatsApp, therefore, there will be no chats and a blank screen of chats will appear - Click on the contact list to start a new chat - Select the contact you want to text to and click on it.</td>
</tr>
<tr>
<td>3.</td>
<td>30 min - 60 min</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Reading message on WhatsApp</strong> - Tap on the WhatsApp icon - New screen with the list of contacts saved will appear - Tap on any contact whose message you want to read - The new screen opens up the message</td>
</tr>
<tr>
<td>4.</td>
<td>30 min - 60 min</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Replying to a WhatsApp message</strong> - On opening the message of a person, tap on the box where “Type a message” is written - The keypad appears and you can type your message you want to convey - Click on the green arrow to send your message</td>
</tr>
</tbody>
</table>
|   |   | **Sending a fresh message through WhatsApp** - Tap on the WhatsApp icon - New screen with the list of contacts saved will appear - Select the contact you want to send a message - A new screen appears with the person’s name on
|   | 30 min-60 min | top and you can type the message in the box by clicking on it
- And then click on send arrow, and the message will be sent to the person
- Once the message is sent and you see a double tick, it means that the person has received the message but has not seen it
- Once the tick is turned to blue color, it means that the person has seen the message you have sent to him/her

**How to form a group on WhatsApp**
- Click on the WhatsApp icon present on your phone’s home screen
- Your chat page will appear
- Click on the top right icon
- A new menu appears showing different options
- Click on the New Group option
- Select the contacts from your list you want to make group with
- Once you have selected the contacts, press the green arrow on bottom right corner of your screen and then give a name to your group
- After naming the group, click on next e.g., Friends group, family group
- The group has been formed and will be visible to you on your chat screen

|   | 15 min | **Video calling using WhatsApp**
- Click on the WhatsApp icon present on your phone’s home screen
- Your chat page will appear
- Open the chat of the person you want to video call
- Click on the video button present on the right hand side of the name of the contact person
- Your video call will start

| 60 min | Test your skill | - Form a group of 4 friends and name the group as ‘Friends’ or any other.
- Type a message in the new group formed by you and send a message.

**Benefits**: The WhatsApp imports all the contacts of the phone automatically and provide information about who all in your contacts are using WhatsApp application
- All the tools are very easy to use.
- Location, images, status can be shared with friends. Friends can chat with friends without spending any money using WhatsApp on internet enabled devices.
- Messages are sent without any charges to any part of the world provided internet is available on mobile devices.

**Expected Outcomes**: The learner will
- Understand various functions of WhatsApp
- Be able to read, reply and send a fresh message

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### Day 5

**Objective:** How to click and send photographs

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
<th>Communication aid</th>
</tr>
</thead>
</table>
| 1.    | 30 min - 60 min | Photography | **How to click photographs**  
- Click the Camera app  
- Ensure that the camera mode is on picture mode (and not the video mode). Tap on the subject you would like to capture to focus the camera on it  
- Click the camera button  
- Ensure that the camera mode is on picture mode (and not the video mode). Tap on the subject you would like to capture to focus the camera on it. By clicking on red circular button present on the bottom left hand corner will help you in recording a video and by clicking on center white circular button, your picture will be clicked. | Demonstration |
| 2.    | 30 min – 60 min | Video recording | **How to send photos from the picture gallery using WhatsApp**  
- Click on the Gallery icon present on your home screen  
- Select a picture from your gallery by clicking on it for a few seconds  
- Few option on the top of the screen appears. Click on the share option  
- A new pop up appears showing you the options to send the picture to  
- Select the WhatsApp icon and then select the contact you want to share the picture with  
- Click on the send option to send the picture to your contact | Demonstration |
| 3.    | 30 min – 60 min | Camera | **How to send a photo with WhatsApp**  
- Click on the WhatsApp icon on your home screen  
- Select the contact you want to share the picture with  
- Click on the pin icon (known as attachment icon)  
- Tap on the Gallery Button shown in the menu appeared  
- Your gallery will open  
- Select the image you want to send  
- Add a caption if you want and click on send | Demonstration |
|       | 30 min    | Test your        | Click a photograph from your phone and send it | Exercise |

- Independently form a group on WhatsApp

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Attaching a photograph present in gallery and sending it to the trainer on WhatsApp.

**Expected outcomes:** The learner will be able to:
- Click photographs through mobile phone
- Download WhatsApp
- Send messages through WhatsApp
- Form a group on WhatsApp
- Send a photo with WhatsApp
- Take photo on WhatsApp and send

**Day 6**

**Objective:** Usage of Google application

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
<th>Communication aid</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>30 min</td>
<td>Using Google</td>
<td><strong>Introduction</strong>&lt;br&gt;It searches for information about (someone or something) on the Internet using the search engine Google.</td>
<td>Demonstration</td>
</tr>
<tr>
<td>2.</td>
<td>30 min</td>
<td></td>
<td><strong>Information search on Google</strong>&lt;br&gt;-Click on the Google icon&lt;br&gt;-Tap on the box provided, keyboard will appear – Type the information you need to search. For e.g., what to do in heavy menstruation periods, remedies for headache, video on home remedies for good hair, stitching and nutritious recipes the screen will appear.</td>
<td>Demonstration</td>
</tr>
<tr>
<td>3.</td>
<td>30 min</td>
<td></td>
<td><strong>Search for employment</strong>&lt;br&gt;-Click on the Google icon&lt;br&gt;-Tap on the box provided, keyboard will appear – Type the information you need to search. For e.g., Domestic Helper agencies, Job vacancies, etc.,&lt;br&gt;Note: Some online sites for job searching are; Naukri.com, Shine.com, TimesJob.com, Indeed.com, etc.</td>
<td>Demonstration</td>
</tr>
<tr>
<td>4.</td>
<td>30 min</td>
<td></td>
<td><strong>School admission for EWS Category</strong>&lt;br&gt;-Click on the Google icon&lt;br&gt;-Tap on the box provided, keyboard will appear – Type ‘EWS Admission Online’</td>
<td>Demonstration</td>
</tr>
<tr>
<td>5.</td>
<td>30 min</td>
<td></td>
<td><strong>Image search on Google</strong>&lt;br&gt;- Type what you want to search. For e.g. ‘blouse’</td>
<td>Demonstration</td>
</tr>
</tbody>
</table>
6. 30 min | Function of YouTube application
| Designs, mehendi design and rangoli and click on images
| - The blouse designs will appear as shown in figure. Click on the image want to open for the design
| Video search on Google
| - Click on the YouTube link you want to open and your video will start
| Benefits: - Helps to navigate information, images, videos and maps all under one platform

7. 45 min | Introduce
| Video search through YouTube
| - Tap YouTube icon from homescreen
| - Tap the search button in the upper right corner of your screen. It looks like a magnifying glass
| - Type in your search. For e.g., Nursery Rhyme like “Johnny Johnny Yes Papa”
| - Tap on a video to view it
| - Double-tap the left or right sides of the video area to rewind or fast forward 10 seconds.
| - Tap the center of the video to play or pause.
| - Tap the next button or previous button to skip to the next video in the list or go back to the video you were watching before.

30 min-1 hour | Test your skill
| - Search the list of schools near your area from Google
| - Look for images of your interest
| - Look for healthy recipes via YouTube

Expected outcome: The learner will be able to learn:
- How to navigate Google
- How to search information and see videos on YouTube
- How to look for different portals using Google

<table>
<thead>
<tr>
<th>Recapitulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.No.</td>
</tr>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
</tbody>
</table>

Details:
- Set an alarm 5 min ahead the present time in the smart phone clock. Eg: if it is 11 am in the clock, set the alarm at 11.05 am.
- Change it to bell and vibration mode
- Read the message sent by the trainer I WhatsApp
- Reply ‘hey’
- Open up a fresh contact on WhatsApp and read
### Day 7

**Objective:** Usage of Online Registration System application

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1.    | 45 min-1 h| Using Online Registration System | Introduction  
It is a centralized data management system used for booking appointments in hospitals and tracking the medical report  

**How to take appointment through Online Registration System (ORS)**  
- To install the application, click on Play Store icon  
- A screen appears in which you will have to type e-Hospital Online registration in the space provided  
- Click on e-hospital online registration and then click on Install  
- Accept the settings by clicking accept button  
- The application starts getting installed and once its installed click on the open option  
- Once the application is installed, its icon appears on the home screen. Click on the icon  
- A new screen appears in which you can book appointment with or without Aadhaar  
- To book appointment with Aadhaar option, you need to click on With Aadhaar and a new screen will appear in which you will have to fill in the details required and click on proceed |

| Communication aid | Demonstration |
- A new screen appears in which you will have to fill your Aadhaar number and tick the no objection box.

- After filling the Aadhaar details, an OTP (One Time Password) will be sent to the registered mobile number which needs to be entered. Then click on Submit.

- Once you click on submit, a screen appears in which all the details are shown that are connected with your Aadhaar. After checking the details, if everything is correct, then click on Book Appointment.

- Once you click on Book appointment, a message box appears saying ‘SMS will be shortly sent to you giving details of your appointment’. Click on OK.

- By clicking on Ok, you see your details on the screen. Verify it and click on Done.

- Once you click on Done, you will receive a text message showing all your details of appointment.

Note: All the information can be entered and seen in Hindi by clicking on Hindi option located.
Expected outcome: The learner will learn:
- How to register themselves through ORS
- How to look for different hospitals and select the nearest one
- How to book an appointment through ORS

Benefits:
- Centralized data management
- Saves time—there is no need to be physically present for booking appointments
- Secure online payment processing 24/7
- Improved work efficiency
- Customized online registration

<table>
<thead>
<tr>
<th>S.No</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1.   | 45 min-1 hour | Using Bhim application | **Introduction**  
It is a government application to transfer money from one bank to another securely  
**How to use Bhim Application**  
- Go to play store  
- A screen appears in which you will have to type Bhim App in the space provided  
- Click on the Bhim App  
- Click on install  
- A new screen appears. Click on accept option  
- Once the application is installed then click on open  
- After the application is installed, its icon will appear on the home screen  
- On clicking on the icon a new screen will appear which asks you to verify your mobile number.  
- You enter OTP (One Time Password) and then click on next  
- After the verification of mobile number, a new screen appears which tells about the applications function. Read them and click on next  
- Now you will have to set a pin/password and confirm it. After confirming click on the tick mark present on the lower right hand side of the screen  
- Once you have confirmed the pin/password choose the language you are comfortable with and click on next  
- Once the above steps are done you are ready to use the application and make transactions, by selecting the bank, the account, and by choosing |

Day 8

Objective: Usage of Bhim application

Communication aid: Demonstration
### Expected outcome:
The learner will learn:
- How to use BHIM app for various purposes.

### Benefits:
- All in one for all bank accounts

**No Internet Connectivity Required:**
The BHIM App can transfer funds from one bank account to another without an internet connection. For that, you need to dial *99# from a mobile phone, and this will show a welcome screen with seven options: - to send money, check your balance, or see transaction history. So, with BHIM app, a non-smart phone user can also do any transaction from anywhere.

### Authentication & Security

### Day 9

**Objective:**
- Usage of Himmat application

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
<th>Communication aid</th>
</tr>
</thead>
</table>
| 1.    | 30 min - 1 hour | Function of Himmat application | **Introduction**

Himmat plus application is women safety mobile application of Delhi Police.

**Himmat plus Application**
- To install the application, click on Play Store icon
- A screen appears in which you will have to type Himmat Plus App in the space provided
- Click on the Himmat Plus App and then click on Install
- Accept the settings by clicking accepting button
- The application starts getting installed and once its installed click on the open option
- On opening the application, you have to register yourself and fill in the details asked: name, mobile number, emergency number and gender
- After filling in all the details, click on log in button
- A new screen will appear in which you will have to write the number sent on your registered mobile number for verification
- Once the verification is done, your application is ready to use

**Note:**
In case of emergency at any point of time, click on SOS button situated on the lower right hand side of the screen.
Some other safety applications are: Nirbhaya SOS App

<table>
<thead>
<tr>
<th>15 min-30 min</th>
<th>Test your skill</th>
<th>How can you use Himmat application in your life</th>
<th>Exercise</th>
</tr>
</thead>
</table>

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**Expected outcome:** The learner will learn:
- How to register yourself on Himmat application
- How to use Himmat application

**Objective:** How to lodge an FIR online

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
<th>Communication aid</th>
</tr>
</thead>
</table>
| 1.   | 30 min - 1 hour | How to lodge an FIR | **Introduction**
|      |           |                   | A website named Delhi Police is a website to lodge an FIR online without going to the police station |
|      |           |                   | **How to lodge an FIR**
|      |           |                   | - Click on the Google icon |
|      |           |                   | - Type ‘online FIR in Delhi’ |
|      |           |                   | - Click on the first link provided. A site appears saying Delhi Police Shanti Sewa Nyaya |
|      |           |                   | - Click on the services option present just below the name of the site. A dropdown menu appears |
|      |           |                   | - Select the complaint options given in the dropdown menu you want to complaint about |
|      |           |                   | - Fill in the details asked from you |
|      |           |                   | Note: You can check your complaint status on the website. |
|      |           |                   | Some other applications for specific complaints are: Lost report, Theft FIR, etc. |
|      | 15 min   | Test your skills  | File an FIR through Delhi Police application |

**Expected outcome:** The learner will learn how to file an online FIR

**Recapitulation**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>30 min</td>
<td>Function of ORS application</td>
<td>- Steps to books an appointment in hospital</td>
</tr>
<tr>
<td>2.</td>
<td>30 min</td>
<td>Function of BHIM application</td>
<td>- How is BHIM application helpful</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Steps to register to BHIM app</td>
</tr>
<tr>
<td>3.</td>
<td>30 min</td>
<td>Function of Himmat plus application</td>
<td>- What is the purpose of Himmat plus app</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- How will you use it</td>
</tr>
</tbody>
</table>
Optional Module

The following module includes two elements

- 1 inbuilt mobile services: record voice on phone
- 1 application based service: There are many online shopping applications like Myntra, Jabong, Amazon, Flipkart, Grofers, etc.

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Objective: Use of Amazon Online Shopping Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.No.</td>
<td>Duration</td>
</tr>
</tbody>
</table>
| 1.    | 45 min – 1 hour | Functions of Amazon Application | Introduction
Amazon is an online shopping application where any person can buy different items like clothes, cosmetics, electronics, footwear, furniture, accessories, and toys for kids, etc.

**How to shop from Amazon Application**
--To install the application, click on Play Store icon
- A screen appears in which you will have to type Amazon in the space provided
- Click on install. Once the application is installed, its icon appears on the home screen of your phone
- Click on the Amazon icon. A new screen appears showing different items you can buy
- You can also search for your respective item in the search option
- Once you select you item option, the list of products under your particular item shows up with the price
- Select the product you want to buy. A new screen appears showing you the price, the enlarged picture of your product and the details of the product
- If you want to buy the product, scroll down and click on buy now
- Enter the email address and click on login
- A new screen appears asking you the address on which the product has to be delivered and shows you the final cost of the product
- It also asks you to select the mode of payment in which you can select “Cash On Delivery” option and click on place your order
- Once the order is placed, you receive an email of your placed order along with a text message on your mobile phone | Communication aid | Demonstration |
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Duration</th>
<th>Activity</th>
<th>Details</th>
<th>Communication aid</th>
</tr>
</thead>
</table>
| 1.    | 15-30 min | Voice record on phone   | **How to voice record in phone**  
- Click on the voice recorder button already present in your phone  
- A screen appears showing a red circular button in the lower middle part of the screen. Click on the red button to start your recording  
- Once your recording starts, the time starts getting recorded along with your voice  
Note: the time is in Hour: Minutes: Seconds format  
- Click on the pause icon to pause the recording and square icon to stop the recording  
- After clicking on the square icon, a pop up appears asking you to name the recording you have done. After naming the recording, click on save  
- Once the recording is saved, the list of recordings appear on the window | Demonstration     |
|       | 15 min    | Test your skill         | Record you voice and save it by the name ‘My Voice’                                                                                                                                                |                   |

**Expected Outcomes:** The learner will be able to record own or family member’s voices and save it.

Day 2

**Objective:** - How to use a Voice recorder

**Expected outcome:** The learner will learn online shopping for different products.
Annexure V

Letters to Gender Resource Centre

Dr. Savita Aggarwal
Associate Professor
Department of Development Communication and Extension
Institute of Home Economics
University of Delhi

To
GRC Coordinator
XXX,
New Delhi

Subject: Request for Conduct of training of women on Digital literacy

Dear Madam,

We are working on a research project funded by the Ministry of Women and Child Development on assessing the impact of digital literacy training for empowering urban poor women. In this regard, we have designed a need based two days training module on digital literacy suited to the requirements of urban poor women. The module comprises of training in use of mobile phones for household management, for seeking employment, searching information on education and health related aspects, online payments and shopping as well as use of helpline numbers.

We would like to conduct this training for women in batches of 20-25 women. We would require a room where women can be seated and need to select women trainees who are willing to undergo such training by our female research staff. If internet connectivity is available, it would be very useful; otherwise we would make some arrangement for the same. Kindly let us know if this will be possible in your centers. If there are any further questions, please let me know.

Thanking you
Yours sincerely

Dr. Savita Aggarwal
### Annexure VI

**Pre test form**

Name of the learner: ____________________________
Age: ____________________________
Education: ____________________________
Occupation: ____________________________
Date: ____________________________
Address: ____________________________
Name of the trainer: ____________________________
Monthly Income of learner: ____________________________
Section of the trainer: ____________________________
Family Income: ____________________________

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Skills</th>
<th>Independently</th>
<th>With help</th>
<th>Not able to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How do you use your phone?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Can you use internet on your phone?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Which of the following services can you use?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Making or receiving calls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sending and receiving messages through SMS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Using the Calendar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setting Alarm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Can you use the following apps on your phone:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WhatsApp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Video calling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clicking pictures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sending pictures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Searching information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>YouTube</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Google</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Payment of bills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BHIM/money related app</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Online shopping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fixing appointment with doctor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Himatt Plus/Safety App</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

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### Post test form

<table>
<thead>
<tr>
<th>Name of the learner:</th>
<th>Age:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education:</th>
<th>Occupation:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Date:</th>
<th>Address:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of the trainer:</th>
<th>Monthly Income of learner:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section of the trainer:</th>
<th>Family Income:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
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<th>Not able to use</th>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>S. No.</th>
<th>How do you use your phone?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
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<table>
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<td></td>
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</tr>
</tbody>
</table>

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

199
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Benefits of training</th>
<th>Yes</th>
<th>No</th>
<th>Partially</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Has the training increased your confidence level?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Has it changed the perception of your family members towards you?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do you think this training has/will benefit you?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Did you face any resistance from family members towards you before/during the training?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are you willing to continue learning from other family members?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are you willing to train others (family/friends) in digital literacy?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- How do you think you will use your phone in addition to calling?

________________________________________________________________________

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

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Annexure VII

Communication Aids developed for the training module

Posters

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

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202
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

204
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

Flash Cards
सीखो डिडिटल ज्ञान, बनो सशक्त और पाओ मान (Flash Cards Set I- 1 to 3)

1.

2.

3.

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

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Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

Flash Cards Set 1-4 to 6

4. **Aao Siper - Kool Karona**

   - Number pdr teyp karne
   - Number dast pdr teyp karke bhaska bhama karne
   - Hre raon ke bhool batan karo teyp karne
   - Aat karne

5. **Fon me Sankh Joidna**

    - Sankh Aaskal pdr teyp karne
    - + (plusa) batan pdr teyp karne
    - Name aur sankh tap karne
    - Serek (save) batan pdr teyp karne

6. **Fon se Sankh Hatan**

    - Sankh Aaskal pdr teyp karne
    - Sankh ka chach karne kisae aap Hatan chata hain
    - Hrate (delete) pdr dewaya bhask karne

*Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women*

Funded by: Ministry of Women and Child Development

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November, 2017 - January, 2019

4.5.6.
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

7. **संदेश (SMS)**
   - ब्लॉक ऐस अपने नंबर पर टेप करें
   - संदेश नंबर टेप करें
   - संदेश का संदेश सेंटर टेप करें

8. **अलाम लेट करना**
   - ऐसा अलाम नंबर पर टेप करें
   - अलाम नंबर टेप करें
   - अलाम की वजह से आप सुबह समय से उठ सकते हैं
   - अलाम की वजह से आप सुबह समय से उठ सकते हैं

9. **कैलेंडर**
   - कैलेंडर पर दिन करें
   - अनुस्मारक के लिए दिन करें
   - अनुस्मारक के लिए दिन करें

(Flash Cards Set 1- 7 to 9)
10. एप्लीकेशन डाउनलोड कैसे करे?

1. कोई भी एप्लीकेशन डाउनलोड करना विकल्प फ्री है पर इंटरनेट का चार्ज लगेगा।
2. हर एप्लीकेशन डाउनलोड करने का एक ही तरीका है जो हम आज आपको बताते जा रहे हैं।

11. व्हाट्सएप एप्लीकेशन

1. व्हाट्सएप, स्मार्टफोन में मैसेज एंप की तरह काम करता है।
2. यह संदेश, छवियों, ऑडिओ कार्डो या वीडियो मेज़बन के लिए इंटरनेट का उपयोग करता है।
3. व्हाट्सएप संदेश मेज़बन के लिए इंटरनेट का उपयोग करता है, और इससे वस्त्र इंटरनेट शिवाय के पैसे लगते हैं।

12. व्हाट्सएप पर समूह कैसे बनाएं?

व्हाट्सएप में समूह बनाने के फायदे:
1. समूह के जरिए आप अनेक लोगों को एक साथ अपना संदेश भेज सकते हैं।
2. समूह की बयान होती है।
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

13. **Flash Cards Set I** (13 to 15)

14. **Photo Taking and Sending**

15. **Protection Application**
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

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19. सीखो डिडिटल ज्ञान, बनो सशक्त और पाओ मान (Flash Cards Set I- 19 to 21)

20.

21. एफ आई आर (FIR)

Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women
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Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

1. [Image of Digital Literacy Kit I - Cards]

2. [Image of Digital Literacy Kit Folder Cover]

Folder Cover
Opportunities and Challenges in Digital Literacy: Assessing the impact of Digital Literacy Training for Empowering Urban Poor Women

Fundied by: Ministry of Women and Child Development
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November, 2017- January, 2019

3a.

3b.

Booklet
विकास संचार और विस्तार विभाग
gृह अर्थशास्त्र संस्थान
dिल्ली विश्वविद्यालय

सह-भागिता का प्रमाणपत्र

यह प्रमाणित किया जाता है कि _____________ ने लिंग संसाधन केंद्र ______________ के क्षेत्र __________ दिन कि डिजिटल साक्षरता प्रशिक्षण कार्यक्रम में भाग लिया। यह कार्यक्रम गृह अर्थशास्त्र संस्थान द्वारा आयोजित व महिला एवं वाल विकास मंत्रालय द्वारा पिच पोषित है।

मूल्य अंतिम विकास संचार और विस्तार विभाग

Certificate
Other training materials

Icons
Danglers