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Women's mobile phone access and use: A snapshot of six states in India

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**Women's mobile phone access and use:
A snapshot of six states in India**

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Women's Mobile Phone Access and Use: A Snapshot of Six States in India

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Abstract

This paper provides a snapshot of the way digitisation through mobile phones plays out among women in India. It is based on a review of literature, semi-structured interviews with 15 key stakeholders and 60 interviews with low-income women end-users across urban and rural locations in six states. The paper offers a snapshot of what women's access to, and use of phones looks like today in India. The interviews point to increased access to mobile phones with advanced features, with even women reporting to use basic phones being able to use applications such as WhatsApp. Our findings suggest that nearly all women have smartphones, have their own phone (rather than shared) and have a new phone (as opposed to a hand-me-down). Nevertheless, women remain constrained in the location and the type of use. Women primarily use the phone at home to avoid raising suspicion or gossip. A majority of respondents reported calling and receiving calls on a daily or weekly basis. When it came to messaging services, WhatsApp had overtaken conventional SMS. Women additionally use the phone for entertainment, for seeking out information, and for mobile payments. Very few women said their phones were monitored. Some respondents noted that they have serious concerns about the risk of harassment online, primarily through random calls. While women are able to operate their phones for every-day purposes, they struggle with adequate digital literacy when it comes to advanced features. There was little difference in the way women use their phones across rural-urban locations and across the six states.

Keywords: Gender and technology, Inclusive digitisation, Mobile phone access, Digital economy, Digital society

JEL codes: O33, O35, O17.

¹ This paper presents independent research commissioned by the Future of Finance Initiative at Dvara Research, India, in furtherance of the Initiative's research agenda. The Initiative's work focusses on the impacts of digitisation and technological innovation in Indian finance, leading from the low-income consumer perspective on these issues.

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1. Introduction

Digitisation in India is primarily taking place through mobile phones. This is clearly evidenced today with the mobile phone seemingly omnipresent during the Covid-19 crisis. India has seen a rapid increase of mobile phone access in the last few years (GSMA, 2019). This leapfrogging has taken place alongside rapidly increasing availability of cheap mobile phone handsets and access to cheap mobile data (GSMA, 2019).

However, while availability and access to phones have increased overall, women lag behind on access, usage and ownership of mobile phones in India. According to the GSMA (2019), the Indian gender gap, or the gap between men's and women's mobile phone ownership was 26% while the gap between women's and men's use of mobile internet was a staggering 56% in 2018. With such a difference in access and usage of mobile phones, there is a need to better understand how women access and use phones, as well as the barriers they face in phone access and usage.²

The objective of this paper is to provide a snapshot of what mobile phone access and use looks for low-income women in India based on semi-structured interviews with 15 key stakeholders and structured interviews with 60 women end-users across six states in India, and expert interviews. The women are all customers of financial services provider Dvara KGFS, which provides financial services solutions to women and men across the country and has regional offices in the six states covered in this study.³ Therefore, the paper considers the level of access and use among women with some level of pre-existing agency and mobile phone know-how.

The paper considers the following research questions:

- How do women access phones, and what kind of phones do they access?
- How do women use their phones – how frequently, in what way, and to do what?
- What are barriers to phone access and use- what role does monitoring, social stigma and digital literacy play?
- What are implications for mobile phone-based digitisation and gender inclusion?

We find that nearly all respondents had their own phone, had smartphones and had new phones. About half of them had bought their own phone. Women primarily use the phone at home to avoid raising suspicion or gossip, and tend to use it more for urgent calls and calls with family than other family members of the family. Women reported calling and receiving calls on a daily or weekly basis. When it comes to messaging services, WhatsApp had overtaken conventional SMS (on both smart and basic phones), and the majority of women use WhatsApp much more frequently. Women additionally use the phone for entertainment and seeking out information by watching videos received through WhatsApp, or going on YouTube, listening to songs and using other social media. About half of the women use mobile payment applications and women with a higher level of education appear to use mobile payment applications more. Very few women said their phones were monitored, though they have serious concerns about the risk of harassment online, primarily through random calls.

² This paper sets out to provide a snapshot of how women use mobile phones. It does not make inferences on whether the type and amount of usage is attributable to gender-based barriers or other matters such as preferences or personal choice. This is out of scope and merits further larger and more in-depth studies.

³ The respondents may therefore be used to certain models of thinking and financial behaviour that people who do not use financial services may not be accustomed to.

While women are able to operate their phones for every-day purposes, they struggle with adequate digital literacy when it comes to advanced features.

This paper contributes to a significant gap in the literature on women's access to, and use of, mobile phones in India. The paper highlights the need for further research to ensure that women do not fall further behind in digitisation, in turn further excluding women from services that are going online and reducing their agency.

The next section offers a brief review of literature before section 3 details the methodology used for data collection. This is followed by findings from the study in section 4, a discussion of insights from the interviews in section 5, and finally a conclusion with suggestions for future research and implications for policy-makers and practitioners in section 6.

2. Review of Literature

This review of literature is a summary of *What Do We Know About Women's Mobile Phone Access & Usage? A review of evidence*, by the same author, previously published as a working paper on the Dvara Research website.⁴ The review of literature encompasses Indian and global literature published from 2016 onwards. This cut-off year was decided on given the rapid changes in mobile phone access and use. Older literature may have been out of date. The section is divided into three sections: access to phones, use of phones and barriers to access and use.

2.1. Mobile Phone Access

Research output on mobile phone access in India has primarily come in the form of large global surveys on mobile phone access that cover India. These found that women have a much lower access to phones than men in general but especially in South Asia (GSMA, 2018,2019, LIRNE Asia, 2019). In fact, South Asia was found to be the region with the lowest access to phones for women (GSMA, 2018).

When women in India do have access to phones, it is frequently another male family member's phone or a shared family phone. The men in the family have primary use and ownership of the phone (Kovacs & Ranganathan, 2017; Barboni et al., 2018; GSMA, 2018). By contrast, in Kenya, studies by Wyche & Olson (2018), Wyche, et al. (2018) and Wyche, et al. (2016) found that most women generally had their own phones. Though these were frequently older handsets and / or cheaper handsets with fewer features.

2.2. Mobile Phone Use

A few studies have gone beyond access to phone, to look at use of phones. They find that women who have phones tend to use a smaller range of functions than men – partially because of limited access to phones with advanced capability and partially because of limited ability to use more advanced functions (GSMA, 2019; GSMA, 2018). While women lag behind men in all types of use, the gap between men and women's use of mobile phones widens with the sophistication of the task (Barboni et al., 2018).⁵

None of the existing studies focused on the use of mobile money by women in India. However, reviewing international literature, Wyche & Olson (2018), Wyche, et al. (2018) and Wyche, et al. (2016) in a study of rural women in Kenya, found that the easy-to-use M-Pesa application was commonly used among women.

2.3. Barriers to Access and Use

Three recent studies highlighted that the kind and the place of phone use is gendered in India, with women expected to use the phone considerably less, and primarily at home, to not arouse suspicion or cause reputational harm (Kovac & Ranganathan, 2017; Barboni, 2018, Tenhunen, 2018). Women are expected to use the phone less frequently and primarily to communicate with family or for urgent matters, while men have a much wider range of phone uses (Tenhunen, 2018).

⁴ The working paper can be accessed [here](#).

⁵ While this study refers to the gender gap in mobile phone use, and studies the way women access and use mobile phones, it does not attempt to attribute the gap or usage pattern to barriers or personal preferences and choices. That is out of scope for this paper and merits further in-depth and more extensive research.

Likewise, women's phones and phone use tend to be supervised or monitored (Kovacs & Ranganathan, 2017; Barboni, 2018; CGAP, Dalberg & Dvara, 2017), which significantly limits the agency and independence that mobile phones may otherwise give women.

Women often self-censor their presence online due to risk of online harassment as well as reputational harm, including bringing shame on the family by rumours spreading from online visibility or activity (Barboni, 2018; CGAP, Dalberg & Dvara, 2017).

Beyond social barriers, there are physical and knowledge barriers to phone use. These include the cost of the phone (and credit), access to funds to buy the handset and top up credit, ability to recharge the handset and access a facility to top up credit, ability to operate the handset, and lastly limited literacy and limited digital literacy (Gammage, 2017; Kim, 2018; UN-Women, 2019; Potnis, 2015a+b; Barboni et al., 2018; Kapinga et al., 2016).

2.4. Summary and Research Questions

There are few studies on women's access and use of mobile phones in India. However, overall, the literature review suggests that women in India have less access to phones, generally have access to a shared phone or a phone with less features; use fewer features on the phone as compared to men, are more constrained in the geographic location they may use the phone, for how long and for what purpose. Women face significant barriers to use, especially social barriers related to notions of honour and shame. As a result, women regularly self-censor their phone usage, and their phones and phone usage are frequently monitored.

There was no published evidence on women's use of digital financial services through mobile phones in India. However, evidence from Africa (primarily using M-Pesa) suggests that women often struggle to access all features on the phone, and some of the services of digital financial inclusion. Phones are not designed intuitively to suit women's mental models, and women's lower level of literacy and digital literacy makes it hard for women to negotiate digital finance and other more advanced features of the mobile phone.

To build on the existing evidence, and begin to fill research gaps, this study focusses on the following key questions:

- How do women access phones, and what kind of phones do they access?
- How do women use their phones – how frequently, in what way, and to do what?
- What are barriers to phone access and use- what role does monitoring, social stigma and digital literacy play?
- What are implications for mobile-phone based digitisation and gender inclusion?

The next section details the methodology.

3. Methodology

In order to answer the key research questions, qualitative interviews were used. Given the lack of existing data on digitisation and gender in India, a smaller study to provide a “Snapshot” of the state on the ground made sense as a first step. The aim of the data collection was two-fold: to gain direct insights from low-income women across India on how they access and use mobile phones and the constraints they face, and to get a sense of whether these findings are likely to hold at scale or whether they are specific to the sample. Given the small sample and short time-scale, we used a two-step process. First, we undertook preliminary semi-structured interviews with 15 experts and practitioners working in organisations that engage with women and digitisation. These interviews provided us with broad insights and an understanding of key questions and constraints to consider.

Based on the insights from a review of literature and the preliminary interviews, a sampling strategy and questionnaire (Appendix 2) were devised to interview 60 women end-users across India, as a second step. While the sample is small and serves as a “Snapshot” the findings from it can to some extent be triangulated with the expert and practitioner interviews to get a sense of whether these are findings specific to a small set of women or whether they have the potential to be more generalisable.

Semi-structured interviews were undertaken with 15 key stakeholders who included a mixture of academics, experts and practitioners working with low-income women user groups. The appendix provides a list of interviewees (Appendix 3). The aim of these preliminary interviews was two-fold. First, to gain broad insights on access, use and barriers from different perspectives in order to narrow down on the core focus of the research with the women end-users. Second, the interviews provided insights on the kind of questions that should be asked during interviews with women end-users. For example, the issues around geography of use and monitoring were especially highlighted during the expert interviews. Likewise, how women on the ground see the distinction between smartphones and basic phones was mentioned, as well as to what extent there is a shift from a focus on basic access to good quality access and use of phones. The interviews offered insights into how heterogeneous the level and type of phone use is across India. These semi-structured interviews were undertaken during June-July, 2020 over the phone. They followed a “Conversation with a purpose” approach (Burgess, 1988). Notes were taken while speaking and these were later analysed in order to provide input for designing the women interview tool.

Structured interviews with 60 women end-users from low-income groups in six different States (Uttarakhand, Jharkhand, Chhattisgarh, Odisha, Karnataka and Tamil Nadu) across India were completed. The aim of these interviews was to gain a set of snapshots from different user groups and different contexts of how women use their mobile phones and why that is the case. The Interview questions focus on:

- Women's access to phones - the type of phones they access, what access looks like
- Women's use of mobile phones - what drives women's use, what services do women use (calls/messages/applications etc.)?
- Barriers to women's access and use - what hinders women's access and use of phones, how do socio-cultural barriers including monitoring play a role?

The data collection was undertaken during the COVID-19 pandemic during October-November, 2020. Given the pandemic, all interviews had to take place over the phone, which

is why it was especially important to work with an organisation which has a strong existing local network of women. This necessitated good links with respondents. For this reason, Dvara KGFS was selected as a partner for facilitating the interviews. Dvara KGFS provides financial services solutions to women and men and has regional offices in the six states covered in this study. For each state, Dvara KGFS connected the author with the regional office where a female point person helped set up interviews with women in their network. In each state, five women were interviewed each in one rural location and in one urban location.

The interviews were conducted in Hindi, Kannada, Tamil and Odia by interviewers who were briefed and trained on the questionnaire. Questionnaires were translated from English into the four languages. Interviews were recorded after consent, and subsequently translated, transliterated and transcribed in English by the interviewers. Quotes (in italics and quotation marks) in this paper are taken from these written records.

Sample Characteristics

In each of the six states ten women were interviewed – five from a rural location and five from an urban location. The following locations were included in the study:

- Tamil Nadu: Ariyalur, Chennai (outskirts), Thanjavur.
- Karnataka: Kamarahalli, Karakanahalli, Lingadevara, Kopallu, Rajenahalli, Terakanambi, Yelwala.
- Uttarakhand: Ajeet Nagar, Babugarh, Badamawala, Dhanipur, Dharmawala, Rasulpur.
- Chhattisgarh: Ambikapur, Balaoji, Bhakhara, Bhilai, Bilaspur, Khooteri, Motipur, Patan, Raipur.
- Jharkhand: Mandu and Peterwar.
- Odisha: Bhadrak, Jajpur and Keonjhar.

The respondents were customers of Dvara KGFS which provides financial services to low-income individuals; ensuring that the women came from a similar socio-economic group.

The women range in age from 21 to 49 years. Their schooling ranges from 5th standard to graduation, with most around 10th or 12th standard.

All women can read basic words in regional language. 57 out of 60 respondents can read newspapers in the regional language. Additionally, 59 out of 60 respondents can read SMS, and 39 can read at least basic SMS in English while 21 cannot.

All the respondents are or have been married. 57 women out of 60 women have children and 44 women reported having children currently in school or higher education. Half of them live in joint households and half in single family households.

Out of the respondents, 22 women are housewives, and 38 are working. The women who reported to be working have a range of jobs including Anganwadi work, self-run businesses (such as tailoring or beautician), farm work, factory work and office work. Several work from home, and in a part-time capacity, while others work outside of the home.

Limitations

The study covers a limited sample of respondents who are spread out across rural and urban locations across six states. Additionally, this sample of women are customers of Dvara KGFS and already have some level of agency as they engage in financial transactions with Dvara KGFS. Considering the women in this sample use financial services, they may be used to certain models of thinking and financial behaviour that people who do not use financial services would not be accustomed to. The sample and results should therefore be interpreted

as a snapshot of what is seen on the ground across multiple states keeping the specific sample in mind. While this study can inform larger studies in future, it cannot provide statistically significant evidence of phone access, use and its impact. The researchers hope to scale studies in future for wider evidence base.

4. Findings

The findings are based on data from the interviews with the 60 women and covers access to mobile phone, kinds of use of mobiles phones, and barriers to phone access and use. As noted in the methodology section, as the women are customers of a financial services provider and make financial transactions. They can be considered to have some amount of agency. This may make them distinct from women with a different profile who do not have the same agency. The findings are solely based on this sample and does not attempt to extrapolate to the general population.

4.1. Access

This section discussed the respondents' access to phones, the type of phones they have access to, and whether they bought them themselves.⁶

4.1.1. Access to Mobile Phone

All women in this sample have access to a mobile phone, and all women bar one noted that the phone is generally charged and available. Exceptions are where women use another family member's phone and that person is away.

In total, 88% of women have their own phone. Of the 12% without their own phone, five use their husband's phone, one uses her child's phone, and one uses a shared family phone. All women with a shared phone live in rural areas. All women in urban areas have their own phone. Lastly, out of the 38 women who work, four do not have their own phone.

4.1.2. Type of Phone

Overall, 79 % of respondents have smart phones while 21% (13 in total) have basic phones. A smart phone is a phone with internet access and advanced feature while in our sample, basic phones include basic feature phones (feature phones are not understood as a separate category by respondents). This is the understanding of basic and smart phones that respondents have and it aligns with the feedback we received from preliminary interviews.

Basic phones now include some features that previously were only accessible to smartphone users. For example, in India, a "Lite" version of WhatsApp is available to run on basic or feature phones that have the capability to run such applications.

Half of the basic phone users have their own phone while the other half use a basic phone that is shared or that belongs to someone else.

Among users of basic phones, four are based in urban areas and the other nine are rural users. Jharkhand and Chhattisgarh have four women each using basic phones. Odisha has three women using basic phones, while in Tamil Nadu and Karnataka only one woman in each state use a basic handset. No women in Uttarakhand reported using a basic phone.

Most women have a new phone rather than a handed down phone. Of the 53 women with their own phone, seven have an old or hand-me-down phone.

4.1.3. Purchasing Phone and Credit

About half of the women (or 29) stated that they bought the phone themselves. The other women have phones primarily gifted by the husband. One woman had taken over her mother-

⁶ See Table 1 in Appendix 1 for further details related to the data in this section.

in-law's phone when she passed away and others took over their husband's old phone. Of the women who had bought their own phone, 25 bought a smart phone while four bought a basic phone. Four of the women who bought phones are housewives while the other 21 work and earn their own money.

Overall, women across all six states have bought their own phones, with the largest number of them (nine out of 10) in Uttarakhand. In Jharkhand and Odisha no urban woman had bought her phone, but in the other states, there is no significant rural-urban difference between buying and being gifted a phone.

When it comes to buying credit to top up the phone, a majority of women respondents do so on their own. Overall, 28 women (47%) top up their credit themselves- or jointly with their husband. Among women who bought their own phone, 23 out of 29 top up their credit themselves or jointly with their husbands.

"I get my recharge on my own from my money and the children get their recharge done from their father."

"We live in a joint household anyone can get the recharge done. It's not the responsibility for just one person."

4.2. Phone Use

The ways in which women use their phones do not vary a great deal across states or across rural and urban areas.⁷

4.2.1. Frequency of Use

The women use their phones on a frequent basis. Overall, 25% of the respondents use their phone hourly and 68% a few times a day. Only four women, or 7% of respondents, use it once per day or less. There is no discernible difference between using the phone in rural versus urban areas, between different states or between women of different ages.

The next sections details what the respondents use the phone for.

4.2.2. Communication

Most of the women make calls on a daily basis (at 87%), while all women bar one (95%) receive calls at least once during the day. In addition, almost a fifth of the women noted that they receive automated government information calls at least weekly while a third said they receive such calls monthly.

Women most commonly make calls to the husband and other family members. 72% of women make calls to family on a daily basis and another 20% on a weekly basis. There was no real difference across rural and urban areas or across the country.

It is noteworthy that a quarter of the respondents make calls to friends daily while 40% do so on a weekly basis. Women in Chhattisgarh and Jharkhand were less likely to call friends at least on a weekly basis than women respondents in the other states. However, across all six states, there were no differences between responses from rural and urban-based women.

⁷ See Tables 2-8 in Appendix 1 for further details related to the data in this section.

In contrast, only 28% of respondents make a work or business-related call daily while 22% make a weekly call. 24 out of 38, or 63% of women who work, make a business call at least weekly (another two make calls monthly). Nine women claim to never make business or work-related calls though they work.

10% of women make a call to the government and related services at least weekly while 30% do so on a monthly basis and a majority at 60% never make such calls, suggesting that husbands or other family members manage such matters. Respondents were asked about making calls related to the running of the household and 17% noted that they make such calls at least once a week while 18% do so monthly. 65% of women do not make any such calls at all, suggesting again that it is a domain that the husband or other family members manage.

Women who work were not more likely to make government calls than housewives, with 12 out of 38 working women making calls compared to 9 out of 22 housewives.

With respect to messaging, women at all locations reported a much higher usage rate of WhatsApp as compared to regular SMS messages. Overall, as noted in Table 4, only about 30% of respondents send or receive an SMS at least weekly to or from a contact. Out of these, only 8% send and 15% receive an SMS daily. However, only women in Tamil Nadu, Karnataka, Uttarakhand and Odisha reported using SMS daily or weekly. Most Jharkhand and Chhattisgarh respondents stated that they never use SMS for communicating with contacts.

Women at all locations except in Tamil Nadu receive government-originated SMS however. 25% of respondents receive automated SMS from government at least weekly while another 30% receive messages on a monthly basis. 43% do not receive any government-related messages at all. Additionally, 40% of women at all locations receive other automated SMS (including spam) at least weekly while another 27% receive them monthly.

The respondents are much more frequent users of WhatsApp as a medium of communication than of regular SMS, as noted in table 6. For example, 70% send or receive a WhatsApp message daily (compared to 8% sending and 15% receiving an SMS daily). Another 8% send or receive messages on a weekly basis. Only 20% of women do not use WhatsApp. As noted in section 4.1.2., both women with smart phones and basic phones use WhatsApp. Out of smart phone users, 89% or 42 out of 47 women use WhatsApp, while six basic phone owners use WhatsApp. The use is high at all locations, with two exceptions – rural Chhattisgarh and rural Jharkhand where the majority of women use basic phones.

55% of respondents send or receive a WhatsApp video daily while 17% do so weekly. Again, the usage is high apart from in Chhattisgarh and Jharkhand – possibly because the women in these two states use phones that do not have that capability. A feature that is more commonly used as a mode of expression is the updating of one's "WhatsApp status." 43% of respondents update their WhatsApp status at least daily, with another 22% doing so weekly.

4.2.3. Finance

Asked about the use of the mobile phone to manage finances, including mobile money applications such as PayTM and PhonePe, about half of the women responded that they use the phone for such purposes. Given that women were interviewed via an NBFC because they were customers, this is not surprising.

About 42% of women (or 25 in total) reported using mobile payment application. Mobile money applications are used across the country with the exception of Jharkhand where only

one woman stated that she uses it. 18% use mobile money at least weekly and 23% monthly. Out of women using smart phones, 53% use mobile money applications. No women with a basic phone claimed to use mobile money applications. Breaking down mobile money application usage by education level, nine out of 12 women with university degrees, and 13 out of 31 women with education levels between 10th to 12th standard, use such an application. Of the 17 women with less than 10th standard education, only three women used mobile money applications.

The most commonly mentioned mobile money application was Google Pay, followed by PayTM, PhonePe and one mention of SBI YONO. The women use mobile money for a variety of tasks including to:

- Repay loans and installments;
- Transfer money to/ from family;
- Pay at restaurant and in shops;
- Make chit fund payments and pay bills; and
- Charge phone credit

Additionally, a third of all respondents said they shop online. The only locations with no online shopping at all were rural Uttarakhand and rural Chhattisgarh.

A higher number of women use the phone to receive SMS messages with OTP while shopping, or with their bank balance. Overall, 52% of women receive OTP on their phone while shopping. In addition, out of the 48% that do not receive an OTP, ten mentioned that their husbands receive their OTP and other messages. It should be noted that it may be that the card used for the transaction belonged to the husband.

Eight out of 12 women with university degrees, 18 out of 31 women with education levels between 10th to 12th standard and five out of 17 women with less than 10th standard education use SMS-based OTP authentication services on their phones.

When it comes to notifications from their bank, 63% of women mentioned receiving bank balance information via SMS. Out of these, nine out of 12 women with university degrees, 21 out of 31 women with education levels between 10th to 12th standard and seven out of 17 women with less than 10th standard education reported receiving bank balance SMS.

At least one woman reported that her husband receives all information regarding finances on his phone. There may be a number of women among the 37% that do not receive an SMS, where the husband receives the information instead, including the 10 women who have mentioned that the husband receives notifications instead.

Lastly, when asked about whether they speak to their bank on their phone, only 20% of the women said they do so – and most of them live in Karnataka and Odisha. The 80% that do not, said that they either go to the bank branch themselves or that their husband would speak to the bank or visit the branch for them.

4.2.4. Upskilling and Information Seeking

The respondents were asked about whether they use the phone to gain information, news or knowledge in some way. 48% of women said that they do. They watch online news, go on Facebook, look at WhatsApp messages, use Google and use YouTube. About 30% of women highlighted WhatsApp messages as a source of news and information. Several women noted

that during the COVID-19 lockdown, they used their phones to search for information about the virus and the latest government measures.

When women want to learn about something and seek out information, it tends to be on:

- Cooking - new recipes;
- Rangoli & home décor;
- Bank information;
- Fitness videos -yoga;
- Upskilling of stitching;
- Job vacancies;
- Agriculture information -growing crops, or
- Astrology.

Additionally, one woman highlighted the usefulness of Google.

"It has become easier for us as parents to help our children with their homework because we get information from Google."

Women across all states said they seek out information via the phone, though the smallest number was in Jharkhand.

Out of 44 women that said they had college or school-going children, 41 said their children were doing online classes via their or their husband's mobile phone during the pandemic. The children appear to use different modes of online learning - some send videos and exercises to complete via WhatsApp groups, others watch videos online, others have live-stream classes.

4.2.5. Entertainment

Asked whether they use the phone for entertainment or "Time pass," 57% of respondents said they do. Commonly mentioned modes of entertainment were watching videos and listening to songs, receiving and watching WhatsApp videos, using share chat and TikTok (prior to the ban), watching YouTube videos or cooking or related to spirituality, devotional songs or horoscopes. Several women pointed out that they only had time to watch entertainment in the evening. Many of those who said they did not use the phone for entertainment said that they had no time to do so.

"I don't use the phone for the time pass as I don't like it. I have a lot of work to do."

4.3. Barriers to Access and Use

The barriers to phone use have been categorised under gendered phone use, monitoring and restrictions, online harassment, and mobile phone literacy.⁸

4.3.1. Gendered Phone Use

Women primarily use their phones at home, with only one third of women saying they are comfortable using the phone outside as well as at home. Women across all locations preferred to use the phone at home, and in Karnataka and Uttarakhand only one woman used

⁸ See Tables 9-11 in Appendix 1 for further details related to the data in this section.

the phone outside of their home. There was no distinction between rural and urban India in terms of place of use. Out of the 38 women who work, 14 use the phone outside, while among the 22 homemakers, six use the phone outside. Many of the women who work, work from home.

There were mixed reasons for not using the phone outside. Some women were not allowed to use their phone outside, while others worried what neighbours would say.

"I don't like it. Even if I get a call outside home I tell them that I'll call back once I reach home. It doesn't look good talking outside."

"There are too many people around...Here people may say something."

"This is a village area here...so people will comment how much is she talking, where is she talking. So that is why I don't prefer to talk outside."

"No, no I don't talk outside. I have my elder sister-in-law [with me] so it doesn't look good if I talk outside. I have shame in me."

"It is not appropriate for a daughter-in-law to roam outside to talk on phone. My in-laws would not like it. I feel shy."

However, women also noted that they would use their phone regardless of the neighbour's opinion, and that with phones increasingly all-pervasive, the use of phones outside of the home is becoming normalised.

"Even though I am a housewife, I have to see to each and everything in the house and outside also because my husband lives outside and relatives do not live here. If I get a call in the house I use it at home and if I have to go outside I usually carry my phone with me. So, I use my phone in both the situation."

"I work as a loan agent as well so get calls and messages frequently on my smartphone. Let them comment now if I'm working I'll have to answer the phone."

"It's very simple. If I am going outside, then obviously I will be carrying the phone with me and I will be using it too, and when I am at home, I will be using it at home too."

"What will they comment everyone has a phone nowadays."

"[I] don't overuse or misuse it, so no one says anything."

"I don't care about the neighbours, let them think."

Women who use their phone outside tend to take calls but not check messages or make lengthy calls themselves.

"It's okay if I get a call when I am outside. I pick it up but I generally make calls to friends or family only when I am home."

Asked about whether there is a difference in how women and men use their phones, the answers were mixed. Some women said their husbands use the phone more than they do, because they are busy with housework. Other women said they in fact used the phone more as their husbands were busy with other matters or did not have as advanced phones as the women did. Yet another group of women said that they used the phone primarily for entertainment and keeping in touch with family while the men used it primarily for business. A fourth group said that they use the phone primarily for work-related matters while their husbands use it more for entertainment. The responses were mixed across the different states and across rural and urban locations.

4.3.2. Monitoring and Restrictions

The vast majority of women interviewed do not ask for permission to use the phone. Only three women do – one asks her husband, one asks her mother-in-law and one reported asking her children. None of the three women have their own phone, two use their husbands phone. One woman uses her husband's old phone which is a common phone at home, which may explain why she has to ask her children to use it – they may be using it more frequently and it may be less about permission and more about access. All three women reported using the phone infrequently.

The women's phones are sometimes checked. 10% or six women reported that their husbands look at the phones at times (in one case it was clarified that he looks at WhatsApp, but not the phone). Another three women said that anyone can access and check their phones any time, not recognising it specifically as he phone being checked.

"He can't do this. If he does this much peeping and questioning I will have a fight with him. He should have little bit of trust."

"My husband doesn't check my phone but he sometimes opens WhatsApp and sends message or looks at it."

"My husband just asks for my phone and checks whatever he wants to. He does it every morning and evening when he comes back from work."

"Anyone in the family can take my phone and check whatever they can. They generally don't do it though."

The monitoring of women's phones has been highlighted as an issue in the primary interviews for this paper, so it may be that the level of agency women in this sample have is reflected in the low number of women who report that their phones are checked.

4.3.3. Online Harassment

About half of the women in Chhattisgarh, Jharkhand and Odisha reported receiving random calls as a form of online harassment. A couple of women also stated that they receive

messages via WhatsApp or SMS. One woman said that she used to get more calls before but that it has now reduced.

"I don't know [how to use it]. I just know how to play music and how to make a call and to receive a call. That's it. I can use google-woogle to play my song."

A common way to deal with harassers was to hand the phone over the husband or father-in-law.

"I give the phone to my husband and he scolds them then they don't call. He also puts it in block list."

"I just say that I'm speaking from the police station then they don't ever call again."

"I block the number, threaten them, take help of neighbours/brother in law to take control of the situation."

Women in other states stated they had not received strange calls or experienced any other form of online harassment. However, many noted that women must be especially careful not to give out their numbers to strangers because of the threat of online harassment.

"It is unfair that women have to be so careful and cautious about [smartphone] which men use so casually. Women suffer because of harassers even when it is not their fault."

Additionally, several women noted that they get wrong number calls occasionally. Nobody mentioned any other form of online harassment.

4.3.4. Mobile Phone Literacy

Most women – about 90% were happy with the level of knowledge they have of the phone – they felt it was adequate for their daily use. Some women have spent significant time familiarising themselves with more advanced features, while others are content with knowing more basic tasks like making and receiving calls, and playing music.

"Yes I can do everything on my phone from making calls and sending messages."

"I can easily use my phone. I can type and find my contacts and other things/apps on the phone without any trouble."

"I do not know how to use phones very well but I know enough for my daily use. I know phones can be used in multiple ways but I never felt the need to learn more than what I already know."

Others were aware that they did not know too much.

A major impediment to mobile phone use is lack of knowledge about how to use the mobile phone. 37% of women stated that they taught themselves how to use their phone. The second most common way to upskill was to learn from their children – as did 28% of respondents. Only 17% of women learnt from their husbands – in spite of husbands frequently gifting the women their phones.

Asked about how they navigate their phones, the majority stated that they can navigate the phone by reading. This is primarily the regional languages rather than English. Those that cannot read English, memorise last two digits of a phone number to find it, use Truecaller to find the number, or navigate by app logos and memorising the steps.

“I can read whatever is written in Hindi and ask my son for everything else.”

“In case I am searching numbers, I memorise last digit and search for it.”

When they have a problem with their mobile phone, one third of respondents ask their children for help.

The second most common source of help is the husband, which 28% of respondents turn to followed by 12% trying to solve the problem themselves, using online information sources.

“I search and understand it from YouTube and then follow it.”

When it comes to the tasks that women cannot do, they frequently mentioned mobile phone repair, and several women mentioned topping up the phone credit. 11 women specifically highlighted online banking and using mobile money applications as something they do not know about (though many more had stated that they do not use it, so the number of women who do not know how to use mobile money applications is likely much higher).

This concludes the findings based on interviews with women end-users. The next section discusses the findings in light of the literature.

5. Discussion

This section discusses the findings in light of the literature. It is structured around the following questions:

- How do women access phones, and what kind of phones do they access?
- How do women use their phones – how frequently, in what way, and to do what?
- What are barriers to phone access and use- what role does monitoring, social stigma, online harassment and digital literacy play?
- What are implications for gender inclusive digitisation?
- What are implications for financial services providers?

As noted previously, the women's profile as customers of financial services provider Dvara-KGFS means that they have some amount of agency considering they make financial transactions with Dvara-KGFS, which makes them distinct from other groups of women without this level of access and basic mobile phone know-how. Nevertheless, keeping this in mind, it is noteworthy that good quality access and ability to use the phone how, when and where they want is not a given.

5.1. Phone Access

With respect to access, while the literature suggests that women have significantly less access to mobile phones and generally access a shared, an older and a more basic phone, that was not the case for our respondents. The majority of women have access to their own phone (88%), and most have access to a smart phone (79%). In some cases, women had a smartphone while the husband had a basic phone.

Even when considering basic phones, these phones now have capability for some of the most used applications such as WhatsApp, making them basic feature phones, and closing the gap to smartphones, in terms of capability. The main difference appears to be in accessing internet and more advanced features.

There was no major difference in access to phone type between rural and urban areas. However, everyone who access a shared phone were based in rural areas. Likewise, there was no major difference between different parts of the country in type of access or type of phone the women have access to.

About half of the women said they had purchased the phone themselves, while the other half had been gifted a phone, primarily by the husband. The women who had bought phones had primarily bought a smartphone, though a handful had bought a basic phone. About half of the women top up the credit themselves, while the husband or children do it for the other half.

While these are great developments, It is worth keeping in mind that the sample is small and there is likely to be a bias as there as the sample of women interviewed is connected to a financial lending organisation, which means women need to have access to some kind of phone – whether their own or that of a family member.

5.2. Phone Use

When it comes to frequency of use, 93% of respondents use the phone at least a couple of times a day. This suggests a significant improvement in access as compared to existing literature. Even women who do not have their own phone reported using a phone daily, and only a couple of women said they rarely use the phone.

Most of the women make calls on a daily basis - at 87% while all women bar one (95%) - receive calls at least once during the day. Women most commonly make calls to the husband and other family members. A much smaller shared make business or work-related calls. This is in line with the literature which has suggested that women tend to use the phone for family much more than business, while men tend to have more business calls.

Women's responses tended to be similar across rural and urban areas, and across the six states, suggesting that mobile phone usage trends may be converging across the urban and rural divide for women with a similar education, age, socio-economic and marital status.

Women reported receiving automated government calls and messages, relatively frequently and for the most part at least monthly. This may at least partially due to the fact that the interviews took place during the COVID-19 pandemic, resulting in increased government communication. About half of the women reported dealing with government by calling them up, while the rest let their husbands do that.

When it comes to messaging, only 30% of respondents send or receive an SMS at least weekly from a contact. Out of these, only 8% send and 15% receive an SMS daily from contacts. Instead, respondents across India are much more frequent users of WhatsApp as a medium of communication than of regular SMS. For example, 70% send or receive a WhatsApp message daily (compared to 8% sending and 15% receiving an SMS daily). Another 8% send or receive messages on a weekly basis. Only 20% of women do not use WhatsApp. A feature that is more commonly used as a mode of expression is update one's "WhatsApp status". 43% of respondents update their WhatsApp status at least daily, with another 22% doing so weekly. This is likely a low-risk mode of communication and expression, that does not involve direct messaging with anyone directly.

Asked about their use of mobile money and mobile banking, about 40% of women reported using mobile money applications. Mobile money is used across the country with the exception of Jharkhand where only one woman stated that she uses it. Women with a higher level of education appear to use mobile payment applications more as women with a graduate level education had a far higher level of use (nine out of 12) than women with less than 10th Std. education (three out of 17).

While there are no studies on women's use of mobile money in India, it may well be that the COVID-19 pandemic has pushed usage of mobile money applications up. In fact, a few women noted that they learnt to use digital finance during the lockdown, while others singled out mobile money applications as something they do not know but would like to have as a digital skill.

The most commonly mentioned mobile money app was Google Pay, followed by PayTM, PhonePe. The women use mobile money for a variety of tasks, from shopping online and offline to transferring money to family members and paying of installments, loans and bills.

We also asked the women if they receive SMS notifications with OTPs when shopping or SMS with their bank balance, and 52% of women receive OTP on their phone while shopping and 63% of women mentioned receiving bank balance information via SMS, suggesting that mobile phones are increasingly integrated into shopping and banking experiences, and that women are using some form of digital finance, even when they do not use mobile money specifically.

More encouraging was that half of the respondents across all states noted that they use the phone to look for new information. They watch online news, go on Facebook, look at WhatsApp messages, use Google and use YouTube. About 30% of women highlighted WhatsApp messages as a source of news and information. Several women noted that during the COVID-19 lockdown, they used their phones to search for information about the virus and the latest government measures.

Women have also been using their phones for online learning of their children. Out of 44 women that said they had college or school-going children, 41 said their children were doing online classes via their or their husband's mobile phone during the pandemic. The response overall was positive to online learning.

5.3. Barriers to Phone Access and Use

Consistent with the existing literature and previous studies, this study found that women primarily use their phones at home, with only one third of women saying they are comfortable using the phone outside as well as at home. There was no distinction between rural and urban India in terms of place of use. Some were not allowed, others worried what neighbours would say or that they might bring shame on the family or themselves. However, some women also noted that they would use their phone regardless of the neighbour's opinion, and that with phones increasingly all-pervasive, the use of phones outside of the home is becoming normalised. Again, this may mean that with phones increasingly common, the control of women's use outside of the home may reduce over time.

The literature had suggested quite strongly that women use the phone differently to men – primarily for calls with family, while men use it primarily for business, chatting to friends and for entertainment. However, in this study, asked about whether there is a difference in how the women and the men use their phones, the answers were mixed. Some women said their husbands use the phone more than they do, because they are busy with housework. Other women said they in fact used the phone more as their husbands were busy with other matters or did not have as advanced phones as the women did. Yet another group of women said that they used the phone primarily for entertainment and keeping in touch with family while the men used it primarily for business. A fourth group said that they use the phone primarily for work-related matters while their husbands use it more for entertainment. The responses were mixed across the different states.

Monitoring and surveillance have emerged as key concerns in recent studies on mobile phone access and use in India, and the preliminary interviews backed this concern up. However, our interviews found that the vast majority of women interviewed do not ask permission in order to use the phone. 10% or six women reported that their husbands look at the phones at times (in a second case it was clarified that he looks at WhatsApp, but not the phone). Another three women said that anyone can access and check their phones any time, not recognising it specifically as the phone being checked.

Likewise, the concern that male family members receive messages and OTPs on behalf of the women proved right, as at least ten women mentioned that their husbands receive their OTP and other messages on their behalf. At least one woman reported that her husband receives all information regarding finances on his phone, so there may be a number of women among the 37% that do not receive an SMS, where the husband receives the information about bank balance and other bank details instead. This is a real concern with respect to both data privacy and enabling women's participation in digital finance. At least one woman mentioned that

their husbands want to take care of all matters financial and they do not have the option to do so themselves.

Given that the monitoring of women's phones has been highlighted as an issue in the primary interviews for this paper, it may be that the sampling for the interviews may reflect in the low number of women who report that their phones are checked, since everyone was married, and many had been married for a long time (the average age of respondents was around 30). From the extant literature, it appears young women and newly married women face the brunt of monitoring.

Another frequent concern in the literature is online harassment. On our study about half of the women in Chhattisgarh, Jharkhand and Odisha reported receiving random calls as a form of online harassment. However, in other states few women mentioned receiving such calls. A common way to deal with harassers was to hand the phone over the husband or father-in-law. No other form of harassment was mentioned.

However, many noted that women must be especially careful not to give out their numbers to strangers because of the threat of online harassment, so women remain very much aware of the dangers of online harassment, and that they are likely to be blamed for it.

Digital literacy is a significant barrier according to the literature. Studies have shown that women tend to use more basic features than men. This study found that most women – about 90% were happy with the level of knowledge they have of the phone – they felt it was adequate for their daily use – which includes not only make calls and sending and receiving texts, but also listening to songs and playing videos. Some women have spent significant time familiarising themselves with more advanced features, while others are content with knowing more basic tasks like making and receiving calls, and playing music. While most women noted that their husbands and children were able to use the phone better than they were, others said that they had a better understanding of how to operate the phone than their husbands. In this sample, therefore, there does not seem to be a significant difference between what women and men are able to do with their phones. Women who are unable to navigate by reading the text on the phone were able to navigate by icons or memorising steps.

Existing literature suggest that men are relatively unwilling to help teach women how to use the phone. This study appears to confirm this, with children rather than husbands are key to teaching women in the family digital literacy. 37% of women stated that they taught themselves how to use their phone. The second most common way to upskill was to learn from their children – as did 28% of respondents. Only 17% of women learnt from their husbands – in spite of husbands frequently gifting the women their phones. When they have a problem with their mobile phone, one third of respondents ask their children for help. Slightly fewer ask their husbands.

5.4. Implications for Gender Inclusive Digitisation

While much more research at greater scale and depth is required to fully understand the dynamics of women's mobile phone usage, some implications can be drawn from the snapshot provided in the findings.

First, within this specific sample, the main issue related to use, since the majority of women have their own phone, respondents were talking of phones as ubiquitous, and most phones were able to use applications such as WhatsApp. Instead, the focus should now shift to how to enable women to use their phones well. There needs to be a better understanding of how

phones can become more intuitive to women's use, and how women can easily upskill to be able to take full advantage of phones.

Second, various forms of monitoring and surveillance – whether actively checking phones on a regular basis, receiving SMS and OTP on behalf of women, or constraining women's geography of use, is clearly a major challenge to gender-equal phone use. However, it is not part of the mainstream discourse on digitisation and empowerment through digitisation. Practitioners and policy-makers therefore need to better recognise and be mindful of the side-effects of digitisation in terms of control.

Third, policies and programmes tend to consider phone usage from a gender-neutral angle, but need to be cognisant of the different usage patterns of women and men, and design for these in mind.

5.5. Implications for Financial Services Providers

First, even where women have enough agency to be a customer of financial services, it does not automatically translate into ability to freely access and use their phones as and how they wish. There are significant constraints to where women can use their phones and clear expectations on the kind of use that is considered appropriate. Financial service providers need to take into account such restrictions when designing programmes that rely on engaging with women via mobile phones.

Second, financial services providers need to consider the implications of the monitoring that many women are under. This includes using the husbands' phone numbers as the main contact number, including for sending OTPs and messages of bank balance. How do financial services providers contribute to the empowerment of women if their husbands receive updates on their bank balance and OTPs? Can programmes and protocols be designed in a way that caters to both women who wish to be the sole users of their information, as well as to women who may not feel confident on their own to manage OTP and may therefore want their husbands support (for example by OTP going to two numbers)?

Third, with the limited ability to operate more sophisticated tasks such as mobile money applications and mobile banking, financial services providers should reconsider how they design for gender inclusion in their applications and programmes. Likewise, can there be better ways to provide upskilling of mobile phone tasks given that many women now use their phones to search for information?

6. Concluding Remarks

This paper set out to provide a snapshot of the way digitisation through mobile phones play out with respect to gender inclusion in India. To build on the existing evidence, and begin to fill research gaps, this study focussed on the following key questions:

- How do women access phones, and what kind of phones do they access?
- How do women use their phones – how frequently, in what way, and to do what?
- What are barriers to phone access and use- what role does monitoring, social stigma and digital literacy play?
- What are implications for mobile-phone based digitisation and gender inclusion?

Based on a review of literature, semi-structured interviews with 15 key stakeholders and 60 interviews with low-income women end-users across urban and rural locations in six states, this paper offered a snapshot of what women's access too, and use of phones look like today in India. As noted in the methodology section, the women interviewed are customers of financial services provider Dvara-KGFS, so they have some amount of agency considering they make financial transactions with Dvara-KGFS. This may make them distinct from women who do not have this access and profile. Nevertheless, a key insight is that even with some level of access and know-how of how to use the phones, women still face barriers to access and use.

Our interviews point to an increased access to mobile phones with advanced features for women. Nearly all of them had smartphones and were able to operate them reasonably well. Most women have their own phone but they remain constrained in the location and the type of use. Women primarily use the phone at home to avoid raising suspicion or gossip, and tend to use it more for urgent calls and calls with family than other family members of the family. Women reported calling and receiving calls on a daily or weekly basis.

When it comes to messaging services, WhatsApp had overtaken conventional SMS (on both smart and basic phones), and the majority of women use WhatsApp much more frequently. Women additionally use the phone for entertainment and seeking out information by watching videos received through WhatsApp, or going on YouTube, listening to songs and using other social media. Very few women said their phones were monitored, though they have serious concerns about the risk of harassment online, primarily through random calls. While women are able to operate their phones for every-day purposes, they struggle with adequate digital literacy when it comes to advanced features.

By understanding how women access and use mobile phones, we expect to be better able to understand what this means for enabling digital services including digital financial inclusion for women, as well as having a better understanding of barriers and exclusions with respect to digital financial inclusion.

This paper contributes to a significant gap in the literature on women's access to, and use of, mobile phones in India, highlighting the need for further research to ensure that women do not fall further behind in digitisation, in turn further excluding women from services that are going online, and reducing their agency.

6.1. Opportunities for Further Research

First, there is a requirement for much more data to understand the nuances of women's mobile phone use, and from a much larger sample. For example, research should provide a better understanding of how adolescent girls and young women use the phone – and the constraints they face, a better understanding of how not being able to operate phones may

constrain older women, and a sense of whether women in more patriarchal and conservative communities are able to access and use phones the way women in this study were.

Second, there is a need for studies that focus on specific aspects of phone usage and are able to dive deeper, for example through qualitative research and focus groups on specific issues such as financial inclusion, m-health or digital education.

Third, with women upskilling themselves on using the phone both by trial by error and by watching videos to seek answers, there are opportunities to study how to provide better user support to women, as well as study how phones and phone features can be made more user-friendly in their design.

Fourth, it is necessary to have a much better understanding of how to manage surveillance and monitoring of women's phone access and use.

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Appendix 1: Data Tables

Table 1: Access to Mobile Phone

State	Region	Phone Access		Phone Ownership		Phone Type	
		Yes	No	Own	Family	Basic	Smart
Karnataka	Rural	5	0	5	0	0	5
	Urban	5	0	5	0	1	4
Tamil Nadu	Rural	5	0	4	1	1	4
	Urban	5	0	5	0	0	5
Uttarakhand	Rural	5	0	5	0	0	5
	Urban	5	0	5	0	0	5
Chhattisgarh	Rural	5	0	4	1	2	3
	Urban	5	0	5	0	2	3
Jharkhand	Rural	5	0	3	2	4	1
	Urban	5	0	3	2	0	5
Odisha	Rural	5	0	4	1	2	3
	Urban	5	0	5	0	1	4
TOTAL		60	0	53	7	13	47

Table 2: Frequency of Phone Use

State	Region	Hourly	Few times /day	1/day	Few times /week	1 /week
Karnataka	Rural	3	2	0	0	0
	Urban	2	3	0	0	0
Tamil Nadu	Rural	0	5	0	0	0
	Urban	0	5	0	0	0
Uttarakhand	Rural	1	4	0	0	0
	Urban	3	2	0	0	0
Chhattisgarh	Rural	1	3	0	1	0
	Urban	3	2	0	0	0
Jharkhand	Rural	0	3	1	0	1
	Urban	2	2	1	0	0
Odisha	Rural	0	5	0	0	0
	Urban	0	5	0	0	0
TOTAL	Rural	5	22	1	1	1
	Urban	10	19	1	0	0
TOTAL		15	41	2	1	1
TOTAL %		25%	68%	3%	2%	2%

Table 3: Making and Receiving Calls

State	Region	Make calls				Receive calls				Automated Gov Call			
		Daily	Weekly	Monthly	Never	Daily	Weekly	Monthly	Never	Daily	Weekly	Monthly	Never
Karnataka	Rural	4	0	0	1	5	0	0	0	0	0	4	1
	Urban	5	0	0	0	5	0	0	0	0	2	2	1
Tamil Nadu	Rural	5	0	0	0	5	0	0	0	0	0	0	5
	Urban	5	0	0	0	5	0	0	0	0	0	0	5
Uttarakhand	Rural	5	0	0	0	5	0	0	0	0	3	0	2
	Urban	5	0	0	0	5	0	0	0	0	4	1	0
Chhattisgarh	Rural	2	2	0	1	3	1	0	1	0	1	2	2
	Urban	4	1	0	0	4	1	0	0	0	1	2	2
Jharkhand	Rural	2	2	0	1	5	0	0	0	0	0	2	3
	Urban	5	0	0	0	5	0	0	0	0	0	2	3
Odisha	Rural	5	0	0	0	5	0	0	0	0	0	3	2
	Urban	5	0	0	0	5	0	0	0	0	0	2	3
TOTAL	Rural	23	4	0	3	28	1	0	1	0	4	11	15
	Urban	29	1	0	0	29	1	0	0	0	7	9	14
TOTAL		52	5	0	3	57	2	0	1	0	11	20	29
TOTAL %		87%	8%	0%	5%	95%	3%	0%	2%	0%	18%	33%	48%

Table 4: SMS Messaging

State	Region	Receive SMS from Contacts				Send SMS				Automated Gov SMS				Other Automated SMS			
		Daily	Weekly	Monthly	Never	Daily	Weekly	Monthly	Never	Daily	Weekly	Monthly	Never	Daily	Weekly	Monthly	Never
Karnataka	Rural	0	1	3	1	0	2	1	2	0	1	4	0	0	4	0	1
	Urban	0	1	4	0	0	1	0	4	0	0	5	0	0	0	5	0
Tamil Nadu	Rural	0	0	1	4	0	0	2	3	0	0	0	5	0	0	2	3
	Urban	0	0	1	4	0	0	0	5	0	0	0	5	0	0	4	1
Uttarakhand	Rural	3	2	0	0	1	2	0	2	1	3	0	1	4	1	0	0
	Urban	5	0	0	0	3	0	0	2	0	3	0	2	3	2	0	0
Chhattisgarh	Rural	0	0	0	5	0	0	0	5	0	2	1	2		1	1	3
	Urban	0	0	1	4	0	0	1	4	1	1	2	1	1	1	1	2
Jharkhand	Rural	1	0	0	4	1	1	0	3	0	0	2	3	0	0	1	4
	Urban	0	0	1	4	0	1	1	3	0	0	2	3	0	0	2	3
Odisha	Rural	0	4	0	1	0	4	0	1	0	3	1	1	0	4	0	1
	Urban	0	2	1	2	0	3	1	1	0	1	1	3	0	3	0	2
TOTAL	Rural	4	7	4	15	2	9	3	16	1	9	8	12	4	10	4	12
	Urban	5	3	8	14	3	5	3	19	1	5	10	14	4	6	12	8
TOTAL		9	10	12	29	5	14	6	35	2	14	18	26	8	16	16	20
TOTAL %		15%	17%	20%	48%	8%	23%	10%	58%	3%	23%	30%	43%	13%	27%	27%	33%

Table 5: WhatsApp Use

State	Region	Send / Received WhatsApp Message				Send / Received WhatsApp Video				Update WhatsApp Status			
		Daily	Weekly	Monthly	Never	Daily	Weekly	Monthly	Never	Daily	Weekly	Monthly	Never
Karnataka	Rural	4	0	0	1	4	0	0	1	4	0	0	1
	Urban	3	1	0	1	3	1	0	1	4	0	0	1
Tamil Nadu	Rural	4	0	1	0	3	1	0	1	3	1	0	1
	Urban	5	0	0	0	4	1	0	0	2	0	1	2
Uttarakhand	Rural	5	0	0	0	4	0	0	1	3	1	0	1
	Urban	5	0	0	0	5	0	0	0	4	1	0	0
Chhattisgarh	Rural	2	0	0	3	0	2	0	3	1	0	1	3
	Urban	2	2	0	1	1	2	0	2	0	2	2	1
Jharkhand	Rural	1	0	0	4	1	0	0	4	0	1	0	4
	Urban	2	1	0	2	1	1	0	3	2	1	0	2
Odisha	Rural	5	0	0	0	4	0	1	0	2	2	1	0
	Urban	4	1	0	0	3	2	0	0	1	4	0	0
TOTAL	Rural	21	0	1	8	16	3	1	10	13	5	2	10
	Urban	21	5	0	4	17	7	0	6	13	8	3	6
TOTAL		42	5	1	12	33	10	1	16	26	13	5	16
TOTAL %		70%	8%	2%	20%	55%	17%	2%	27%	43%	22%	8%	27%

Table 6: Mobile Money Applications

State	Region	Mobile Money Usage			
		Daily	Weekly	Monthly	Never
Karnataka	Rural	0	1	2	2
	Urban	0	1	1	3
Tamil Nadu	Rural	1	0	1	3
	Urban	1	2	2	0
Uttarakhand	Rural	1	0	0	4
	Urban	2	2	0	1
Chhattisgarh	Rural	0	0	1	4
	Urban	0	0	2	3
Jharkhand	Rural	0	0	1	4
	Urban	0	0	0	5
Odisha	Rural	0	0	2	3
	Urban	0	0	2	3
TOTAL	Rural	2	1	7	20
	Urban	3	5	7	15
TOTAL		5	6	14	35
TOTAL %		8%	10%	23%	58%

Table 7: Use of OTP and SMS

State	Region	OTP: shopping		SMS: bank balance	
		Yes	No	Yes	No
Karnataka	Rural	3	2	3	2
	Urban	2	3	4	1
Tamil Nadu	Rural	5	0	5	0
	Urban	5	0	5	0
Uttarakhand	Rural	0	5	1	4
	Urban	4	1	5	0
Chhattisgarh	Rural	1	4	3	2
	Urban	3	2	3	2
Jharkhand	Rural	0	5	0	5
	Urban	2	3	3	2
Odisha	Rural	4	1	4	1
	Urban	2	3	2	3
TOTAL	Rural	13	17	16	14
	Urban	18	12	22	8
TOTAL		31	29	38	22
TOTAL %		52%	48%	63%	37%

Table 8: Phone as Entertainment

State	Region	Use phone for entertainment?	
		Yes	No
Karnataka	Rural	3	2
	Urban	3	2
Tamil Nadu	Rural	5	0
	Urban	5	0
Uttarakhand	Rural	3	2
	Urban	2	3
Chhattisgarh	Rural	2	3
	Urban	3	2
Jharkhand	Rural	0	5
	Urban	0	5
Odisha	Rural	3	2
	Urban	5	0
TOTAL	Rural	16	14
	Urban	18	12
TOTAL		34	26
TOTAL %		57%	43%

Table 9: Location of Phone Use

State	Region	Home	Home & Outside
Karnataka	Rural	4	1
	Urban	5	0
Tamil Nadu	Rural	0	5
	Urban	0	5
Uttarakhand	Rural	4	1
	Urban	5	0
Chhattisgarh	Rural	4	1
	Urban	3	2
Jharkhand	Rural	4	1
	Urban	3	2
Odisha	Rural	5	0
	Urban	3	2
TOTAL	Rural	21	9
	Urban	19	11
TOTAL		40	20
TOTAL%		67%	33%

Table 10: Mobile Phone Upskilling

Who Taught Phone Use							
State	Region	Self	Husband	Sibling	Children	Friends / Neighbours	N/A
Karnataka	Rural	1	2	2	0	0	0
	Urban	2	0	2	1	0	0
Tamil Nadu	Rural	3	0	1	1	0	0
	Urban	4	1	0	0	0	0
Uttarakhand	Rural	3	1	0	1	0	0
	Urban	4	0	0	1	0	0
Chhattisgarh	Rural	1	0	1	1	1	1
	Urban	0	1	0	3	0	1
Jharkhand	Rural	3	1	0	0	0	1
	Urban	1	0	0	4	0	0
Odisha	Rural	0	2	0	2	0	1
	Urban	0	2	0	3	0	0
TOTAL	Rural	11	6	4	5	1	3
	Urban	11	4	2	12	0	1
TOTAL		22	10	6	17	1	4
TOTAL %		37%	17%	10%	28%	2%	7%

Table 11: Mobile Phone Support

Who to Ask for Help								
State	Region	Self	Husband	Sibling	Children	Shop	Friends/ Neighbour	N/A
Karnataka	Rural	0	3	0	1	1	0	0
	Urban	0	3	0	1	1	0	0
Tamil Nadu	Rural	0	1	2	1	1	0	0
	Urban	0	4	0	0	0	1	0
Uttarakhand	Rural	1	1	0	1	0	1	1
	Urban	2	0	1	1	0	1	0
Chhattisgarh	Rural	0	1	1	1	0	1	1
	Urban	1	0	0	3	0	0	1
Jharkhand	Rural	1	1	0	2	0	0	1
	Urban	2	0	1	2	0	0	0
Odisha	Rural	0	2	0	2	0	0	1
	Urban	0	1	0	4	0	0	0
TOTAL	Rural	2	9	3	8	2	2	4
	Urban	5	8	2	11	1	2	1
TOTAL		7	17	5	19	3	4	5
TOTAL %		12%	28%	8%	32%	5%	7%	8%

Appendix 2: Questionnaire

About the Respondent:

- Where do you live?
- What do you do for a living?
- What is your level of education?
- What is your level literacy? Tick all that apply:
 - Can't read
 - Can read basic words in local language
 - Can read messages on phone (SMS /whatsapp) in local language
 - Can read newspaper in local language
 - Can read messages on phone (SMS /whatsapp) in English
 - Can read newspaper in English
- What is your Age?
- Are you married / single / divorced /widowed?
- Do you have children?
 - If so, what age and gender are they?
- Do you live in a joint family or single household family?

Mobile Phone Access:

1. Do you use a mobile phone?
2. What kind of mobile phone do you use?
 - [smartphone / basic phone]
3. Do you use somebody else's mobile phone or a shared phone?
 - If so, whose phone?
 - Is the phone always available in the home, or with the person?
4. Do you have your own mobile phone? If yes:
 - Is it a new mobile phone or handed down from somebody?
 - How did you get the mobile phone? Did you buy it or somebody gave it to you?
 - Do you pay for your phone credit or does somebody else pay for it?
5. What kind of phone does your husband have? (basic, smart)
6. What kind of phones do you children have, if any? (basic, smart)
7. Is the phone always charged and ready to use?

Where and When do you use your phone:

8. How often do you use the phone?
 - Every hour
 - A few times a day
 - Once a day
 - Several times a week
 - Once a week
 - Once a month
 - Other: _____
9. Where mostly do you use your phone? In the home? Outside?
10. Are you comfortable using your phone outside the house in the street?
 - If not, why not?
 - Do neighbours or family comment if you use the phone outside the home?

What do you use Mobile Phone for

11. What do you use your phone for? Scale 1-4 [1=Never; 2= Monthly 3=Weekly 4= Daily]
 - Making calls

- Receiving calls
- Receiving automated government information / notification / alert calls
- Receiving automated government information / notification / alert sms
- Receiving automated sms notifying money transfer from schemes
- Receiving sms from contacts
- Sending sms
- Sending /receiving whatsapp message
- Sending /receiving whatsapp video
- Putting whatsapp status
- Watching short videos
- Watching films and tv serials on phone
- Listening to music /watching music video on phone
- Use Roposo/Mitron /other tiktok alternative
- Look up information on internet
- Read news
- Use Facebook
- Use Instagram
- Use mobile money to pay
- Do shopping via apps
- Other_____

12. Who do you speak to on the phone? Scale 1-4 [1=Never; 2= Monthly 3=Weekly 4= Daily]

- Making calls
 - Family
 - Friends / social
 - Official /government (panchayat / sarkaar)
 - Household – electricity /food / health etc
 - Work / Business
 - Other:_____
- Receiving calls
 - Family
 - Friends / social
 - Official /government (panchayat / sarkaar)
 - Automated government /information /notification / alerts calls
 - Household – electricity /food / health etc
 - Work / Business
 - Other:_____

13. Does anyone in your household (father /husband / brother) receive pins /alerts / notifications or other information for you on their phone? Why?

14. Do you use your phone the same way your husband / brother use theirs?

- What is the difference?

15. Is there a difference in how men and women use phones in your family? If so, how?

16. How has having a phone changed your life?

- How does it help in your life?
- What are bad things about having phones in your life?

17. If you don't have a smartphone and don't know how to use it, is it a problem?

- Why is that?
- Does it stop you from doing things? If so, in what way?

18. Has covid-19 pandemic changed your use mobile phone? If so, how?

Use: Finance

19. Do you use mobile money? (Like PhonePe / PayTM)
 - If yes, what do you use mobile money for?
 - If not, why do you not use mobile money?
20. Do you receive SMS with:
 - codes / pin when you pay something?
 - with your bank balance?
21. Do you speak with bank officials over phone?
 - If so, about what? Government schemes, bank account?

Use: Entertainment & Information:

22. Do you use your phone for time pass? What kind of time pass?
23. Do you get information and news on your phone? If so, how?
 - Via Whatsapp messages / videos / phone calls/ sms/ internet?

Use: Education:

24. Do your children use your phone for online classes?
 - If so, how is that working? What is good and what is bad?
25. Do you use your phone for learning new things?
 - If so, how?

Mobile Phone Monitoring and Harassment:

26. Do you have to ask permission before using the phone? If so, who from?
27. Does family get suspicious when you talk on the phone or send messages?
28. Do any of your family member check your phone?
 - If so, what do they check?
 - How often do they check?
 - What do they ask?
29. Do you use your phone in secret? If so, why?
30. Do you experience harassment via the phone –
 - If so, in what form? [random calls / messages / whatsapp / social media/other]
 - If so, from whom?
 - If so, what do you do to avoid it?

Mobile Phone Literacy and Design:

31. Do you know how to use the phone well? Why / why not?
32. Who taught you how to use the phone?
33. Who do you ask when you have a problem with your phone?
34. How do you navigate the phone (e.g. find a number/ play video)?
 - Do you read? Or do you memorise how to do something?
35. Is the phone easy or difficult to use? Why?
36. What tasks do you do yourself and what tasks do you ask for help for?
37. Are you happy with the phone you have or would you like a different one?
 - If so, what kind of phone do you want?

Perceptions:

38. Should young men and young women have the same access to phones?
39. Are there dangers to girls having phones? If so what are they?
40. Can women and men use phones equally well? Why / why not?

Appendix 3: List of Expert Interviewees

Semi-structured interviews were undertaken with 21 key stakeholders who included a mixture of academics, gender, technology and policy experts and practitioners working with low-income women user groups. A list of 14 key stakeholders who provided their explicit consent to be mentioned in the paper, along with their affiliation, is presented below.

1. Academics/Researchers

- i. Dr Sohini Kar, London School of Economics.
- ii. Dr Paro Mishra, IIIT Delhi.
- iii. Dr Anant Kamath, National Institute of Advanced Studies.
- iv. Dr Gayatri Nair, IIIT Delhi.
- v. Dr Savita Bailur, Caribou Digital.
- vi. Geeti Patwal, Independent gender expert.
- vii. Apoorva Bhalla, IIIT Bangalore.

2. Practitioners

- i. Roopali Shinde, Mann Deshi Bank.
- ii. Rupal Kulkarni, Shram Sarathi.
- iii. Kavita Bundelkhandi, Khabar Lahariya.
- iv. Bishakha Datta, Point of View.
- v. Ajaita Shah, Frontier Markets.
- vi. Kuldeep Singh, Haqdarshak.
- vii. Vedant Manore, Haqdarshak.

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