Supplementary Material for: Experiences from a Mobile-based Behaviour Change Campaign on Maternal and Child Nutrition in Rural India

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PREFACE

This document is a supplement to "Experiences from a Mobile-based Behaviour Change Campaign on Maternal and Child Nutrition in Rural India", published in Proceedings of the Tenth International Conference on Information and Communication Technologies and Development (ICTD '19) [Link: Link]. This document should be read in conjunction with the parent paper.

1 BACKGROUND ON HEALTH AND GENDER STATISTICS IN BIHAR AND INDIA

In Section 3 in the parent paper we briefly stated the ranking of India and Bihar in terms of socio- economic indicators. Table 1 gives the figures for the different parameters for Indian and Bihar.

Table 1: Comparision of key Socio-Economic statistics for India and the state of Bihar.

	India	Bihar
Infant Mortality Rate (2016)*	34	38
Maternal Mortality Rate (2014-16)*	130	165
Under 5 Mortality Rate (2015)*	29	37
Gross State Domestic Product^	6th when ranked among states	15th rank among states
Sex Ratio (2011)[#]	943	918
Female Literacy Rate (2011)*	65.46	53.33

Source: * niti.gov.in; ^ wikipedia; [#] census2011.co.in

## 2 IMPLEMENTATION DESIGN

2.1 Content Design

In Section 4.2 in the parent paper we described the different types of content on the platform, the content design strategies, and how the design evolves using the concurrent monitoring processes. Table 2 shows a part of the typical content calendar. The content calendar specifies the content that runs on the top of the IVR on a particular day and timeslot of the week.

2.2 Mobilisation

In Section 4.3 we mention our mobilisation and training strategies with our partner JEEViKA and PCI. In Figure 1 we show the organisational structure of JEEViKA, the placement of the Community Mobilisers (CMs) and other JEEViKA executives in the hierarchy.

Table 2: Part of a typical content calendar

| Time/Day	Monday	Tuesday	...
6.30-7:00am	Open forum/normal UGCs	Open forum/normal UGCs	...
7:00-7:30am	Open forum/normal UGCs	Open forum/normal UGCs	...
7.30-8:00am	Local News Headlines	Local News Headlines	...
8:00-9:00am	Open forum/normal UGCs	Open forum/normal UGCs	...
9:00-10:00am	Open forum/normal UGCs	Open forum/normal UGCs	...
10:00-11:00am	Did you know ORS 1	Did you know ORS 1	...
11:00am-12:00pm	JKR	JKR	...
12:00-1:00pm	FP episodes	FP episodes	...
1:00-2:00pm	Did you know ORS 2	Did you know ORS 2	...
2:00-2:30pm	Local News Headlines	Local News Headlines	...
2:30-4:00pm	Did you know ORS 3	Did you know ORS 3	...
...	...	...	...
Did you know ORS	Infotainment on Diarrhoea control		
JKR	Janta Ka Report: Citizen Reporter programme on a weekly topic		
FP	Family Planning		
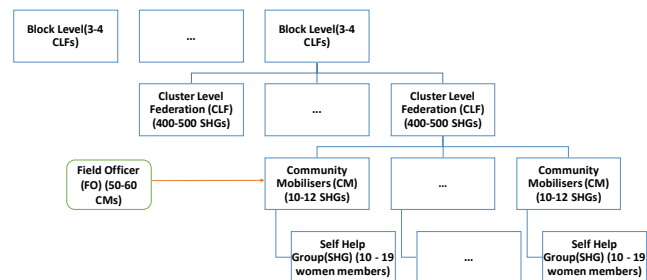
Figure 1: Organisational structure of the State-level Livelihood Society (SLS) within a block. At the village level, 10-20 women form an SHG. To form an SHG, vulnerable communities which require livelihood and other opportunities are given priority. 10-12 SHGs in a village are organised under a Community Mobiliser (CM). 400-500 SHGs form a Cluster-level Federation (CLF) within a block. Each block may have 3-4 CLFs and around 150 CMs. SHGs are assigned to CMs from the same village. The CMs train the SHG members on various activities and, as part of their regular job description, they keep track of financial bookkeeping for the SHG savings and loans. Our organisation has deputed 12 Field Officers (FOs) in the field each handling 50-60 CMs for this intervention.

3 IMPROVISATIONS AND OBSERVATIONS

3.1 Diversification of Content

In Section 5.1 in the parent paper we show that owing to diversification of content, usage of the platform by both male and female users has gone up, but not at the cost of consumption of the core content. In addition, in Figure 2 we observe that the listenership of the core content in absolute minutes per caller has gone up by more than a minute in Q4 compared to Q3, which is a significant increase of 18.5%.
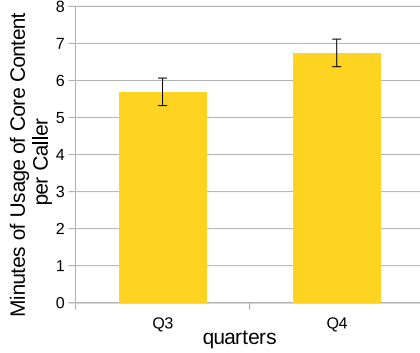
Figure 2: Listenership of core content in terms of absolute minutes of usage (MoUs) per caller in Quarters 3 and 4. The MoUs per caller for core content is comparable in both the quarters.

3.2 Technology Adoption Processes

In Section 5.2 in the parent paper we describe how through sustained training sessions and handholding the engagement with the users improved over time. In the same vein, Table 3 shows the results of the regression analysis for the number of calls made by the CMs in Quarter 4. We observe a strong dependence of the calls made by the CMs in Q4 to the number of trainings attended by the CM in Q4 ($p = 0.013$) which points to the utility of the trainings in persuading the CMs to use the IVR platform.

| Outcome variable: Q4 CM calls	coeff	S.E.	p-value	Exp(coeff)
Q4 CM trainings	0.268	0.107	0.013	1.307
Q3 CM training	-0.112	0.053	0.037	0.894
Q3 CM calls	0.013	0.003	0.000	1.013
Q4 CM rating	0.043	0.046	0.357	1.044
age of CM	-0.03	0.02	0.133	0.971
experience of CM in SLS	0.199	0.076	0.009	1.221
CM Educational qualification	-0.503	0.361	0.164	0.605

Table 3: Results from regression analysis for the number of calls by CMs in Q4.

Figure 3 shows that as a result of continual encouragement for women to bring their phones to the SHG meetings, over a year the median percentage of women bringing phones to the SHG meetings went up from 40% in Q1 to 60% in Q4.
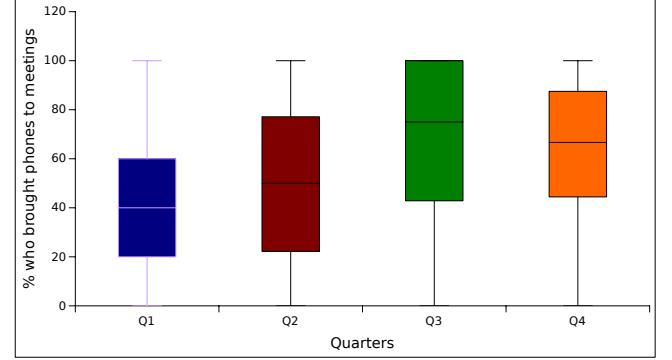
Figure 3: Quarterly average attendees who bring phones to the SHG meetings.

In further substantiation, Figure 4 shows the CCDF for the number of contributions made per call by trained and untrained users. We can observe that the trained users make more number of contributions even though the instructions to make contributions are the same on the IVR for both trained and untrained users. This shows that having offline training is important to increase participation of the users on the platform.
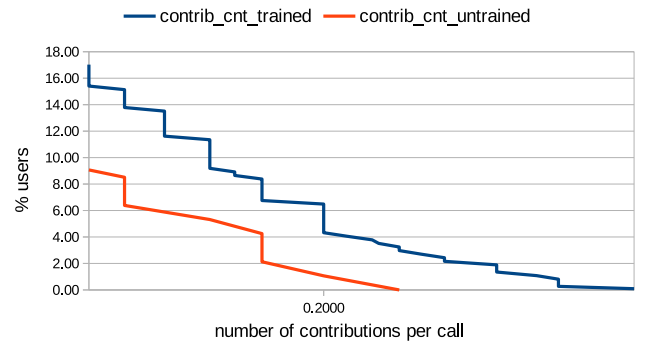
Figure 4: CCDF for number of 'contribution' actions per call for trained and untrained users.

3.3 Concurrent Monitoring of Programme Inputs, Outputs, and Outcomes

3.3.1 Inputs. Table 4 shows the results for the regression analysis on the number of calls made by the SHG members in Q4. We observe that the number of calls made by the linked-SHG members is strongly dependent on the rating computed for the CM ($p = 0.001$), which is a validation for the robustness of the rating given by the field staff.

Outcome variable: Q4 SHG member calls	coeff	S.E.	p-value	Exp(coeff)
Q4 CM rating	0.16	0.049	0.001	1.173
age of CM	0.03	0.022	0.166	1.03
experience of CM in SLS	0.053	0.109	0.625	1.055
CM educational qualification	0.443	0.43	0.303	1.557

Table 4: Results from regression analysis for the number of calls by SHG members in Q4.

3.3.2 Outputs. JEEViKA Mobile Vaani has also been able to collect several testimonies of impact through UGCs. In Section 5.3 in the parent paper we list some impact stories. In Table 5 we list a representative sample of a few more impact stories.

## 3.4 Mobilisation Pathways to Reach Female Users

In Section 5.4 in the parent paper we outline the primary differences in the methods and the outcomes in the two mobilisation pathways followed in the intervention: the SHG arm and the non-SHG arm. Figure 5 shows the skip-rates for different themes of content by the non-SHG users. We observe that the skip rates for content for themes related to maternal and child health and nutrition is high in the non-SHG arm compared to the SHG arm (Figure 8 in the parent paper). Skip rates for Maternal Dietary Diversity and ORS and Diarrhoea Management, for example, is greater than 35% in the non-SHG arm compared to 15% in the SHG arm.
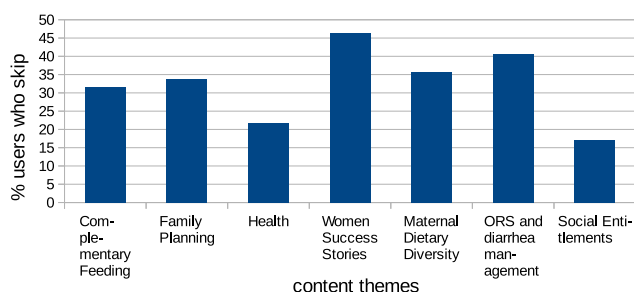
Figure 5: Percentage of users who skip content relevant for women in the non-SHG arm

Figure 6 shows a comparision of the age of the users of the platform in the SHG arm and age of the SHG members. We observe that the users of the platform are much younger than the median age of the members of the SHGs.

Figure 7 compares the income sources of the users of SHG arm (JMV) and the non-SHG arm of the intervention. This data was collected using the demographic surveys on the platform. The SHG members have a more agricultural or livestock based income, while the users of the non-SHG arm have a labour or service-oriented
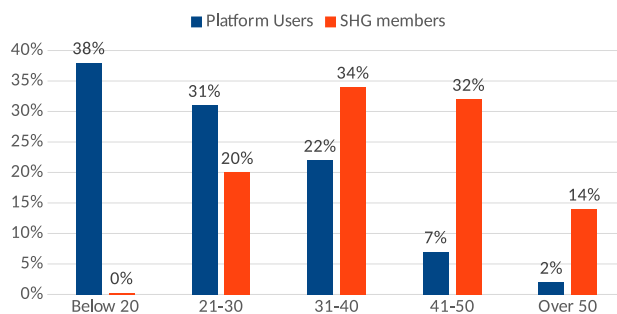
Figure 6: Comparison of age of SHG members who use the platform and SHG members who do not user the platform.

source of income. Therefore, the two mobilisation arms are able to reach different categories of demography.
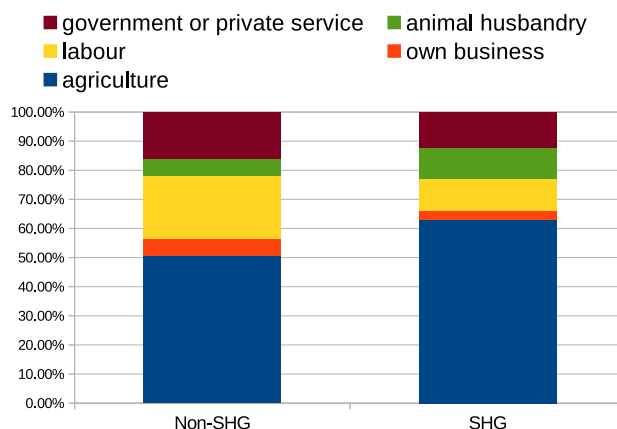
Figure 7: Comparison of source of income of users in the SHG and non-SHG arms

Table 5: Representative sample of impact stories

Female user: Earlier in cases of diarrhoea we used to give salt and sugar solution, but now with awareness programmes on ORS, many women are slowly adopting ORS solution.
An SHG member: I am a regular listener of the platform and listen to local updates, last month there was a news on a bus accident. My son was travelling to the same place on that day and so I was scared listening to this news. The news said that several passengers were trapped inside the bus and there is a risk of the bus catching fire. I immediately reached the spot and found my son trapped inside. Luckily, with the help of the government officials, we were able to get my son and the other passengers out.
Male user: My father is enrolled to receive social assistance pension from the government, but he was not receiving the due amount for the last two years. Now, after the people at Jeevika Mobile Vaani intervened the pension amount has been credited to his account
Female user: I listen to the information on agriculture and livestock on Jeevika Mobile Vaani. I applied the suggestions from Jeevika Mobile Vaani in my mushroom cultivation and have been able to improve the yield and my profits
Female user: The *Guru Mantra* (teachers' advice) programme is very helpful for students and has inspired me to educate my children
Male user: I listen to Mobile Vaani regularly. I want to thank Mobile Vaani for running news about the latest happenings in our district. We were not able to otherwise get any news about the recent religious riots. This is a wonderful initiative by Mobile Vaani of keeping us informed and not letting rumours spread hatred between communities or let communalism play with our emotions. This will help unite our society against communalism.