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Research Paper

Analysing the scalability and Replicability of Project Digital Sakhi of Churu District

Saksham Goel

This paper attempts to analyse the replicability of Project Digital Sakhi of Churu district at the National Level. This includes an estimation of costs, logistics and state-wise analyses of needs, costs and benefits. The paper shall begin with a quick background of the Project followed by the assumptions made in the paper. Then the paper deals with the method and cost distribution of scaling up the project, including convergence schemes, self-funding mechanisms and cross-subsidisation.

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I. Background of the Project

The project began in the aftermath of COVID-19 crisis which saw the Women-constituted SHG rising up to the challenge. It was during this period that the need for the digital literacy of women SHGs was felt. PMGDISHA was taken as the ideational inspiration and Project Digital Sakhi was launched in Churu in 2021.

The basic idea of the project was based on the following facts:

a. The ICT labs in the government schools were under-utilised due to their usage being limited to only school hours. Additionally, the computers were underutilised during the school hours for fear of damage as well as due to actual damage.

b. The digital illiteracy was a constraining factor in the functioning of SHG members, their access to information and governmental schemes and their ability to use government applications.

c. Providing digital literacy to SHG members has multiplier effect through familial spread of ICT skills and positive externality of women empowerment.

Thus, based on these facts, following interventions were made:

a. The ICT labs were utilised in post-school hours for Adult Digital literacy camps, in which locally crafted basic ICT curriculum was taught by a pool of voluntary teachers sourced from volunteering teachers, Yuva Sambal interns and Digital Sakhis themselves.

b. A dedicated portal was created to monitor the infrastructure, volunteers, beneficiaries in a disaggregated fashion, besides providing various e-resources. The registration of SHG women and the volunteers was done through a easy registration form on the portal which helped customise to the locational and time needs of the SHG women. Beneficiaries could download the e-certification after the completion of the course through OTP. Thus, the certification also served as an authentication mechanism for digital literacy.

c. The repair of computers was made the norm so as to combat the twin challenge of underutilisation due to fear of damage and actual damage to the computers.

d. A refresher course was provided to consolidate the progress made by the Project.

e. For the illiterate SHG women, volunteering students was enlisted to teach. The concept of "Each one Teach One" was used for maximum impact and focussed teaching.

The Project impacted two core groups of beneficiaries:

a. 34,000 SHG women attained digital literacy, 10,000 started making digital payments, 4,500 were provided ATMs. They started paying bills online, getting e-Shram cards, getting Udyam Aadhar Cards, getting basic information online like food recipes and nearby locations , sharing documents, accessing government apps, and some even started doubling up as Bank Sakhis. The access to computers to rural areas increased by a staggering 250%.

b. The schools had their ICT resources optimally and efficiently used by post-school hours usage. The repairment of computers ensured the fuller utilisation of computers during school hours. The osmosis of ICT skills within families began and the PTMs in schools started to get regular.

Assumptions made in the paper

The paper makes the following assumptions:

a. The government schools and government-aided schools with a functioning ICT lab can be utilised post-school hours for Digital Literacy Camps.
b. On an average, the number of computers in each lab is in the range of 10-20
c. On an average, a school has 180 working days.
d. On an average, an additional ICT lab costs Rs. 3,00,000/- to build in an existing school.
e. On an average, it costs Rs. 20,000/- to provide an ICT lab with broadband connectivity.
f. The repairment costs of computers can be borne by the schools with functioning ICT labs.
g. In the first phase, 30% of the women in SHGs under NRLM will be covered. From experience from Project Digital Sakhi, it was realised that if around 20% of the members attain digital literacy, 50-60% of the rest attain it through them in an informal fashion. After the first phase, given the establishment of the infrastructure required, the training of the rest can be done at near zero marginal cost in the next 2-3 years.
h. The fund of the said project would be national, thereby facilitating cross-subsidising regions.

Analysing The Replicability And Scalability Of The Project At The National Level

Sources of data (refer the Table at the end of the paper)

a. The state-wise data of number of SHGs under NRLM and number of members from NRLM[1] data base.
b. The state-wise data of number of government schools and government-aided schools, those with ICT labs and those with functioning ICT labs for pedagogical uses from UDISE+ 2021-22 Statistics (Ministry of Education)[2].

Proposed methodology of scaling up at National Level

a. Digital Infrastructure:

i. The existing functional ICT labs (for pedagogical purposes) in government and government-aided schools will be utilised post school hours
ii. The existing non-functional ICT labs (for pedagogical purposes) in government and government-aided schools will be repaired and utilised post school hours.
iii. Additional ICT labs will be provided in areas where required.

b. Dedicated Unified National Portal

i. For targeting approx.. 30% of members of each SHG under NRLM and coordinating their time and locational needs through a simple registration form.
ii. For monitoring and coordination of the project at state, district, block and village level and
iii. For providing e-resources for helping local authorities tweak the standard template of curriculum according to local needs and requirements.

Funding mechanism (refer Annexure 1 for the relevant data):

In terms of digital infrastructure, the states can be divided into three categories:

a. 17 States and UTs in which the existing computer labs and sufficient or almost suffieint to serve at least 30% of the total SHG members in those states: Rajasthan, Haryana, Himachal Pradesh, Jammu and Kashmir,

[1] https://nrlm.gov.in/shgOuterReports.do?methodName=showShgreport, Accessed 16.07.2023
[2] Government of India (Department of School Education and Literacy, Ministry of Education), "Report on Unified District Information System for Education Plus (UDISE+) 2021-22 Flash Statistic", pp. 185-186

Punjab, Arunachal Pradesh, Manipur, Mizoram, Sikkim, Andaman and Nicobar Islands, Goa, Ladakh, Lakshadweep, Dadra Nagar Haveli and Daman and Diu and Uttarakhand.

b. 17 States and UTs which need substantial funding to create the minimally required infrastructure: Nagaland, Gujarat, Tamil Nadu, Tripura, Kerala, Meghalaya, Maharashtra, Chhattisgarh, Assam, Jharkhand, Odisha, Telangana, Madhya Pradesh, Uttar Pradesh, West Bengal, Andhra Pradesh and Bihar.

Assuming that the existing and repaired ICT labs are utilised, the costs required in the second category are:

$$Cost\ of\ new\ ICTinternet\ per\ SHG\ beneficiary^{3} = \frac{\frac{(\mathbf{0.3} * \boldsymbol{m_{SHG}}) - (\boldsymbol{n_{BPS}} * \boldsymbol{n_{ICT}})}{\boldsymbol{n_{BPS}}} * \boldsymbol{cost_{ICT+BB}}}{\mathbf{0.3} * \boldsymbol{m_{SHG}}}$$

States	Additional no. of ICT labs required to target incremental 30% per SHG	cost of Addl labs and internet connectivity (in lakhs)	Cost of new digital infra per SHG beneficiary
NAGALAND	70	223	620
GUJARAT	130	416	52
TAMIL NADU	224	716	66
TRIPURA	271	869	692
KERALA	278	890	84
MEGHALAYA	334	1069	834
MAHARASHTRA	444	1422	80
CHHATTISGARH	2885	9232	1110
ASSAM	3106	9940	880
JHARKHAND	4129	13212	1379
ODISHA	4532	14503	887
TELANGANA	5131	16418	1168
MADHYA PRADESH	8171	26148	1679
UTTAR PRADESH	9901	31684	1420
WEST BENGAL	10696	34227	1039
ANDHRA PRADESH	13898	44475	1660
BIHAR	19450	62240	1700
Total	**83656**	**267698**	

Thus, the amount varies from 52 to 1700 and the total amount required is close to Rs. 2677 crores.

There can be multiple ways of funding the Project:

a. The entire amount of Rs. 2676.98 crore can be funded by the government through a dedicated fund.

b. This funding can be sources from the following:

i. From the beneficiaries: At a national level, the number of beneficiaries shall be approximately, 2.7 crores over 83.5 lakh SHGs. A straight Rs. 500/- fees for each SHG per year takes care of 16% of the total requirement per year. Over 3 years, i.e. the tenure of the saturation, 50% of the amount can be sourced from the beneficiaries at a minimal cost. Additionally, this subscription ensures attendance of beneficiaries and continuation of saturation by creating stakeholders.

ii. The remaining amount can be matched from a pool of sources i.e. education department, NRLM, PMGDISHA, and so on, apart from a state government's dedicated fund for the project. Over the coming next years, even this amount can be recovered from the fees

The Project converges digital literacy movement in schools with women empowerment through a cost-effective and simple intervention which ends up creating new digital infrastructure with externalities spread over schools, SHGs, community and economy. Given this, the project is scalable and replicable at National level.

[3] m_{SHG}: number of members in SHGs in the state
n_{BPS}: number of beneficiaries per school i.e. 180
n_{ICT}: number of ICT labs in government and government-aided schools in the state
$cost_{ICT+BB}$: cost of installing a computer lab and internet connectivity i.e. 3,20,000/-

S. No.	State/ UT	SHG under NRLM	Number of SHG Women	Number of Government / government-aided schools with upper primary, secondary and higher secondary sections	ICT Labs	Functioning ICT labs	Number of women trainable by existing ICT labs	Number of women who can be trained by repairing the non-functioning labs	Number of women who can trained by existing and repairing labs	% of SHG members trained by existing and functionable labs	Additional number of ICT labs required to target the ideal increment al 30% in every SHG	cost of additional labs and internet connectivity (in lakhs)	Cost of new digital infra per SHG beneficiary
1	RAJASTHAN	260018	2860730	35167	11370	9180	1652400	394200	2046600	72	0	0	0
2	HARYANA	57540	589247	5901	2853	2255	405900	107640	513540	87	0	0	0
3	HIMACHAL PRADESH	42222	337290	4817	2192	2122	381960	12600	394560	117	0	0	0
4	JAMMU AND KASHMIR	80807	642172	10200	2544	2196	395280	62640	457920	71	0	0	0
5	PUNJAB	40314	404026	6829	6441	6182	1112760	46620	1159380	287	0	0	0
6	ARUNACHAL PRADESH	8215	64683	1368	146	110	19800	6480	26280	41	0	0	0
7	MANIPUR	7777	80345	1163	346	312	56160	6120	62280	78	0	0	0
8	MIZORAM	9432	74351	1516	135	80	14400	9900	24300	33	0	0	0
9	SIKKIM	5576	51444	402	236	221	39780	2700	42480	83	0	0	0
10	ANDAMAN & NICOBAR	1180	11572	159	124	121	21780	540	22320	193	0	0	0
11	GOA	3640	46906	576	315	298	53640	3060	56700	121	0	0	0
12	LADAKH	497	3870	511	148	132	23760	2880	26640	688	0	0	0
13	LAKSHADWEEP	328	3741	22	15	15	2700	0	2700	72	0	0	0
14	PUDUCHERRY	4325	54319	219	192	176	31680	2880	34560	64	0	0	0
15	DNHDD	914	9510	229	96	94	16920	360	17280	182	0	0	0
16	UTTARAKHAND	54733	407546	5581	679	589	106020	16200	122220	30	0	1	0
17	KARNATAKA	256949	3029587	35549	5045	2269	408420	499680	908100	30	4	14	620
18	NAGALAND	13985	119799	928	130	101	18180	5220	23400	20	70	223	52
19	GUJARAT	270337	2677250	27744	4332	3028	545040	234720	779760	29	130	416	66
20	TAMIL NADU	318866	3623236	16685	5815	5815	1046700	0	1046700	29	224	716	692
21	TRIPURA	46620	418467	2168	426	377	67860	8820	76680	18	271	869	84
22	KERALA	253878	3516586	6226	5583	5285	951300	53640	1004940	29	278	890	834
23	MEGHALAYA	44067	427195	4027	378	291	52380	15660	68040	16	334	1069	80
24	MAHARASHTRA	598136	5953997	43459	9479	7481	1346580	359640	1706220	29	444	1422	1110
25	CHHATTISGARH	258285	2772027	18268	1735	985	177300	135000	312300	11	2885	9232	880
26	ASSAM	337294	3766925	14383	3172	2290	412200	158760	570960	15	3106	9940	1379
27	JHARKHAND	272128	3194176	15201	1195	1131	203580	11520	215100	7	4129	13212	887
28	ODISHA	529444	5447592	27441	4547	3149	566820	251640	818460	15	4532	14503	1168
29	TELANGANA	439572	4686363	10643	2680	942	169560	312840	482400	10	5131	16418	1679
30	MADHYA PRADESH	438885	5192014	34609	482	319	57420	29340	86760	2	8171	26148	1420
31	UTTAR PRADESH	715296	7436000	57173	2492	1381	248580	199980	448560	6	9901	31684	1039
32	WEST BENGAL	1068805	10980036	16322	7604	7147	1286460	82260	1368720	12	10696	34227	1660
33	ANDHRA PRADESH	853124	8929376	12010	984	578	104040	73080	177120	2	13898	44475	1700
34	BIHAR	1054931	12200928	35737	885	328	59040	100260	159300	1	19450	62240	620
	Grand Total	8348120	90013306	453233	84796	66980	12056400	3206880	15263280		83656	267698	