**Engaged Citizens Responsive City** is a four-year long intervention supported by the European Union which focuses on strengthening civil society of the urban poor to participate in planning and monitoring of sanitation services.

The project works across 3 cities in India (Ajmer in Rajasthan, Jhansi in Uttar Pradesh, and Muzaffarpur in Bihar).

It primarily engages the urban poor through capacity building activities which enable them to become active citizens, and to use new skills learnt to participate in planning (at city level) and monitoring (at the ward level) of sanitation services.

Partners in this change include urban poor and middle-class residents, with leadership of young women and men; mayors, elected councillors and related government departments; traders and market associations; civil society, academia and media; and women sanitation workers.

A critical aspect of enabling the participation of the poor is empowering them with data about their settlements. For this, a set of surveys were undertaken. This survey manual has been prepared to introduce the census survey and related processes. Under the project PRIA is carrying out surveys in all households of informal settlements in the cities of Ajmer, Jhansi and Muzaffarpur.

These surveys are administered on android mobile phones using a software called CommCare, which is supported by Dimagi.

The manual will help reader to understand all the steps involved in the process. It focusses on (i) Downloading survey data, (ii) Using the analysis tables and graphs for a particular slum, (iii) Points to note for analysis, (iv) Working with charts, (v) Making Changes to data, (vi) Compiling data, Verification and correction, (vii) General Checklist, and (viii) Additional analysis for Household Toilets.
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### Section 1: Mobile Application (App) for Household Survey

**Guidelines to download the Commcare mobile app**

1. In your android based mobile or tablet, find the Google “Play Store” icon and click on it.

2. Enter “commcare” in the area highlighted in red colour.
3. Click the first option marked in red colour, and then click on Install. Follow the instructions on the screen and wait for the application to install.

4. Open the application from the app drawer. You will see a screen with the message ‘enter code’. The code will be provided to you separately and is dependent on the application version.

5. Once you have entered the code, please click on accept. After that, click on ‘Start Install’ to begin installing the application.
6. Let the app install completely. **Ensure that the box “Keep trying if connection is interrupted” is checked.** This prevents any internet related issues from avertting the installation.
## Guidelines to fill survey through CommCare mobile app

1. Begin by logging into the application.
2. Enter the Username and Password specified to you by your supervisor.
3. Note that the Username and Password can have letters as well as numbers. They are also case sensitive.

4. After logging in, you will see the main screen.
5. Click on “Start” to begin filling information for any new respondent.
6. Click on “Saved” to view information filled previously for any respondent.
7. Click on “Incomplete” to view incomplete information filled for any previous respondent.
8. Click on “Sync with Server” to send any forms which have not been automatically synced with the server. If some forms have not been synced, the number will be mentioned in the icon.
9. When registering a new respondent, if an error message stating “could not find an lookup table” appears, then click on “Sync with Server” to resolve the issue.
10. Click on “Log out of CommCare” to log out at the end of the day after completing the surveys.
11. Click on ‘Start’ to begin the survey. After clicking on ‘Start’, you will come across the two “modules” in the survey.

12. For any new respondent, please click on the first module “परिवार पंजीकरण” to register the details of the respondent.

13. On clicking the module “परिवार पंजीकरण”, the following form “1 – पंजीकरण फॉर्म” will appear.

14. Click on this form to register the new respondent.
15. Inside the form, you will need to answer different types of questions.
16. To move from one page to the next, swipe from right to left. (or use the arrow buttons)
17. If you need to change the answer to a previous question or simply refer to a question answered earlier, swipe from left to right.

18. When the last question of the form is answered, the bar on the top of the screen will turn from blue to green.
19. Click on the green “Finish” button to complete the form and save it.
20. Once registered, you will be redirected to the screen listing the modules.
21. Click on the second module "सर्वैं की अन्य जानकारी" to fill in other details for the respondent.

22. You will be directed to a list of all respondents registered on your device.
23. The respondent registered most recently will appear at the top.
24. The three fields visible are “जवाबकर्ता का नाम”, “वार्ड क्र” and “शहर का नाम”.
25. Click on the relevant name and proceed ahead.
26. On clicking a name from the respondent list, you will be shown more details of the respondent filled. Make sure you are selecting the right respondent.

27. The additional details include address details like “मकान का नंबर” and “बस्ती का कोड”.

28. Click on the “Continue” tab at the top to proceed.

29. You will be able to see a list of forms to be filled.

30. Fill the forms in the numeric order. Hence, start with the form “2 - परिवार की मूल जानकारी” and then proceed to form 3, 4 and 5.

31. After you fill a form and save it, that form will not appear on the screen any more for this respondent.
32. The last form to be filled should be “5 – सर्व समाप्त”.
33. After filling this form, you will be directed to the list of modules where you can register a new respondent.
### Updating the app

1. If your supervisor informs you that a new version of the app has been launched, then go back to the main screen.
2. Click on the “Settings” button either on the bottom left corner or the top right corner of the mobile.
3. In the list, select the first option “Update App”.

![Update App](image1)

4. Commcare will now start to download the new updates to the app from the server.

![Download Progress](image2)
5. Click on the green tab to install the latest updates to the app.
6. After this step, you will be logged out of Commcare. You will then need to enter your password to log in again.

7. To verify if the latest update of the app is being used, go to the main screen.
8. Click on the “Settings” button either on the bottom left corner or the top right corner of the mobile.
9. Then click on ‘About CommCare’.
10. You will see the App version number mentioned in the details.
11. For example, in this case, it is “App v89”, meaning version number 89 is being used.
12. Verify if this is the latest version of the app launched with the supervisor.
Logical flow of survey
### Important validations used in the app

<table>
<thead>
<tr>
<th>Validation</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Only ten digit mobile numbers are accepted.</td>
<td><img src="image1.png" alt="Mobile number validation" /></td>
</tr>
<tr>
<td>2. If either less than or greater than ten digits is entered, an error message is raised and one cannot proceed with the survey.</td>
<td></td>
</tr>
<tr>
<td>1. In the question where the name of the respondent has to be entered, only text characters (A-Z, a-z and space) can be entered.</td>
<td><img src="image2.png" alt="Name entry validation" /></td>
</tr>
<tr>
<td>2. If any numbers are entered, an error message is raised and one cannot proceed with the survey.</td>
<td><img src="image3.png" alt="Incorrect number entry" /></td>
</tr>
</tbody>
</table>
1. In the question where the age of the respondent is asked, only an age between 0 and 125 years is accepted.
2. If an age like 130 is entered, an error message is raised and one cannot proceed with the survey.

1. In the question where the number of years and months of stay is asked, it should be ensured that the number of months entered is less than or equal to 12.
2. If the answer is entered as 14 months, an error message is raised and one cannot proceed with the survey.
1. When the number of family members is entered along with the breakup of male-female members, ensure that the male and female members add up to the total members.
2. If there is a mismatch, then an error message is raised and one cannot proceed with the survey.
SECTION 2: Monitoring and Analysis of Household Survey

Downloading survey data

1. The Excel file for the city is available in the OneDrive folder of respective city. Survey administrator can access it either through his/her computer’s browser or by syncing the OneDrive folder to computer. It is available in Common tools and files for survey → HH Census Survey → City Name.

2. This file is the analysis template. Save it as a copy with the name of the slum or settlement with which you are currently working. Do add a date to keep track. For example, LoharBasti_10th June. It is advisable to create a separate folder in OneDrive for each settlement that is surveyed. The local copy you have created (along with other relevant documents) can be placed here for easy access and sharing.
3. Navigate to the first sheet titled Form 1. Go to the “Data” tab on the top of the page. Click on “Refresh all” as marked below. This will update the file with the latest survey data from the CommCare website. Keep in mind that this process can take a few minutes. Excel often displays a ‘not responding’ message while this is happening, but it is nothing to worry about, and your system will begin to function normally once the data has been downloaded.

4. Next, go to the “Index” sheet and click on the tab “Filter for Ajmer (or other city name) data” at the bottom of the page. This will filter all the data in the data sheets for respective city.
Using the analysis tables and graphs for a particular slum

1) In the "Data" tab, click on "Connections".

2) Select the first row "Connection" and then using the shift button on your keyboard; select all the connections that are displayed. After that, click on remove.
3) This process delinks the file from the Commcare server. Doing this ensures that data is not refreshed automatically. By breaking connections, you are removing any link between this file and Commcare. Keep in mind, you are doing this for the local copy you earlier created, and not for the analysis template itself.

4) Now, if you try to click on "Refresh All", it will only update the pivot tables and charts but not fetch data from CommCare.
5) The local copy has data for all the slums surveyed until now, across all cities. As of now, a filter has been at the back end, which restricts data download to dates after 1st January 2017. This has helped in reducing the size of the file. The first step thus is to remove all data that does not pertain to the slum in question. The easiest way to do this is to filter sheets using the Column titled ‘Name_of_slum_colony’. A corresponding column is “Name_of_slum_colony_mohalla_society”. This column displays a unique code for each slum. In rare cases, some surveys may display the code, but not the name. Ensure that all entries have the slum name in place else manually copy the slum name and paste it where required.

6) Select the slum name apart from the one you want to retain and delete all the entries using Excel’s delete rows function. Do not delete the first row since it is connected to the pivots, tables and charts. This step needs to be repeated for all sheets. Once you are done, remove the data filters.
Points to note for analysis

1. It is important to check if there are an equal number of entries across all data sheets, except the “Member level details” sheet. (The “Member level details” has more entries because the information has been collected for all members of the Households.) This can be checked in the “Form check” sheet. In the column Z named “No of forms filled”, if the count is showing as 3, and if in column AA, named “Whether complete”, the status is showing as “Yes”, then the survey is complete for that respondent.

If not, try to understand why. One possible reason could be that some survey participants opted out of the survey. It is also possible that enumerators left some surveys incomplete, in which case they can be instructed to return to the households and complete the surveys. Other reasons include errors in slum naming, which will require probing. Always check the survey tracker to double check that the number of households interviewed match with the entries listed. Once you are done, go to each individual analysis sheet titled as 1 – Analysis, 2 – Analysis, 3 – Analysis, and 4 – Analysis; click on any pivot table and then under analyse, click on ‘refresh all’. You will see updated charts under the sheet titled ‘charts’.

2. It is also important to ensure that surveys are genuine. Two easy ways have been identified.

   One is to check the time of the survey, and the other is to check duration. Any anomalies must be discussed with enumerators and verified.

3. Columns Z, AA and AB are the columns, which will signal if any protocol has been violated.

   - Column Z gives the beginning time of the survey. If the survey began before 7 AM or after 8 PM, then the colour red would show up, else it will be green.
- Column AA gives the ending time of the survey. If the survey ended before 7 AM or after 8 PM, then the colour red would show up, else it will be green.

- Column AB gives the completion time of the survey. If the survey took less than 5 minutes or more than 15 minutes, then the colour red would show up, else it will be green.

**Working with charts**

1. In many charts, you will find that certain columns are irrelevant since they have ‘0’ entries listed under them. To switch these off, click on the chart, and then on the filter setting and untick. Refer image below. In this case, since there are no entries under अन्य, it can be switched off.

![Chart Image](chart1.png)

2. Text in blue boxes needs to be manually entered. Most of the data is available in charts, however, some data, like the number of families without bank accounts, number of children less than 9 years of age without Birth Certificate, number of members using toilets needs to be calculated. This is done at the back end for you. You will find the calculation in the sheet 3-Analysis, row 125 – other parameters, and some of it in sheet 4.

![Chart Image](chart2.png)
Making Changes to data

1. All corrections will be made to the local level file itself.

2. Once data has been verified, please refer to the code sheet and make changes in the file. You may replace the original entry but do highlight it so that it is easier to place at a later stage.

3. When you are sure about the authenticity of data, you can replace all the formulas in forms 1 – 5 with values. This helps reduce the size of the file significantly. The easiest way to do this is to select entries in the form using the select all shortcut: Ctrl + A. Copy all entries using Ctrl + C. Finally, paste using Ctrl + Alt + V, and then select values. You can also do this using the paste button in the toolbar, and selecting values. Replicate this for all forms.
Compiling data

1. The survey manager will handle data compilation. Compilation will entail reverification of all files and then subsequently adding their entries to one data file.
2. This file will operate in a slightly different manner that will allow you to utilise slicers to display slum specific data, as and when required.
3. The first step is thus to filter data for the slum / informal settlement you currently want to work with. For this, go to the “1-Analysis” sheet. In the slicer “Name_of_slum_colony_mohalla_society”, select the slum being analysed, like “aj_s1” or “aj_s20”. These correspond to the numbers allotted to each slum for the survey.
4. Now, repeat this process for the other analysis sheets named “2-Analysis”, “3-Analysis” and “4-Analysis” where the slicer is named “Name_of_slum_colony”. Please note that in these sheets, in addition to the slum number, even the slum name may need to be selected in the slicer. For doing this, the “Multi-Select” option needs to be selected, as marked below.
## Verification and correction

<table>
<thead>
<tr>
<th>Form 1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Check spelling of respondent / Head of the Family, and Surname.</td>
<td></td>
</tr>
<tr>
<td>- Check address of house and format for entry</td>
<td></td>
</tr>
<tr>
<td>- Check slum name and slum code</td>
<td></td>
</tr>
<tr>
<td>- Check date of survey</td>
<td></td>
</tr>
<tr>
<td>- Check for non-participants, and whether these houses can be visited again</td>
<td></td>
</tr>
<tr>
<td>- Check for total number of houses and corresponding number of surveys. Since house numbering has been conducted, check to see if all addresses are a part of the survey</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Form 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Check type of house</td>
<td></td>
</tr>
<tr>
<td>- Depending on notification status of slum, check responses received for land ownership (patta). Ensure that responses are in line with others received in the settlement.</td>
<td></td>
</tr>
<tr>
<td>- Check religion and caste</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Form 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Check for total number of members in house. Remember that we are using Chulla method. It is possible (in instances where the count is 15 or above) that two houses may have been combined</td>
<td></td>
</tr>
<tr>
<td>- Check for spellings of family members</td>
<td></td>
</tr>
<tr>
<td>- Ensure that age is written in complete years. In case of children less than 1 years of age, enumerators are to write 0.</td>
<td></td>
</tr>
<tr>
<td>- Check to see if the age of members matches with education and occupation profile. Use appropriate filters to check this.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Form 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Check for type of toilet</td>
<td></td>
</tr>
<tr>
<td>- Check to see if outlets of Bathroom, Kitchen, and Toilet match. If not, probe to understand why. Also check if certain responses stand out from those that are general to that slum.</td>
<td></td>
</tr>
<tr>
<td>- Check for facility of garbage collection and if it matches with facilities available in the settlement</td>
<td></td>
</tr>
<tr>
<td>- Check similarly for drinking water sources</td>
<td></td>
</tr>
<tr>
<td>- Check if source of drinking water matches other water sources. If not, probe to understand why</td>
<td></td>
</tr>
</tbody>
</table>
Form 5  - Check if mobile numbers have been entered.

Form check  - This is elaborated above. Make sure there are no incomplete surveys and ensure that surveys are completed in adequate time (neither too fast nor too slow)

Section 3: General Checklist

1. Surveys should always be conducted in order of the forms. i.e 1, 2, 3, 4, 5. Not doing the survey in this order can lead to incomplete surveys, for which enumerators will need to visit again.

2. The Practice IDs (For example, aj.practice, jh.practice, mu.practice) are strictly for practice and training only. In case SIC members are being trained, please ensure it is done using Practice IDs only. Also, it is the responsibility of enumerators to ensure that surveys are conducted using personal IDs and not practice IDs.

3. Every enumerator should carry a register. Any surveys that are left incomplete should be noted here so that the information can be passed on to the local office, as well as the head office. Surveysors must also carry a hard copy of the questionnaire so that it can be shown to any respondent/authority as and when requested. Mobile should not be used for demonstrations. If a demonstration on mobile is required, please log into Practice IDs.

4. Ensure the application is up to date before conducting surveys.

5. Please ensure the right ward and slum is selected. Slums are listed under wards as per lists provided by teams. If changes are required, please request a day prior to conducting surveys.

Section 4: Additional analysis for Household Toilets

An additional aspect we embarked upon was where data was presented in the form of a database for those who did not have access to toilets at home. The database looks at the following: Name, Head of Household, Mobile Number, House Number, Address/Landmark, Availability of Aadhar and Bank account (at the beneficiary level); as well as Space for construction of toilet, Application for toilet, Date of application, and current status. This information is available from columns BG to BQ in the “Form 4” sheet. A template of formulas used is provided here. Note that these may differ due to sheet names and other factors.
Name | Sheet1 | =VLOOKUP($L2,'1 - पंजीकरण फॉर्म'!$C$2:$T$200,17,0)
---|---|---
Head of HH | Sheet1 | =VLOOKUP($L2,'1 - पंजीकरण फॉर्म'!$C$2:$T$200,18,0)
House Number | Sheet1 | =VLOOKUP($L2,'1 - पंजीकरण फॉर्म'!$C$2:$T$200,15,0)
Address / Landmark | Sheet1 | =VLOOKUP($L2,'1 - पंजीकरण फॉर्म'!$C$2:$T$200,16,0)
Mobile number | Sheet 5 | =VLOOKUP($L2,'5 - सवे सर्वत्र'!$C$2:$K$72,9,0)

To procure Aadhar and Bank account details, use the following:

1. In the sheet titled 'सदस्य स्तर की जानकारी', create two columns: Aadhar check & Bank account check. Under each, paste the respective formulae.

<table>
<thead>
<tr>
<th>Formula for Aadhar</th>
<th>Formula for Bank Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>=IF(F2&lt;18,0,IF(K2=2,1,0))</td>
<td>=IF(F2&lt;18,0,IF(L2=2,1,0))</td>
</tr>
</tbody>
</table>

2. These formulas will return a value of either 0 or 1. A value of 0 means the concerned individual either does not have this facility, or is less than the age of 18. A value of one means the individual is above the age of 18 and has this facility.

3. In the same sheet, create a pivot table starting from Unique ID, and selecting till the columns you have made right now. Create a pivot table on a new sheet and title that sheet as 'Sheet1'.

4. Make sure the pivot is in A3. In the row section, select Unique ID, and in values, select sum of Aadhar check, which is the column you created. The default value may be count. Go to value field settings and change this to Sum.

5. Copy the pivot table you have created to G3, and replace Aadhar check with bank account check in the values field. Here too, ensure that sum is selected.

6. In the analysis for toilets sheet, input the following formula.

<table>
<thead>
<tr>
<th>Aadhar</th>
<th>Bank Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>=IF(VLOOKUP(L2,Sheet1!$A$3:$B$2819,2,0)&gt;0,&quot;Yes&quot;,&quot;No&quot;)</td>
<td>=IF(VLOOKUP(L2,Sheet1!$G$3:$H$2819,2,0)&gt;0,&quot;Yes&quot;,&quot;No&quot;)</td>
</tr>
</tbody>
</table>

Ensure your rows are matching and you should be done!
Section 5: Alternative Method

The section that follows is the older method of data export and has been added here in case it is required.

While this method of downloading website from the website works fine, PRIA decided to switch to a more automated method that did not require field teams visiting the website and manually exporting data. It was felt that being able to pull information in an excel sheet would be less time consuming, more secure and less prone to errors.

Accessing survey data

1. You will receive an invitation in your mailbox from Commcare to access data. Please click on the link marked below to proceed ahead.

2. You will be directed to the Commcare home page. In case you do not have a Commcare account, please sign up for a new account by clicking on the link marked below.
3. Create your Commcare account by filling in details like full name, email id and password.

4. Once you create a new account and sign in, you will need to accept the invitation by clicking on the link marked below.
5. You will be directed to the below page which is the main dashboard of the European Union (EU) project.
Downloading survey data

1. On the main page of the EU project, please click on the “Data” tab at the top.
2. In the drop down, please click on the “Export Forms” tab, as marked below.
3. You will then be redirected to the below page which has all the forms of the app listed.
4. Please click on the “Export” tab next to the form “HH listing > 5 - सर्व समाज” (or the form you require) to proceed ahead.
5. The page for downloading the data corresponding to Form 5 will open up.

6. Three kinds of filters need to be set in order to download the data correctly.

7. The first filter is the “User Types of Group” filter. Please select “Group” from the drop down as marked below.

8. The second filter is the “Group” filter. Please select your respective group from the drop down.
9. Hence, if you are from the Jhansi team, please select “Jhansi enumerators” from the drop down as marked below.

10. The third filter is the date filter. Please set the date range for which you want to download data.

11. Hence, if you want to download data for surveys synced between 3rd and 6th Aug, please set the dates as marked below.
12. As seen below, the filters are set for downloading data for the “Jhansi enumerators” group for data collected between 3rd and 6th August 2016.

13. Please click on the “Prepare Export” tab as marked below.

14. Commcare will now prepare the data to be downloaded.

15. Please click on the “Download” tab as marked below to download the data.
About PRIA

Established in 1982, PRIA (Participatory Research in Asia) is a global centre for participatory research and training based in New Delhi. Currently, PRIA has field offices in several states of India and partnerships with 3000 NGOs across the global North and South to deliver its programmes on the ground. Over 35 years, PRIA has promoted ‘participation as empowerment’, capacity building of community organisations, and people’s participation in governance. Initiatives are undertaken in the overall perspective of ‘making democracy work for all’ – in the political system; democratic culture in families, communities, and society; and participatory democracy with active citizenship. PRIA’s programmes on the ground focus on promotion of participation of the poor, especially women and youth, to claim rights and basic services.

Through building knowledge, raising voice and making democracy work for all, PRIA realises its vision – of a world based on values of equity, justice, freedom, peace and solidarity.

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