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# MOBILE SURVEY TOOLKIT

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EMILY TOMKYS AND LAURA ELDON

**OXFAM GB**



An enumerator in Thailand conducting a mobile survey interview. Photo: Rungthong Kramanon/Consultant

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# CONTENTS

<b>Contents .....</b>	<b>2</b>
<b>Acknowledgements .....</b>	<b>3</b>
<b>Glossary .....</b>	<b>4</b>
<b>1 Introduction.....</b>	<b>5</b>
<b>2 When should you use mobile? .....</b>	<b>7</b>
<b>3 Choosing the right tool.....</b>	<b>9</b>
<b>4 Selecting a mobile device .....</b>	<b>11</b>
<b>5 Designing your mobile survey .....</b>	<b>13</b>
<b>6 Informed consent and ethical considerations .....</b>	<b>17</b>
<b>7 Tips on reviewing data in excel .....</b>	<b>18</b>

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# GLOSSARY

Android Lollipop 5.1.1 Android Marshmallow 6.0.1	Android operating system versions, which are always named after something sweet. Latest version is currently 6.0.1 – known as Marshmallow.
APK software files	<b>APK</b> files are a type of archive file that can be installed on Android-powered devices just like installing <b>software</b> on a PC. No connectivity is required; installation is through a USB cable connecting a laptop and a mobile device
Connectivity range	Internet or phone signal
Cross-survey analysis	Comparing data across multiple surveys allowing for national, regional or global analysis
Cross-tabulation	Comparing the relationship between two or more variables
Digital beneficiary registration	Capturing details of beneficiaries via mobile device for enrolment into Oxfam’s programmes
Hardware	Mobile or tablet device
International Mobile Equipment Identity (IMEI) number	The unique 15-digit code assigned to individual mobile devices – used by Oxfam as an asset code to track device usage and location
Informed consent	The mechanism through which people agree to provide information for research or data collection projects, which ensures that they are fully informed about the purpose of data collection and its intended use in order to make a decision about their participation
Mandatory questions	Survey questions for which answers are mandatory. These force enumerators to fill in an answer before proceeding to the next question
Offline support	No internet or phone connectivity required
Personally identifiable information (PII)	Information that can be used on its own or with other information to identify, contact, or locate a single person, or to identify an individual in context
Qualitative data	Typically descriptive data that is harder to measure. Usually collected through open-ended questions asked during an interview or focus group discussion
Quantitative data	Data for which surveys have pre-defined answers in multiple choice or exclusive choice question format, which is easily measurable
Skip logic	Skipping between questions based on certain answers
Technical literacy	Comfortable using mobile phones

# 1 INTRODUCTION

Surveys form the basis of many data collection exercises run by Oxfam and other organisations, ranging from assessments to ongoing monitoring and evaluation (M&E) processes. Traditional methods of conducting surveys (often paper-based) can be time-consuming and there are limitations to the type and accuracy of information they collect. Digitalising these data collection processes – using mobile phones or tablets instead of pen and paper – provides an opportunity to improve both the process and outputs of data collection.

Oxfam has developed this toolkit to support programme staff to conduct a mobile data collection exercise. It covers the following steps:

- When should you use mobile data collection?
- Selecting the right tool(s)
- Selecting a mobile device
- Guidelines for creating a mobile survey
- Informed consent and ethical considerations
- Tips on reviewing data in Excel

Oxfam's ICT in Programme team has informally tested many tools in consultation with technology providers and partner non-government organisations (NGOs). Based on the technology currently available, Mobenzi and SurveyCTO were selected as the most valuable tools for Oxfam GB. However, given how quickly technology changes, this will be re-assessed every 12 months and may change.

## What are the benefits of a mobile data collection exercise?

Typical benefits include speed and quality:

- **Speed:** It cuts out the need for time-consuming data entry and validation. Data is available for detailed analysis much faster.
- **Quality:** It reduces the scope for human error, means there are no illegible forms, and enables easier analysis, richer content and improved sharing.

Most mobile survey exercises carried out by Oxfam are likely to involve staff or trained enumerators conducting a series of interviews with individuals. In some cases, however, surveys may also be completed by trained and trusted members of the local community (enumerators, animators, paralegals, community workers, etc) who then provide remote updates on specified content by filling in pre-loaded surveys at agreed intervals. This is especially relevant when distance and/or security concerns prevent Oxfam staff from visiting the project area on a regular basis. It does, however, require detailed planning around training, handset use, software, technical support and verification.

## Key considerations

While digital surveys offer many benefits, you should bear in mind that mobile data collection *enables* but cannot replace the knowledge and expertise required for field surveys and analysis. There are a number of important questions you should ask and issues to consider when planning a mobile data collection exercise.

- The **type of data** you are collecting will help determine whether mobile data collection tools are appropriate. Digital surveys work best for capturing quantitative data. While they may also capture small volumes of qualitative data, we would not recommend using digital surveys to collect significant volumes of qualitative information due to challenges around input (e.g. the need to type into a mobile handset while in the field) and analysis of large amounts of 'free text'.
- Almost all mobile data collection exercises will incur **start-up costs**, whether in terms of time or money (e.g. handset purchase, dedicated time for training as well as building and testing the digitised survey, possible software costs). These will typically save time and money in the longer term by cutting out lengthy data entry processes and facilitating much faster analysis of higher-quality data. For your data collection exercise to be successful, you will need to factor in these costs from the start.
- **Responsible data / data integrity** is fundamental. As with any survey exercise, it is important to ask only what you *need* to know, rather than what it would be *nice* to know. Mobile survey tools have varying levels of encryption for sensitive data and will store and back up data differently. The tools selected and supported by Oxfam have gone through a rigorous data security assessment and comply with Oxfam's Responsible Programme Data Policy.<sup>1</sup> Carry out a risk assessment if relevant.
- You should **review staff security** if proposing to bring mobile devices into an insecure area. Undertake a risk analysis for all new projects, locations or activities.
- **Survey and analytical knowledge and expertise remain fundamental** to your data collection exercise. Digital tools may help facilitate the timely capture of more accurate data, but it is still vital that you invest in the design of your survey and plan how best to use the information you collect. Be sure to spend time on training, develop a robust survey methodology, clean and validate the data and carry out standard analysis on the information gathered in order for your project to be a success.
- **Paper back-ups** are recommended. Oxfam advises its teams to plan and budget for 10 percent paper data collection as a contingency. This should cover training, printing (for enumerators to carry paper back-ups) and small amounts of data entry (inputting into the device). You might need this option in case of technology failure, security concerns, or because some communities might prefer the paper-based option. Enumerators should be trained to use both formats (paper and mobile), which usually requires an extra day's training before field testing.

## 2 WHEN SHOULD YOU USE MOBILE?

The context you are working in will play an important role in determining whether it is appropriate to use digital tools to conduct your survey. The following checklist will help you decide, based on some key considerations.

**Table 1: Checklist for determining whether to use digital tools**

Yes if...	No if...
<ul style="list-style-type: none"> <li>You are primarily collecting quantitative data and can provide pre-defined answers for most survey questions.</li> </ul>	<ul style="list-style-type: none"> <li>Most of the research will be qualitative in nature, using focus groups or open-ended questions.*</li> </ul>
<ul style="list-style-type: none"> <li>Mobile phones are commonly used in a project area and won't attract undue attention.</li> </ul>	<ul style="list-style-type: none"> <li>A project area is insecure or using mobile phones may put staff or beneficiaries at risk. <i>In some cases people's perceptions of what you are doing, regardless of the sensitivity of the data you are collecting, may increase risk.</i></li> </ul>
<ul style="list-style-type: none"> <li>Those who will be collecting the data (staff, partners, enumerators, community members) are comfortable using mobile phones and can attend training sessions on how to use the handsets and software just before data collection begins.</li> </ul>	<ul style="list-style-type: none"> <li>You are capturing data on sensitive issues requiring regular eye-to-eye contact where using a mobile phone may be a distraction or considered insensitive in the culture or context.</li> </ul>
<ul style="list-style-type: none"> <li>Budget is available to cover handset purchase, software costs, staff time for initial training, and extra time at the start of the planning process to allow for building and testing of a mobile version of your survey. Remember, investing in start-up costs will typically lead to savings in the longer term.</li> </ul>	<ul style="list-style-type: none"> <li>The local circumstances increase risk of data loss, which might include:               <ol style="list-style-type: none"> <li>Being out of connectivity range (internet or phone signal) for significant periods of time</li> <li>No access to a secure computer to run back-ups</li> <li>Jeopardising large amounts of data stored only on individual handsets that could be lost in the event of theft or damage.</li> </ol> </li> </ul>
<ul style="list-style-type: none"> <li>Your survey includes a degree of logic (skipping between questions based on certain answers) whereby a digital tool can result in significant time-saving.</li> </ul>	
<ul style="list-style-type: none"> <li>Your project could benefit from fast or 'real-time' reporting and/or analysis – which is only possible with digital tools (pending contextual considerations).</li> </ul>	

\* In some cases a mobile survey may complement summary notes written after discussions are held. These notes may highlight trends requiring further investigation via focus groups and other means, but are unlikely to form the sole basis for capturing learning from such discussions. Digital tools (such as tablets with larger screens for input / audio or video recorders) may be appropriate when taking notes that capture qualitative data. In most cases this is unlikely to be conducted using a mobile survey tool given the challenges around input and analysis of large amounts of 'free text' data on handsets.

## A note on sensitive data

Oxfam is bound by *legal* and *moral* standards regarding the data we collect. [Oxfam's Responsible Programme Data Policy](#) details our commitment to treat the programme data we collect with respect and to uphold the rights of the people who have contributed data about their lives.

In any data collection exercise (digital or paper-based), you should be seeking to collect only what you absolutely need to know. Regardless of whether you collect data via a mobile phone or paper and pen, you should be wary of collecting information that might be used to identify a person. Personally identifiable information (PII) is any data that could potentially identify a specific individual. Any information that can be used to distinguish one person from another can be considered personal, such as name, address, location, social security number, date and place of birth, mother's maiden name, biometric records, etc.

In some situations, you may need to collect information that can identify someone, especially if you want to revisit them to investigate changes over time. However, you should avoid collecting this data unless it is absolutely necessary, while ensuring that access to the data is restricted and that it is well protected. Furthermore, you should avoid collecting data that might lead to someone being targeted by certain groups (for example, members of a certain religion or ethnic group, victims of assault, etc). In conflict situations, it is likely that any information provided by communities – solicited or otherwise – will be sensitive and needs to be treated accordingly. This is also the case with health or financial information.

There are several ways you can 'de-sensitise' or 'de-personalise' information:

- Use ID numbers (generated by Oxfam, not national ID cards or other types of ID) rather than names to capture information from individuals. This allows you to capture personal details and restrict who can access the PII. It also allows you to store it separately from your data set containing the content of answers, which can be used for broader analysis.
- Focus on *trends* rather than *individuals* by analysing data in aggregate or correlating with data from group interviews.

Should your survey be suitable for digitalisation, you can mitigate the risks of data breaches during storage and transmission by using different levels of encryption. In many cases, this may be safer than traditional practices using paper and pen. However, there may be new considerations to take into account. For example, if you're in an area of poor connectivity, data would be stored on the phone, which may make the person carrying the phone more of a target than a ream of paper would, therefore increasing the chance of data being stolen or lost.

Whether you use digital handsets or paper, any data collection exercise carries a risk that records may be damaged by bad weather, or may be lost or stolen. It is important to develop a mitigation strategy that is most relevant to your project. Generally speaking, data collection exercises should be undertaken with the acknowledgement that it is highly unlikely that it will be possible to keep all data gathered completely secure at all times.



### 3 CHOOSING THE RIGHT TOOL

For more than two years, Oxfam GB has used a myriad of digital survey tools in different countries and contexts. With an ever-increasing demand for digital data collection, Oxfam has drawn on this extensive experience to narrow down a set of recommended tools. This should make it easier for country programmes to decide which tool to use, and also allow a level of standardisation and organisational support.

Currently, Mobenzi and SurveyCTO have been selected as the most valuable tools for Oxfam’s mobile survey activities. Of course, no one tool can do everything, but these two tools should be sufficient for most situations (although there is a recognised gap for longitudinal reporting such as water point mapping). The main benefits and functionalities of the two data collection tools are listed in Table 2.

Oxfam GB chose Mobenzi and SurveyCTO following a rigorous selection process. With so many tools available on the market, the organisation spent a substantial amount of time researching the options, carrying out pilots, and pulling together the learning from various countries and programme teams. Selection criteria included being a robust tool with a reactive official support channel, which ruled out the free open source tools available. This is in line with Oxfam’s commitment to value for money and ease of set-up, where often the costs involved in adopting free tools scale very quickly because they need more training or technical expertise. Other criteria included survey design, reporting and analytics, language capability, data security standards, and cost.

Given how quickly technology changes, Oxfam’s recommendation to use Mobenzi and SurveyCTO will be re-assessed by Oxfam’s ICT in Programme team every 12 months and may change.

**Table 2: The benefits and functionalities of Oxfam’s two recommended tools**

	<b>Mobenzi</b>	<b>SurveyCTO</b>
<b>Connectivity</b>	Internet connectivity is required to build surveys, download the data and transfer data and forms to and from the device. No internet connectivity is required during data collection.	Full offline support makes it a suitable choice for areas with limited or no connectivity. Forms can be built and transferred as well as data being sent and downloaded with no connectivity. However, a local laptop would be needed.
<b>Ease of use</b>	The good user experience for both the online interface and the mobile app makes Mobenzi an attractive option. Ease of use means teams are less likely to require regular technical support to set up new surveys.	Good user experience but more challenging when using the full offline version. However, SurveyCTO is easier to use offline than other tools such as KoBo Toolbox and ODK.

<b>Cost</b>	The 'pay as you go' pricing model ensures you only pay for what you use. Costs increase with survey length and response volume, which may make Mobenzi less attractive for long surveys involving a high volume of responses. If a country or team is using Mobenzi throughout the year, the device licence payment option may be more cost-effective.	The fixed monthly cost is attractive, with tiered options depending on level of usage.
<b>Reporting/Analytics</b>	Beyond exporting data to Excel, CSV and via Stat transfer (licensed software) to a multitude of statistical packages, the online analytics tab enables users to configure an overview with key indicators from the automatically generated Charts, as well as to filter data, which can then be saved. Pins can also be viewed in a Map with configurable overlays. Published reports allow for customised reporting to be available via a password-protected URL.	Data can be exported to Excel and to other tools (e.g. Statwing, Google Fusion), allowing for advanced filtering and cross-tabulation of data. PII data can be excluded from this.  SurveyCTO can also merge incoming data into Excel spreadsheets to integrate into back-office operations as well as configure automated quality checks.
<b>Language</b>	Surveys can be built in any language but the online interface is limited to English. The mobile app navigation can work in English or Spanish.	Surveys can be built in any language but the online interface is limited to English. The mobile app navigation is able to work in a wide range of languages if supported in the device settings.

## 4 SELECTING A MOBILE DEVICE

This section sets out the technical recommendations for handsets that may be used as part of a programme field activity (mobile data collection, digital beneficiary registration, etc.). It also highlights the key things you need to bear in mind when selecting a handset. The device should not be used as a phone nor designed for personal use. Devices can be used for multiple field purposes and it is advisable that Oxfam staff, consultants or enumerators check devices in and out when they are required for field activities. Procurement can be time-consuming so it is worth building sufficient time into your plans at the start of the project.

### Oxfam standard hardware

Oxfam GB has one Android standard smartphone that has the following specifications:

<b>Motorola Moto G 3<sup>rd</sup> generation (2015)</b>	<ul style="list-style-type: none"> <li>• Android Lollipop 5.1.1 upgradable to Android Marshmallow 6.0</li> <li>• 8GB internal storage expandable by up to 32GB with micro SD card</li> <li>• Water resistant (up to 1 meter and 30 minutes)</li> <li>• Cost in the UK is approximately £150</li> </ul>
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Some regions may struggle to procure the Moto G locally. In this case, select a model that is readily available using the device specifications set out in Table 3. Please note these relate solely to devices that will be used for data collection.

**Table 3: Recommended device specifications when procuring handsets locally**

Feature	Minimum	Desirable
<i>Network</i>	Not required if only submitting through Wi-Fi	3G enabled to allow for data transfer where Wi-Fi is unavailable
<i>Display</i>	4.5" 220ppi pixel density	5" 250ppi pixel density Corning Gorilla Glass 3 Splash/scratch/dust resistant
<i>Platform</i>	Android OS 5.0 (Lollipop) CPU min Quad core 1,2 GHz	Upgradable CPU min Quad core 1,4 GHz Separate GPU
<i>Memory</i>	Internal 8GB with expandable SD card slot OR 16GB internal	Expandable card slot 32GB or higher on any phone
<i>RAM</i>	1GB	2GB
<i>Battery</i>	2000 mAh	Removable – particularly if working in remote areas with limited electricity. Solar chargers (where available) could be a cost-effective and practical option for charging handsets ( <i>the Powerenz LiPo 32 has been recommended by Internews</i> ).
<i>Camera</i>	5MP	8MP
<i>Data</i>	LTE Cat 3, HSDPA+, HSUPA, EDGE, UMTS, GPRS	

## What you need to consider

- **Pick a handset that is readily available locally:** This makes procurement easier, means users are more likely to be familiar with the handset, reduces the security risks of users carrying an uncommon and therefore valuable item, ensures support for local language, avoids potential import duties, ensures correct plug sockets for charging, and comes with warranties valid in country of operation.
- **Do you need rugged waterproof / droppable models** (which are available but typically at a higher cost)? You could also buy protective cases and screen protectors if needed.
- **Do you need a handset with a sliding keyboard** (so as not to rely entirely on a touch screen)? This may be a good choice if users are entering significant amounts of free text. But remember, you should **select a handset that enumerators are familiar with** in terms of touchscreens vs qwerty keyboards.
- Ensure that **handsets are clearly labelled with the Oxfam logo** unless there are security risks to doing so. Labels should not be easy to remove, and should include a message about the handset's use and a phone number to call to avoid the risk of theft.
- Do you need to buy soft **slipcovers with neck straps** so that people using the handsets to conduct surveys can wear them underneath their shirts in the field?
- **Prep the handsets** for your data collection exercise – ensure that the latest version of the collection app is installed, remove all non-relevant icons and widgets, set the phone to flight mode (to save battery life) unless live reporting is required, prep the GPS fix, etc.
- **Do you need to insure the devices?** This is likely to depend on the cost per unit and can be decided on a case-by-case basis, depending on local context and preferences.
- All mobile devices owned by Oxfam GB are enrolled in the Cisco Meraki Mobile Device Management system. This allows Oxfam to remotely track and wipe data as well as to install profiles suitable for how the devices will be used.

# 5 DESIGNING YOUR MOBILE SURVEY

This section gives guidance on how to design your mobile survey. It does not advise on the types or content of questions you should be asking. You should discuss those issues with monitoring, evaluation, accountability and learning (MEAL) advisers and other experts. If you have decided that mobile is the right method for your project/programme and context, here are the steps to follow.

## 1. Pre-design planning

- ***Only collect information you really need to know***

Make sure you plan to collect only the information that you really need. Many organisations make the mistake of collecting far more data than they can analyse, so keep your survey short and simple. Oxfam does not want to burden the communities we are working with and cause survey fatigue. When conducting a mobile data collection exercise, remember that the longer the survey, the more you need to think about memory space (especially if capturing 'rich' media such as audio, photo or video) as well as battery life. It will also be more expensive to upload the files if you can't do this through Wi-Fi.

- ***Quantitative research***

The mobile technology available is conducive to quantitative research (numerical data). This is where most survey questions have pre-defined answers in multiple choice or exclusive choice format, which can be easily measured. If your research is predominantly qualitative (non-numerical user feedback, such as the answers given to open-ended questions), then mobile is not likely to be the best tool to use to collect your data.

- ***Personal/sensitive data***

Ideally, surveys should be anonymous so that participants are inclined to be as honest as possible. If you need to collect personal data, only collect what you need. Collecting Personal Identifiable Information (PII) data will also make your data sensitive (names, location, photos, etc.) and so will require stricter data encryption settings and storage procedures (e.g. to separate PII from your main data set). Where possible, use ID numbers for respondents/participants rather than names. It is recommended that you do not collect data on people's religion, ethnicity or any other aspect of identity which could, in the wrong hands, lead to certain individuals or groups being targeted. If this data is vital to your research survey, check with security advisers first, especially if you're working in a fragile state or highly insecure setting.

## 2. Design

- ***Standardise lists of answers***

Consistent answer lists used in all surveys mean you can conduct cross-survey analysis. It will also make it easier to observe and monitor long-term trends within and across countries and regions. For example, if asking a person's age group (e.g. 0-5, 6-12, 13-18, etc.) rather than age, ensure that the groups you use are the same across all projects (and ideally countries/programmes where feasible) so that you can easily compare data across surveys and monitoring data.

- ***Short codes and labelling***

Certain software also requires codes or labels for questions and any option answers. Try to keep these standardised – e.g. creating the label 'Age' for the question 'How old are you?' Best practice is to keep these as short as possible to reduce data transfer. For answer options, you can choose to use numbers or words (it often comes down to personal preference). But when thinking about the data analysis – particularly if you want to create pivot tables – the choice of label or code is important, as it can reduce how much data cleaning is required.

- ***Keep scrolling to a minimum***

Some software applications allow you to have multiple questions appear on a device screen page, while others only display one question per page as default. It is best to stick to 2-3 questions on each page to avoid users having to continuously scroll downwards. It also makes the survey appear shorter, keeping users engaged.

- ***Avoid open-ended questions***

Data collected via open text boxes is time-consuming and would not be recommended for wide usage in the context of mobile data collection. Notable exceptions are having 'other' boxes to quantitative questions (in case you've missed an option) or as a 'further comments' box at the end of the survey. Some tools offer a video and/or audio data collection option. This can be useful in adding a qualitative element to your research, as you can record someone speaking their answer. But this will require additional time for transcription.

- ***Use 'mandatory' questions sensitively***

You can specify questions where answers are mandatory. These require data collectors to fill in an answer before proceeding to the next question. This can be a valuable piece of functionality when used correctly, as you can make sure that critical questions don't get skipped. Note that some tools will set all questions to mandatory by default, while others require you to activate this setting on a question-by-question basis. If using the required function, ensure that users don't have to answer the question if they don't want to by including options such as 'don't know', 'other' and 'no answer'.

- ***Multiple choice/exclusive choice questions***

Remember to include options for 'not applicable', 'other' and 'don't know', especially if the question is mandatory. If you don't offer a way out of answering the question, users may

pick an option that doesn't truly apply, giving you a false response. All mobile collection software offers skip logic functionality (only showing questions that are relevant) to varying degrees of complexity. Be sure to use this so that all questions are relevant to the user, which keeps the survey as short as possible.

- ***Consider using question types that aren't possible via paper collection***

When designing your survey, remember that mobile data collection tools allow you to use question types that are not available for paper surveys and may help improve the accuracy of the data you collect. These can include setting constraints on question answers (for example, to be between a certain numeric range), prompting instructions, and survey branching based on answers to previous questions, as well as running calculations. It is also possible to collect rich data such as GPS, photo, video and audio responses to questions where appropriate. Support for these different question types varies from tool to tool, so this is something you should consider. Also, bear in mind that rich data capture will take up more memory space and potentially drain battery life faster during a data collection exercise.

- ***Question length***

Remember that data collectors will be using a small screen, so keep the questions as short and concise as possible.

### **3. Don't forget the general principles**

- ***Avoid introducing bias***

Avoid asking leading questions or introducing bias. For example, don't ask 'Do you agree with...' as it encourages a positive response. Instead, re-word as a statement, to which the respondent can answer 'agree' or 'disagree'.

- ***Language and built-in assumptions***

Use simple language; avoid jargon and acronyms. Also, don't ask questions that assume a level of knowledge around a specific topic (except where relevant).

- ***Create a logical flow to the questions***

Arranging the questions in a logical order and consistent format will help ensure that respondents fully understand what you are asking. Grouping the survey into a number of sections may make it easier to use and navigate on mobile devices. Start with more general questions and then 'funnel down' into more specific and sensitive questions.

### **4. Finally...**

- ***Test, test and test again***

Once you have built your survey, test it. Get a colleague to test it too. Ensure that the user experience works well on the phone, that skip logic is set up as you wanted it, that the survey flows logically and that submissions can be uploaded correctly to the server. Training with enumerators / staff conducting the survey is a good opportunity to help

identify errors. If you make any changes, test the survey again. You should not change surveys once data collection has started (some tools may not actually let you). So make sure your survey is fit for purpose before making it live.

- ***Reporting and analytics***

Don't forget that after going to great effort to collect the data, it's what you do with it that matters most. Both Mobenzi and SurveyCTO include a degree of inbuilt reporting but you will probably use additional tools for your analysis. Oxfam's ICT in Programme team is currently mapping teams' requirements and exploring suitable tools. For advice on viewing data in Excel, see Section 7 (page 17).

- ***Complementing quantitative data with qualitative data***

We would strongly encourage you to collect qualitative data to explore the 'why' behind what your quantitative data reveal. Using mobile for quantitative data collection saves you time as there's no data entry. Use this time to go back to communities to collect qualitative data, provide feedback to respondents on the data collected, verify the survey's findings, and delve deeper into key findings – for example, through focus group discussions and key informant interviews.



# 6 INFORMED CONSENT AND ETHICAL CONSIDERATIONS

Your data collection exercise (mobile or paper-based) should comply with Oxfam's [Responsible Programme Data Policy](#), which expresses the organisation's commitment to treat the data we collect with respect and uphold the rights of those who contribute data about their lives. It is also crucial to gain informed consent from participants in (or respondents to) any data activity.

Informed consent is the mechanism through which people agree to provide information for research or data collection projects. It ensures that they are fully informed about the purpose of data collection and its intended use in order to make a decision about whether they wish to participate. Informed consent must be based on a clear appreciation and understanding of the facts, implications and consequences of an action. This includes disclosure of research objectives and any risks or negative consequences of participating, ensuring that individuals can understand the implications of participating, and confirms that their participation is voluntary.

You should gain informed and voluntary consent prior to collecting data regardless of whether you use paper or digital survey formats. However, you need to consider some additional factors when using digital tools. As well as explaining the content of the survey to potential respondents, you should also:

- Explain the rationale for using digital tools instead of paper (i.e., what the process or technology is and why you are using it).
- Explain who will have access to the data and how long they will keep it for, based on the agreed data disposal policy for the project.
- Where possible, use the local language when explaining things to people so that when you show the device and mobile application, the respondent understands what is written on the screen.
- Allow the respondent to view the screen during the survey (unless this affects the questioning and data collection).
- If there are no requirements for photos and where there are certain sensitivities, cover any device camera with a sticker.
- If appropriate, clearly brand the devices so that your organisation is highly visible.
- If the respondent feels uncomfortable because of the technology, enumerators should switch to using a paper version of the questionnaire.
- Explain how feedback will be provided and how people can ask questions about the organisation or project. Using mobiles allows more prompt feedback to respondents; you can get people's mobile phone numbers and provide them with information via SMS or phone.

To find out more, see these documents:

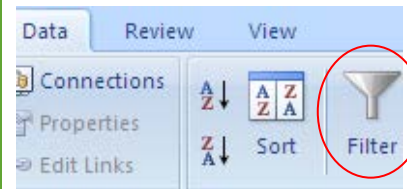
- [Oxfam's Responsible Programme Data Policy](#)
- [Responsible Data Forum resources](#)<sup>2</sup>

# 7 TIPS ON REVIEWING DATA IN EXCEL

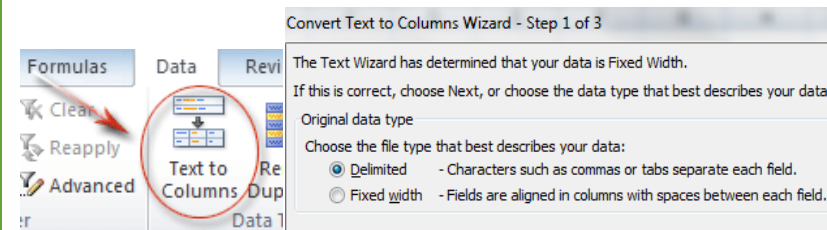
All mobile data collection tools will export data into Microsoft Excel. Here, we offer some tips to help you analyse exported mobile survey results. Note that data can be presented differently depending on which platform you use and the version of Excel you are analysing the data in. Some tools also have online analytics that are available for basic data manipulation and monitoring. In some cases, tools can be integrated into more comprehensive analytical programmes such as Stata.

**Filters** – To enable filtering in columns, highlight row 1 of your data (the headings row) and go to the 'Data' tab – select 'Filter'. Once filtering is turned on, click the arrow in the column header to choose a filter for the column. This allows you to show data that matches a specified criteria e.g. all 'Female' results.

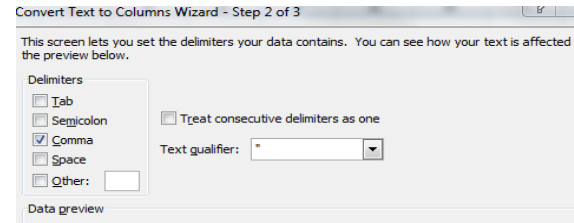
**Sorting** – To sort data based on specific criteria, highlight the data and go to the 'Data' tab – select 'Sort'. This could be used to sort the date that survey results are submitted if the survey is taken regularly over time.



**Multiple choice questions** – Some mobile data collection software export results with multiple choice answers in the same cell but separated with a space. To separate answers for analysis, insert the number of cells you require for each separate response (number of options in the question) to the right of the column that has the answers you wish to separate (i.e. if they are sitting in column A, insert cells in column B). Highlight the column you are separating, go to the 'Data' tab and select 'Text to columns'.



From here, keep the description as 'delimited' and hit 'next'. Then change the delimiter to 'space' – this is telling Excel to move each word into separate cells. If cells are separated with a comma, change the delimiter to 'comma'.



### Using COUNTIF

In the example to the right, the range selected is column 'M:M', which is the 'Location' column. The criterion given is 'Oxfam House'. With the formula: =COUNTIF(M:M,"oxfam house")

M:M is the column with the location data

The formula above counts the number of people who answered the survey that were located in Oxfam House. From here, you are able to calculate the percentage.

	K	L	M	N	O	P
	Name	Date	Location	How	Where	are
	pooja kishi	2012-09-24	oxfam hou	refugee		
59097	emily test	2012-09-19	river point	refugee dis	boreholewi	yes
59097	kish	2012-09-24	river point	refugee dis	boreholewi	yes

**Function Arguments**

COUNTIF

**Range** M:M = {"Location";"o

**Criteria** oxfam house =

= 0

Counts the number of cells within a range that meet the given condition.

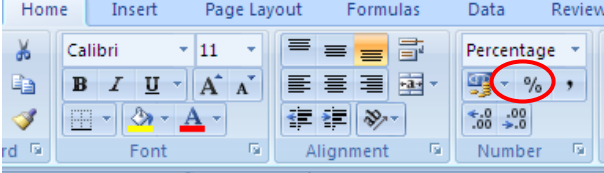
**Criteria** is the condition in the form of a number or text that defines which cells will be counted.

## Percentages

Using the example on the right, to find out the percentage of people that share a latrine with 1 to 20 people, the calculation is as follows: number of people that fall into the '1to20' category / TOTAL \* 100 which is  $2/68 * 100 = 3\%$ . Select the answer cell to be a percentage using the button as shown. Excel will then help you do the calculation and you won't need to multiply by 100.

When calculating percentages, it is useful to use a \$ sign in between the letter of the cell you want to be constant.

In the example on the right, the total of 68 (in cell J80) does not change. If you calculate the percentage of the answer 1to20 and use the \$ sign as shown, you can then drag the calculation for each answer and the total 68 remains fixed in each formula but the row number changes to correlate as you drag down – this saves you time!



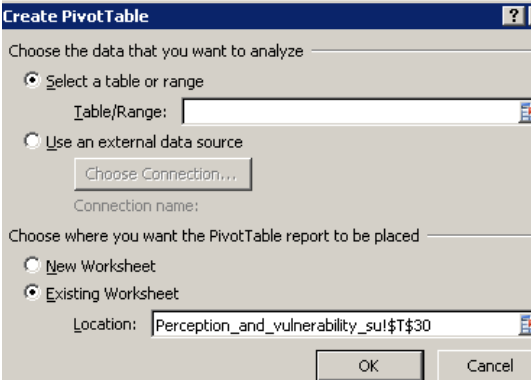
The screenshot shows the Excel ribbon with the 'Number' group selected. The 'Percentage' button is circled in red. Below the ribbon, the formula bar shows the formula  $=J75/\$J\$80$ , also circled in red. The spreadsheet below shows a table with the following data:

	I	J	K
73			
74	How many people are using each latrine?		
75	1to20	2	3%
76	31to40	3	4%
77	41to50	1	1%
78	50to75	3	4%
79	morethan100	59	87%
80	TOTAL	68	

## Pivot tables

Pivot tables allow you to disaggregate your data quickly and flexibly as well as analyse relationships between multiple variables. Before creating a pivot table, you will probably need to clean the data, depending on how you have used short codes and labels. This may involve changing numbers back to words (location and gender) but also changing the number coding to allow Excel to create SUM or COUNT calculations. For example, this may be splitting out single choice questions to have one answer per column with '1' to mean selected and '0' or 'blank' as not selected.

To add a pivot table, select 'Pivot Table' located on the far left of the 'Insert' tab. Now select the relevant data by clicking the small spreadsheet with an arrow icon. Choose the worksheet location and select 'OK'.



The screenshot shows the 'Create PivotTable' dialog box. The 'Table/Range' field is empty. The 'Existing Worksheet' radio button is selected. The 'Location' field contains the text 'Perception\_and\_vulnerability\_su!\$T\$30'. The 'OK' and 'Cancel' buttons are visible at the bottom.

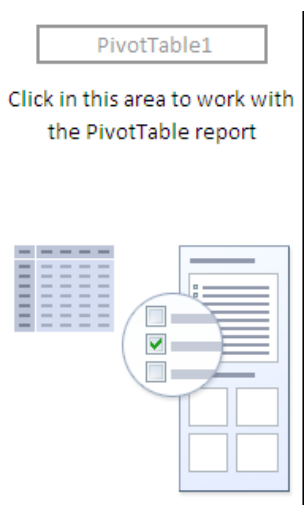
To build a report, choose fields from the Pivot Table Field List. There are different sections as follows:

**Filters:** Fields that enable you to change the data summaries shown by filtering in or out data sets.

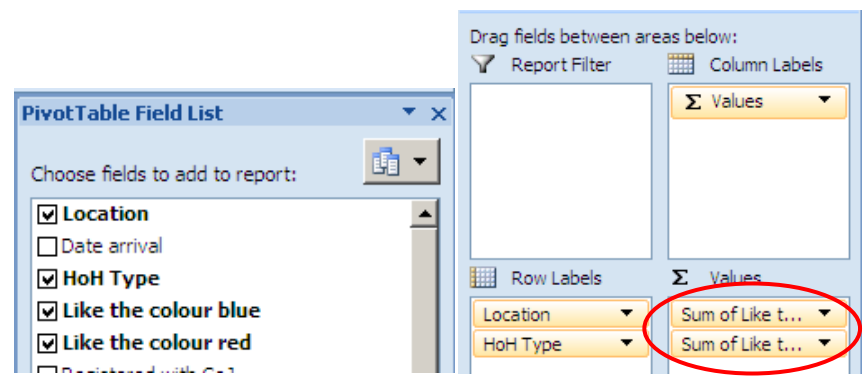
**Columns/rows:** Fields that set the arrangement of data shown in the columns/rows.

**Values:** A number field that calculates the data presented in the cells — make sure you change the value to the correct calculation (e.g. SUM or COUNT) by clicking on the value and selecting 'Value Field Settings'. Please note that COUNT will add all populated cells, including 0, whereas SUM will add together the figures shown. This is where data cleaning is particularly important.

The easiest way to understand what pivot tables can do is to explore the different ways the data can be arranged. We have provided an example below, but we encourage you to have a go with your own data.



Values		
Row Labels	Sum of Like the colour blue	Sum of Like the colour red
<b>Bangkok</b>	8	1
Female	2	0
Male	6	1
<b>Brasilia</b>	6	5
Female	2	2
Male	4	3
<b>Brussels</b>	56	47
Female	10	5
Male	46	42
<b>Cape Town</b>	41	32
Female	11	8
Male	30	24
<b>Istanbul</b>	40	28
Female	4	2
Male	36	26



## Helpful keyboard shortcuts

Table 4 sets out some common shortcut keys. These are probably the most useful ones but there are many more that will speed up your Excel use. Many work across any program running on Windows. You can find other Excel shortcuts [here](#).

Shortcut	Description
CTRL + c	Copy
CTRL + v	Paste
CTRL + x	Cut
Alt + tab	Switches between running programs
CTRL + PgUp	Switches between worksheet tabs, from left-to-right
CTRL + PgDn	Switches between worksheet tabs, from right-to-left
CTRL + arrow key	Moves to the edge of the current data region in a worksheet
CTRL + shift + arrow	Extends the selection of cells to the last non-blank cell in the same column or row as the active cell
Shift + arrow	Extends the selection of cells by one cell

## Notes

- 1 Oxfam. (2015). *Oxfam Responsible Program Data Policy*. Last accessed July 2016, from: <http://policy-practice.oxfam.org.uk/publications/oxfam-responsible-program-data-policy-575950>
- 2 Responsible Data Forum resources. Last accessed July 2016, from: <https://responsibledata.io/category/resources/>



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