Conducting research by mobile phone: Experiences from a nationwide educational project

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Abstract

The use of mobile phones in research in Papua New Guinea is in its infancy. The recent elementary teacher training reform research project was one of the first to use mobile phones to conduct quantitative interviews with education sector stakeholders nationwide. Feedback from this project and from other recent initiatives suggests that mobile phones offer a real opportunity to researchers in collecting certain types of data in a quicker, simpler and significantly cheaper manner than face-to-face research. Currently, issues with sample availability and reliability, network coverage and female access to mobile phones mean that the methodology is not suitable for use with all audiences. The methodology itself also does not lend itself to answering all types of question. But it offers a different set of benefits and drawbacks to other available methods, and its usefulness is likely only to rise as mobile phone coverage expands.

Key words: mobile phone, research, methodology, rural, remote, female, cost effectiveness

What do we know about usage of mobile phones in Papua New Guinea?

Mobile phones are one of the most effective and widely-used means of communication in all of Papua New Guinea (PNG). An Intermedia report on citizen access to information in PNG in 2012 estimated that 82% of households across PNG had access to a mobile phone. This placed mobile phones alongside the radio as 'the most readily accessible media devices for PNG citizens' (Debeljak and Bonnell, 2012, p. 33).

However, this level of coverage is a new phenomenon. Dr Amanda Watson at the PNG Economic and Public Sector Program (PNGEPSP) has conducted a number of studies into the use of mobile phones in PNG, and she notes that since 2007 (the point at which markets were liberalised and Digicel entered the PNG market), '*the number of mobile phone subscribers has increased substantially*' (Watson. 2012, p. 47). The following figure shows just how substantial that increase has been.
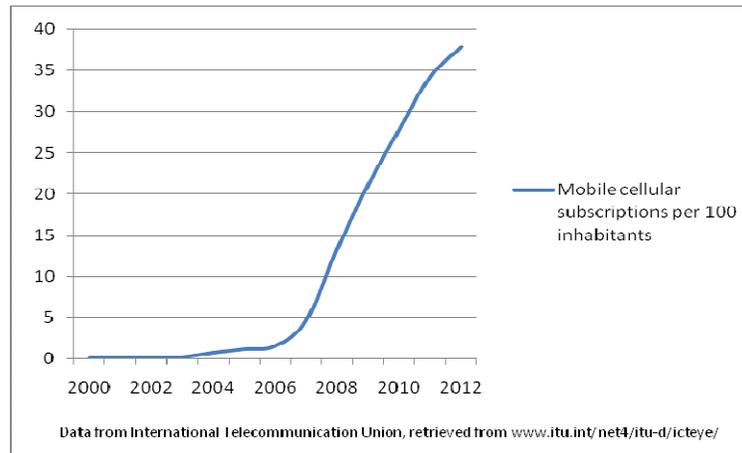
Figure 1: Number of mobile cellular subscriptions per 100 inhabitants in Papua New Guinea, 2000-2012
Post-paid and pre-paid subscriptions are included from
www.data.worldbank.org/indicators/IT.CEL.SETS.P2

Between 2007 and 2012 the number of subscriptions per 100 people rose from 5 to 38. The true number with access to a phone is greater than this, as it is known that many households share one phone between multiple users (Debeljak & Bonnell, 2012, p. 51). This indicates that in the period since 2007 the mobile phone has gone from being a rare commodity with no utility for mass communication to one of the most effective ways of reaching citizens in Papua New Guinea.

Can the mobile phone make it easier to contact hard-to-reach groups?

Communications in some parts of Papua New Guinea can be difficult. Both transport infrastructure and communication infrastructure are limited in parts of the country. In addition to this, social conventions make certain audiences, notably women but also other groups, less well represented in public forums. There are therefore groups of people who are hard-to-reach when conducting research. Mobile phones appear to offer some promise in terms of being able to contact previously hard-to-reach audiences. Following is a discussion on the potential for reaching audiences in rural and remote areas, and for improved representation of females.

Watson (2012, p. 48) noted that in rural and isolated settings, mobile phones are both cheaper and easier to use than other modes of communication. Kaleebu, Gee, Maybanks, Jones, Jauk & Watson, 2013b, p. 51) also note this in their paper on *SMS Story*. Their research surveyed teachers in rural and remote parts of Madang and Simbu provinces and found that more than nine in ten (92%) said that they had access to a mobile phone. On average, they had had access to these phones for 2.7 years. The indications are therefore, of a cheap and usable technology being rapidly made available to rural and remote audiences. Service

providers are also beginning to make use of rural and remote access to these technologies in order to deliver services. The Voluntary Service Overseas' (VSO's) *SMS Story* initiative uses mass text messaging to send daily stories and lesson plans to teachers in rural and remote parts of the country. This trial has had success in improving the educational outcomes of elementary school pupils by providing stories and lesson plans to teachers in rural and remote locations. (See Kaleebu, Gee, Jones, Jauk, & Watson, 2013a). On the other hand, rural and remote locations still do not enjoy the full benefits of mobile connectivity. The map below shows the areas of the country which were covered, or planned to be covered, by 2012, by the mobile network provider with the widest coverage.
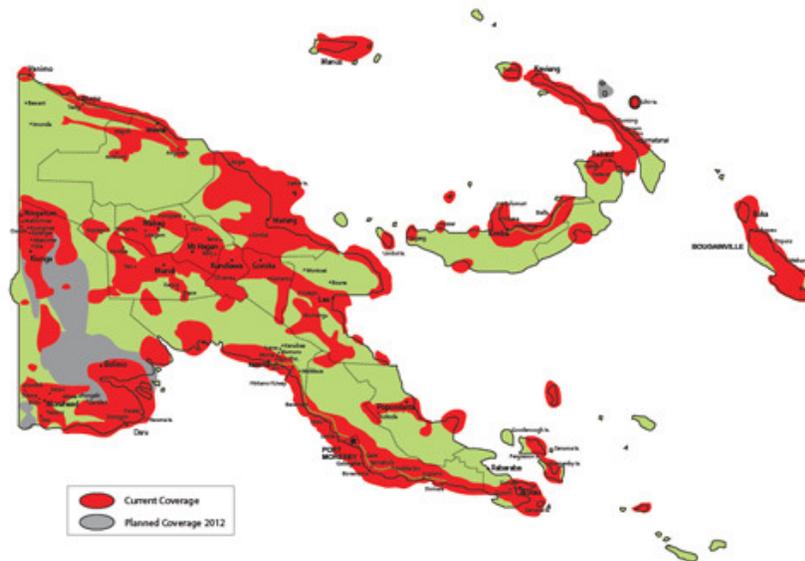
Figure 2: Map of network coverage in Papua New Guinea, 2012
Retrieved from http://www.digicelpng.com/en/coverage_roaming/coverage-map
5 March 2014

Further expansion of coverage is planned (see Suwamaru, 2014, p. 47). However, many areas of the country remain uncovered. Unsurprisingly, the areas which are not covered are those away from main urban areas. Research in other countries has noted that lack of access to a mobile phone signal tends to correlate with lack of access to other infrastructure – for example road access. Dillon (2010, p. 8). Those who are not covered by phone signal therefore, are likely to be those who also have low access to other services. The Intermedia research (Debeljak and Bonnell, 2012) also noted that even where mobile phones were available to those in rural and remote areas, it was noted that they did not always have easy access to reception:

> In media-poor areas, household access to... mobile phones... tends to be limited by financial constraints, but also poor mobile signals, particularly in remote rural areas. Participants in the qualitative research, for example, often spoke of... a long walk to a particular small spot nearby where they knew they would normally be able to catch a signal strong enough only for sending SMSs - the 'bush phone booth.
>
> <div align="right">Debeljak and Bonnell, 2012, p. 33</div>

In addition, Debeljak and Bonnell (2012, p. 32) found that 'most households with no... mobile phone [are] typically based in rural areas (66 percent of [all households] with no mobile phone are in rural areas.' There are also difficulties in getting phones charged (Watson, 2011, iv). It is fair to conclude that there is an urban bias in the audience which will be accessible by mobile phone.

In summary, using mobile phones offers new possibilities. The figures from both SMS Story and Intermedia investigations show a high level of access to mobile phones, yet the method of using mobile phones for research is not perfect. It still misses some people in rural and remote areas completely, and for others it only offers a limited means of engagement. However, even in this limited capacity it still offers a potential means of communicating with some rural and remote audiences.

The second audience that we will look at is women. Again, the mobile phone potentially offers a useful mode of communication.

> Mobile phones are the only platform where women are not disadvantaged in terms of regularity of their use, with about four in five women - the same as men - using them on a weekly basis.
>
> <div align="right">Debeljak and Bonnell, 2012, p. 33</div>

In addition, because they are small and essentially personal items, mobile phones offer women a greater degree of privacy in their use than would be the case for other means of mass communication, such as TV, internet or radio. However, again mobile phones do not offer the possibility of contacting all of this audience. For women, one of the main issues is control of the phone. For example, women often report that the use of these various media is in fact controlled by someone else in their home - typically the father, the husband or the brother. Around three quarters of women said that they controlled the use of the mobile phone in their house (73%) – lower than the proportion of men who said the same (84%) (Debeljak & Bonnell, 2012, p. 34).

How can mobile phones be used in research?

As with any methodology there are pros and cons regarding telephone research and while it is suitable for some tasks, it is not suitable for others. This section considers the advantages and disadvantages of conducting fieldwork by mobile phone as compared to the traditional methods of data capture in PNG – face-to-face interviewing or self-completion questionnaires filled out at a central location.

The pros of data collection by mobile phones

Speed of fieldwork	Cost of fieldwork	Offers a dispersed sample	Good for contacting hard-to-reach groups
Oversight of research team is easier	No risks regarding safety and security	Easy to reschedule	

(Amalgamated from multiple sources, notably *Professional Telephone Surveys*, Blankenship 1979)

One of the most straightforward advantages to using mobile phones as a research methodology is that it reduces the need to travel. Given the difficulties and length of time involved in travelling to many parts of PNG, this can be particularly valuable in saving researchers cost and time compared with studies in which researchers have to meet their audience in person. (See Dillon 2010, p. 3; Leedy and Ormrod, 2005, p. 185). Another related advantage is that mobile phones offer access to a dispersed sample of respondents (Blankenship, 1979, p. 43). In face-to-face research some element of clustering of samples is likely, which means that decisions have to be made about which samples are representative of the broader population. For a study using telephone interviews, such decisions are not necessary. It has already been suggested that mobile phones may in some circumstances offer an easier way to reach female respondents, or respondents in remote areas. Mobile phones may also make it easier for those with restricted mobility to more easily participate in research.

Lastly, telephone research can be conducted, managed and overseen from one location. First, this makes management and oversight of the process more straightforward. Greater oversight minimises the risks of interviewer error, and can help to enforce consistency in the delivery of interview questions (Blankenship. 1979, p. 45). A second advantage of the survey team remaining in one place is that the logistical challenges of travel – delayed flights, poor road and vehicle conditions and security risks – are not encountered (Gray, 2004, p. 232). Finally, the methodology offers interviewers greater flexibility in rearranging interview appointments as interviewees do not have to extend their stay or make a return visit – as would be the case with face-to-face fieldwork.

The cons of data collection by mobile phones

Some potential respondents may not have phones	Limitations to the type of data that can be gathered	Researchers cannot use visual stimulus	Harder to establish rapport

(Amalgamated from multiple sources, notably *Professional Telephone Surveys*, Blankenship 1979)

Currently in Papua New Guinea, one of the primary limitations of the methodology is in regard to sampling. As discussed above, network coverage does not extend across the whole country, and not all Papua New Guineans have a mobile phone. Already therefore, some audiences are excluded by virtue of using this method. Perhaps more importantly, records of mobile phone numbers are not available for all audiences. National Information and Communications Technology Agency (NICTA), the regulatory authority for the telecommunications sector in PNG, is currently drafting legislation requiring SIM (subscriber identification module) cards to be registered and the subscriber's details held. This could include creation of a Subscriber Information Database. However, even if this data are collected and stored centrally, it is likely that access would be limited to law enforcement and other similar agencies, and it is unlikely to be made available for researchers.

It is even less likely that such records would be linked to other demographic or social data which would be useful in designing a sample. This makes the use of random sampling difficult to impossible. In the education sector, adding and maintaining mobile contact details for all teachers on existing databases – for example the Department of Education's Education Management Information System (EMIS) – would be a useful step towards making more rigorous sampling methods easier to implement.

A further difficulty is the tendency for phone numbers to change frequently in the contemporary PNG context (Watson, 2014, pp.7-8). In a mobile phone trial project, it was found that even where numbers were initially available, some respondents could later not be contacted after losing their phones or changing their SIM cards (Watson & Morgan, 2013, p. 8). A research participant changing their mobile phone number can cause difficulties for the implementation of tracking studies or when making validation calls.

There are also limits to the kind of questions that can be asked by telephone. For quantitative questions, questions should be kept short and simple, and the number of response options given should be kept low (Gray, 2004, p. 112). The length of each interview may also have to be shorter than a face-to-face interview. Dillon notes that many people find long mobile phone conversations difficult (2010, p. 12). In addition, it will not be possible for the researcher to use any visual stimulus – photographs, maps or videos - as part of their questioning (Blenkinship, 1979, p. 48).

Interviews conducted by telephone do not allow either the researcher or interviewee the opportunity to interpret visual feedback and body language. In qualitative work, this means less information for the researcher to process and from which to make their interpretations, and makes it harder to judge how and on what to probe for more detail. It also hinders the researcher's ability to develop rapport with the interviewee (Leedy & Ormrod, 2005, p. 185).

Recent examples of projects using mobile phones in PNG

With the aforementioned boom in mobile phone use, some projects have begun to take advantage of the communication potential that they offer. It is useful to briefly describe them here. One notable project is the Education Department's Closed User Group (CUG) phone network. The department provides mobile phones to many of its officers, which allows free calls to be made to other members of the network. Members of the CUG network are based in Waigani and in each of the provinces, allowing for nationwide communication between Department of Education officers. One notable limitation to this network, which was noted by the authors during their own work, was that the Department's list of CUG contact details (a document called 'In the Loop') does not always hold up-to-date or accurate information about officers' phone numbers.

Another notable project is the SMS Story initiative. This controlled research trial, implemented by VSO and funded by the Australian Government through the Papua New Guinea Economic and Public Sector Program (PNGEPSP), delivered daily stories and lesson plans to teachers by SMS message. The project was able to provide these resources to elementary teachers in rural areas of Madang (Karkar and Usino-Bundi) and Simbu (Karamui and Kerowagi) for the cost of around K2 per child (Kaleebu et al., 2013a, p. 69) leading to a significant improvement in children's reading skills.

Another PNGEPSP project of particular interest for this paper is within the law and justice sector. This project aims to use mobile phones to collect data remotely (Watson & Morgan 2013). In the study, data was gathered from District Court clerks about how they respond to cases. A total of 16 questions in this area were asked by the team, all of which were delivered by SMS. The authors found that not only was data collection timely, but that respondents reported it as being easy and enjoyable. They concluded that the project 'generated much useful data that had previously been difficult to collect' (Watson & Morgan, 2013).

Details of the elementary teacher training reform (ETTR) telephone research project

The elementary teacher training reform (ETTR) telephone research project was the first stage of a multi-year reform program for pre-service elementary teacher training. The aim of the research was to provide policy makers with feedback on the main issues facing the sector. A mixed-method approach was taken to uncover these, using focus groups, in-depth interviews, document review and quantitative interviews. The quantitative interviews were conducted by mobile phone, and these therefore are the subject which is explored in this paper.

Fieldwork took place from 29 October 2013 to 29 November 2013. In this period 500 oral telephone interviews took place. Interviews lasted between 30 minutes and an hour. These interviews were completed by a team of five telephone researchers, working from one office in Madang. In all, K3,692.50 was spent on phone credit in the recruitment and conduct of these interviews.

Three different audiences were targeted with the telephone interviews:
  i)   elementary teachers who had experienced pre-service training at the PNG Education Institute (PNGEI) in Port Moresby (the 'residential mode' of training)
  ii) elementary teachers who had experienced pre-service training in their home province (the 'mixed mode' of training)
  iii) elementary teacher trainers.

The team based in Madang was able to contact respondents from 21 of the 22 provinces, including those from rural and remote areas, during the fieldwork period. The only province not represented was Hela. The research corresponded to normal ethical processes. Before the survey began, respondents were asked whether they wished to continue in English or Tok Pisin. Interview scripts were available in both languages. Respondents were then given a detailed introduction to the project, including its purpose, their role in it and the intended use of the findings. Participants were then asked whether or not they gave informed consent to participate.

What problems were faced during the ETTR telephone fieldwork?

Problems caused by the quality of the phone network
One challenge that the research team was faced with was disruption caused by the quality of the phone network. This meant that even where calls could be made to rural and remote areas, researchers reported problems with calls either being disconnected before interviews could be completed or calls having poor audio quality. Again, this is a potential source of urban bias from the method. These disruptions were particularly strongly felt during periods of very bad weather. In some areas it was also noted that respondents were using low quality mobile phones which further obstructed the audio quality. A further problem was that in places where mobile network coverage is unavailable, interviews could not be made unless the respondent travelled to a location where network was accessible. An example of this would be respondents from parts of Milne Bay Province. Respondents from very remote islands were impossible to contact unless the respondent travelled to Alotau, where their phones could pick up network coverage.

Lack of comprehension from both interviewers and interviewees
The level of comprehension of research respondents was also a factor influencing the efficiency of data collection. The perception from the research team was that this was a particular difficulty when interviewing those with low levels of education, a category which some elementary teachers fell into. It was noted that despite Tok Pisin being widely used throughout the country, there were still barriers in understanding and speaking it. The general perception from the research team was that each region spoke a distinct dialect of Tok Pisin. Interviewers from coastal regions noted particular difficulties when speaking to respondents with a Highlands dialect.

Sampling issues
Absence of a complete sample
The greatest limitation for the ETTR team was the lack of available records and mobile phone contact details for the elementary teacher and trainer populations. The team therefore had to build a sample. Records of mobile phone contact details were sought from three sources:

- PNGEI records
- Provincial Education Offices
- VSO records.

However, even between these three sources, a complete record of elementary teachers' contact details was not achieved. As a result, a randomised sampling approach was not possible.

Unreliability of existing records
Unreliability of some of the existing phone contact records which the team were able to access was another limitation faced in developing the sample. During the research pilot, lists of elementary teachers were reviewed by a Provincial Elementary Teacher Training Coordinator and were found to include retired and deceased teachers. In many cases available lists of elementary teachers also did not include contact details. Where contact details were provided, the research team commonly found issues with their reliability, including phone numbers which no longer operated and phone numbers which did not belong to the person stated.

Phone sharing between family members
As noted previously, phones are sometimes shared between several members of the same family. This caused some obstruction to communication with the interviewee. In some cases either the wife or husband of the interviewee did not allow for the partner to be interviewed. In other situations, a family member answered the call but failed to inform the respondent of the expecterd call to be made by the researcher.

Respondents' lack of familiarity with research
Awareness about the research had been raised at provincial level before the start of fieldwork, but there was often no formal announcement of this to the sample population. This was a function of the difficulty of passing messages to many teachers. Many of those contacted had also not previously taken part in a research project. As a result, many respondents had questions for the researchers prior to agreeing to take part. Time was consumed introducing VSO and explaining how the research related to the education system. It is also suspected that this lack of awareness explained why some respondents did not answer research team calls. Despite the explanation that the research team was separate from the Department of Education, some respondents also assumed that the researchers would have answers to their questions about PNGEI and the education department. It was also suggested by the research team that some respondents still believed that the researchers were Department of Education personnel. It is therefore a possibility that an element of social desirability bias

entered into responses to some questions – in particular those where respondents were asked to give self-appraisals.

Researcher fatigue

The length and number of interviews conducted, and the repetition of phrases and sentences in cases where audibility was poor, led to a degree of mental fatigue amongst the team. This was exacerbated by the fact that the team had to work through many unreliable phone contacts, which increased the number of calls they had to make in order to speak to a valid respondent.

How were some of these problems dealt with?

Dealing with researcher fatigue
Organisation

Concerted effort was made to ensure that internal management and organisation was smooth, and put as little burden on to the researcher as possible. Each day a team leader was assigned to oversee the day's work and to lead on tasks such as topping up phone credit and compiling daily reports. The team leader also led a daily team meeting at which researchers could share and discuss issues arising from the day's work.

Balancing fieldwork and other tasks

The allocation of a team leader each day and the daily team meetings were also ways of helping to diversify the researchers' work, in order to avoid burnout. In addition to this, a regular program of training sessions was also introduced in order to help keep motivation high. The introduction of tasks outside of the core interviews – meetings and training – also helped to foster a spirit of teamwork which helped the researchers to support one another. The importance of teamwork in helping the team to perform well and in preventing fatigue should not be underestimated.

Dealing with respondents' lack of familiarity with research
Introducing the research to participants

The research team used two strategies to build awareness of purpose and procedures. The first was sending a text message prior to making a phone call. These advance text messages explained the research and its objectives. In many cases, researchers noted that this was an effective means of stimulating participation – something which has been noted elsewhere (for example Bergman, 2008, p. 140). Using bulk SMS software such as Frontline SMS (www.frontlinesms.com) was considered, but it was felt that it would be more effective to send a message from the same phone as would be used for the interview phone call, so that participants would recognise the number when the call was made. The second strategy was to set appointments for interviews, rather than trying to conduct interviews immediately. This allowed the interviewee to choose a time of their convenience, and one at which they could give sufficient time and attention to the interview. It also meant that the interviewee could move to a location which had stronger network signal, if needed.

Significance of phone etiquette

The introduction that researchers gave to the project was a key ingredient in capturing the interest and participation of interviewees. As mentioned, there was a standardised introduction to the project which gave key information to every interviewee. It was common for interviewees to have further questions before they were happy to take part. The interviewers' patience and politeness in dealing with these was important. The team also noted other forms of etiquette which helped to encourage participation. One was to ensure that calls were made during likely recess breaks: 10-10:30am and lunch hour from 12-1. It was also noted that during Friday afternoons on Government paydays, elementary teachers and officers were mostly in town and unavailable for interview. These periods were therefore often used for administration rather than making interview calls. In order to combat the problem of relatives controlling mobile phone use, it was also suggested that where possible interviewers focus on making calls to those of the same gender – particularly in rural and remote areas.

Investment in recruitment and training

Finally, both the recruitment and training of the researchers focussed on ensuring that they were able to conduct interviews well. Employment interviews with potential candidates included a mock interview, so that the hiring staff could see how candidates were likely to respond in such a situation. Training also included mock interviews, discussions and role-plays of potential difficulties. The daily meetings afforded a chance for the team to discuss ways of dealing with such problems.

Dealing with sampling problems

As mentioned, it was not possible to use a randomised sampling approach owing to the quality of records available. A stratified quota sampling approach was therefore taken. The sample was developed for finding these respondents using a combination of the sources mentioned in the previous section and snowball sampling. The quota targets for interviews per region were set for the mixed mode teacher interviews and the elementary teacher trainer interviews, based on the number of elementary teachers in that region. It was possible for the team to be close to pre-defined quotas in most regions. Where quotas were not met this was primarily due to the unavailability of the interview sample. A breakdown of responses is shown below.

Table 1: Desired and achieved number of interviews per region

Region	Telephone interviews with teachers graduated from mixed mode		Telephone interviews with elementary teacher trainers	
	Achieved	Quota	Achieved	Quota
Momase	72	70	30	23
Highlands	119	111	13	35
Southern	55	70	41	23
NGI	71	63	19	20

In the case of the residential mode teachers, almost all interviews (87%) were carried out in the Southern region. The primary contributing factor was that many of the residentially-trained teachers remain clustered in the National Capital District (NCD) after graduation. Quotas were also set for an even split of male and female participants during the teacher interviews. This was achieved. During the teacher trainer interviews, owing to the make-up of the workforce such a split was not practical. Breakdown by gender was still monitored though, and ultimately 25% of the interviews were carried out with female trainers.

Table 2: Interviews achieved with teachers graduated from mixed mode, teachers graduated from residential mode and elementary teacher trainers, disaggregated by gender – from ETTR research project, 2013

Gender	Telephone interviews with teachers graduated from mixed mode	Telephone interviews with elementary teacher trainers	Telephone interviews with teachers graduated from residential mode
Male	160	76	36
Female	157	26	44

One factor worth noting is that within regions, responses were often heavily reliant on particular provinces – those provinces where mobile phone records existed. These provinces were all rated as being average in terms of their educational performance. It is unlikely therefore that such reliance on specific provinces highlighted either particularly strong or particularly poor performance. However, it does still mean that responses were 'clustered' in the way that face-to-face research often is.

Dealing with problems of comprehension and poor phone network

The team scripted questionnaires in both English and Tok Pisin. Each researcher was able to conduct the interview in the interviewee's preferred language. It was noted by the team though, that even with both of these options available it was often necessary to repeat questions and answer choices. Where comprehension was particularly poor due to the network quality, researchers would rearrange the interview for another date. For future work, it is suggested that the research team include members from each region and that researchers focus on conducting interviews in their home region. We would also recommend that piloting takes place by telephone in order to simulate actual research conditions. In addition, questions should be designed to be brief, with language kept as simple as possible – both in English and Tok Pisin.

Further learning and recommendations from the ETTR telephone research project

In the undertaking of this telephone research the team learnt a good deal about how to effectively conduct telephone research in Papua New Guinea. This section sets out some of this learning.

Equipment and resources required

In advance of setting up a telephone bank, certain simple infrastructural items are required. Each researcher should be given the following.

Quality mobile phone	Laptop	Supply of phone credit	Office space to ensure audibility and clarity of phone conversation
Quality headset	Spreadsheet for data entry	Sample with contact details	

Many of these are obvious, but it is worth highlighting one or two of them further. A good quality mobile phone is an important investment. Particularly when contacting rural and remote areas with poor reception, the audio quality of conversations was not always high. Therefore a mobile phone with good quality, loud speakers offers a real advantage to researchers' chances of clearly understanding participants. The same goes for a good quality headset.

Interviews were undertaken as Computer Assisted Telephone Interviews (CATI). Researchers were provided with a laptop which was preloaded with a spreadsheet designed to make data entry as simple as possible. The spreadsheet had all questions pre-loaded, with one question per column, and for each question a drop-down menu was created which listed all possible pre-coded answers. Therefore researchers simply had to click on the answer given by the respondent. This enabled simultaneous interviewing and data entry which saved a lot of time. Doing so lowered the chances of errors, as data was entered only once into the spreadsheet rather than once on to a questionnaire and a second time into a spreadsheet.

Call rates

The overwhelming majority of respondents used Digicel phones. Calls between Digicel phones are cheaper than calls from other providers, and so we would recommend that researchers use the Digicel network for their calls – at least until there is any change in the volume of use of other networks or the costs of calling between networks.

Importance of developing sample databases

Ideally, if departments, non-government organisations or universities are going to undertake research by mobile phone, databases of phone numbers should be collected and made available to researchers. The collection of phone numbers for headteachers and chairs of Boards of Governors, which could be done through the Department of Education's Whole School Quality Assessment (WSQA) forms, will be a valuable way of beginning to develop such a database. In future, such details could also be gathered for teachers, either through the school census forms or at annual resumption of duty forms. For a program such

as ETTR, where an ad hoc sample needs to be developed, significant time and resources will need to be made available to work on this.

Where is research using mobile phones suitable?

This is a new methodology for PNG research and will not be suitable for all projects. Below, we list some areas where we think that mobile phone research is not yet appropriate.

Not yet appropriate	Appropriate
Work where nationally representative samples are required. Tracking studies and other baseline surveys – unless an ad hoc sample can be reliably created	Exploratory research, and research which looks at uncovering issues rather than making precise measurements Research with a known small population, where access to mobile phone contact details is high
Research which requires asking long questions, or the rating of long lists of statements	Work which requires short, simple answers to a small number of questions

As network coverage improves and databases of contact details develop, there is potential for mobile phones to be used in an even broader set of circumstances and we would recommend that its use be strongly considered by researchers.

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Note on the team: The three authors were all involved in carrying out research to support the Department of Education's Elementary Teacher Training Reform program. During this project the team made use of mobile phone interviews to gather data.

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