Preparing for the Referendum: Research into the Bougainville Peace Agreement Telephone Information Hotline

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Introduction

In late 2019, the people of the Autonomous Region of Bougainville (Bougainville) in Papua New Guinea (PNG) voted in a referendum that offered two choices: greater autonomy or independence (Dobell 14/10/2019; Qvortrup 2019:23). The referendum was required by the Bougainville Peace Agreement (BPA), which was signed by Bougainville leaders and the National Government in 2001 after a decade-long conflict (Bell and McVeigh 2018:1). In the pre-referendum period, there was a strong need for the delivery of a wide range of information to citizens in order to enhance the credibility and legitimacy of the referendum itself (Ellis 2018:ix; Marks 2018). According to Qvortrup:

> for a referendum to produce a credible, legitimate and accepted outcome it is imperative that both the citizens and the authorities clearly understand the nature, process and implications of the referendum (2018:v).

Thus, in the lead-up to polling, it was crucial to 'provid[e] information to voters on the issues and ensur[e] that voters understand the issues' (Bell and McVeigh 2018:21; see also Marks 2018). High levels of understanding about a referendum, its purpose and its procedures can increase the likelihood of a polling outcome that:

> accurately captures and reflects the wishes and preferences of the people, but which is also accepted by all parties and stakeholders involved, regardless of the result (Qvortrup 2018:v).

Yet in early 2019, McKenna (vi) observed that two key risks remained throughout Bougainville: 'inadequate information on autonomy and its outcomes to inform voter decision-making' and 'continued proliferation of misunderstandings about the referendum'.

This Discussion Paper focuses on a telephone information hotline that operated for eight weeks just before polling, allowing people throughout Bougainville to ring a free-call number and hear pre-recorded informational messages about the referendum and the two other pillars of the BPA, autonomy and weapons disposal (see also Regan 2019:114). It reports on research involving group interviews with leaders, women and youths. This research was designed to determine the effectiveness of the telephone hotline in delivering government information directly to citizens; determine whether or not there would be benefits to using such a service in the future; and determine recommended changes to any future iterations.

Overall, the findings show that knowledge of the telephone hotline amongst research participants was generally low. It was discovered that during some of the telephone calls multiple people listened to the audio recordings. As intended, the hotline had been used in places where people have no radio station signal and very limited access to other forms of media. Participants generally thought the hotline should be continued in the post-referendum period. Suggestions were mainly about increasing awareness of the service.

This paper provides a brief history of Bougainville and the context of the referendum. It outlines media and communication access in Bougainville and introduces the telephone hotline. The research questions, research design and findings are presented, followed by a discussion of the research in relation to relevant literature. The discussion section also gives some practical recommendations. Finally, the

conclusion presents the answers to the research questions and provides suggestions for further research.

The Bougainville context

An appreciation of the historical and political context of Bougainville is crucial to understanding some of the challenges of implementing a telephone information hotline. Bougainville is a post-conflict region (Bell and McVeigh 2018:1). From late 1988 (Bohane 2019:7; Eves 2018:5; Regan 2019:19), it suffered from a decade-long conflict. What began as a localised dispute between landowners and the operators of the Panguna mine evolved into an armed struggle between PNG state security forces, secessionist rebels and local factions that wished to remain part of PNG. (For an overview of the complexities, see Bohane 2019:5–8; Regan 2019:19–21).[1] The signing of the BPA in 2001 (Bohane 2019:8; McKenna 2019:1; Oppermann and McKenna 2013; Regan 2019:9) by leaders of the Bougainville factions and the national government (Ellis 2018:3) formally brought the conflict to an end (Bell and McVeigh 2018:1). The agreement was based on three pillars:

- autonomy — establishing the Autonomous Bougainville Government (ABG) through the devolution of specified national government functions and responsibilities,

- weapons disposal, and

- a referendum on the political future of Bougainville, including independence, which was to be held within a 10- to 15-year period following the establishment of the ABG (ABG 2019b; Bell and McVeigh 2018:1–2; Bohane 2019; McKenna 2019; Oppermann and McKenna 2013; Thomas et al. 2017:6).

Since the signing of the agreement, the governments of Bougainville and PNG have been negotiating the implementation of the BPA (ABG 2019b; Bell and McVeigh 2018:2; McKenna 2019:vi). It is noteworthy that the BPA enabled the establishment of the government of Bougainville as a special entity, different from provincial governments throughout PNG. The BPA called for continued dialogue between the two governments in the ensuing years, both up to and after the referendum. Under the BPA, the referendum result is non-binding, with provision for a process of negotiation between the two governments and final decision-making by PNG's national parliament (for more, see Regan 2019:129–40).

In the months leading up to the referendum, teams travelled to communities throughout Bougainville to conduct awareness sessions for groups of people. These activities were organised by a range of actors. For example, ABG parliamentarians conducted awareness activities to ensure that their constituents were 'referendum-ready' (Regan 2019:113). The Bougainville Referendum Commission (BRC)[2] undertook awareness activities in a systematic way, recruiting local 'awareness officers' as part of a broader media and voter awareness campaign. The ABG, through the Department of Peace Agreement Implementation (DPAI) and the Directorate of Media and Communication (DMC), also supported awareness, including through the use of mobile telephones — which is the focus of this paper.

In late 2019, almost 98 per cent of referendum voters chose independence (Bohane 11/12/2019; Lyons 11/12/2019). The two governments are now in negotiations regarding the result of the referendum (Bohane 2019; Bohane 11/12/2019; Dobell 14/10/2019; Kenneth 18/10/2019; Lyons 11/12/2019; Regan 2019:9; *The National* 26/2/2020).

Telephone information hotline

A telephone information hotline enabled people to call free-of-charge to hear pre-recorded information about the BPA in Tok Pisin, a language spoken widely in Bougainville (Thomas et al. 2019:14) and preferred by nearly all people (Thomas et al. 2017:13). Callers were able to press 1 to hear information on peacebuilding, 2 for autonomy, 3 for the referendum and 4 for weapons disposal. Recordings were updated weekly for eight weeks, as it was thought one week would provide enough time for people to listen to each week's messages. Each recorded message was less than two minutes long.

The project's designers envisaged that people would be encouraged to use the service through a single, introductory, pre-recorded robocall from Hon. Chief Dr John Momis, president of the ABG. Weekly text messages (or SMS, short message service) to users announced when a new set of audio messages was available. Importantly, the service was free to use. The project was implemented by the DMC and supported by the Bougainville Partnership[3] in collaboration with DPAI and the BRC. Promotion was undertaken by the DMC through media releases, as well as articles and advertisements through channels operated by DMC, including: the *Bougainville Bulletin* newspaper,[4] Radio

Ples Lain mobile community radio station,[5] Facebook and the ABG website.

Background

In 2014, it was determined that most people in Bougainville, even those considered well-educated, had 'little access to timely, relevant and trusted information that would allow them to develop informed opinions, and make informed decisions and choices' (UNDP 2014:11). Thus, the formation of opinions was 'not necessarily based on accurate information and solid understanding' (UNDP 2014:9). Two subsequent studies have confirmed that there is limited access to media and communication across Bougainville (Thomas et al. 2017, 2019).

In order for government communications, including referendum information, to be delivered effectively, 'the local communications environment is the most salient factor informing the decision as to which channels will be most effective' (Ellis 2018:32). In Bougainville, mobile telephones are the 'main communication tool that transcends geographical boundaries' (Thomas et al. 2017:13; see also Thomas et al. 2019:15). There are about 66,000 Digicel mobile telephone users in Bougainville.[6] This represents one third of the total voting population[7] — a much higher number than those with access to the internet, television and radio stations (Thomas et al. 2019:15).[8] Half of the mobile telephones used in Bougainville are basic handsets with no internet capability (Thomas et al. 2019:15). The limited access to media and communication is in part due to the conflict (Regan 2019:19–22), during which communications infrastructure in Bougainville was destroyed (Eves 2018:5; Marks 2018:8–9; McKenna 2019:37; Thomas et al. 2017:6).

Some of the challenges in spreading information about the referendum included how to reach people with low literacy and limited access to mass media in remote locations. The idea to use mobile telephone-based platforms to deliver information in Bougainville was conceived in mid-2014 in response to low levels of awareness of the BPA and the referendum on Bougainville's independence contained within it. Lack of access to mass media (radio, television and newspapers) was a significant obstacle, leaving many of the region's people ill-informed. This has been well documented (Interpeace 2014; Thomas et al. 2017, 2019). Concurrent with this dearth of mass media was

a mobile telephone network (predominantly Digicel) that covered 85 per cent of the region.

A potential solution came when Jeremy Miller, Media and Communications Specialist to the ABG's DMC, attended a workshop in Port Moresby on mobile telephone-based communication platforms.[9] From the array of SMS and voice innovations discussed, interactive voice response (IVR) systems seemed to offer the best mechanism to address the problem of disseminating information en masse to remote and often low-literacy communities. IVR allows users to interact with system menus through their telephones by pressing numerals on the handsets to hear audio recordings. A key benefit of IVR was that it could make information available to illiterate community members throughout Bougainville. According to Regan, 'more than 50 per cent of the population is illiterate' (2019:113; see also Bell and McVeigh 2018:18; DNPM 2015:17; Thomas et al. 2017:13; Vallance 2008:3–8).

A similar workshop was subsequently held in Buka and attended by the ABG and civil society stakeholders, who explored further options for a telephone service. In 2017, a proposal for the ABG to pilot a free-call IVR information service received funding through the Bougainville Partnership. The project was initially conceived as a pilot of eight weeks to trial how the people of Bougainville would use such a mobile telephone-based platform, whether they would like it and if it was effective for information dissemination. Augmenting the project was independent research to provide feedback from rural and urban audiences at the end of the eight-week-long pilot phase (this report is the result of that process).

IVR has been used as an information dissemination medium in various countries. Of most relevance to the Bougainville case was the use of IVR to disseminate referendum-related information in the months leading up to a referendum in Southern Sudan in 2011 on whether the region should remain a part of Sudan or become independent. In the Democratic Republic of Congo, IVR has been used to provide information about the education system to illiterate parents (Amelina 2017). In the Somali regions, it has been used to provide financial literacy instruction to women (Souktel 2013). In Nigeria, it has been used to conduct polls seeking community opinions, including those of illiterate people (Souktel 2016).

While there are some telephone hotlines in operation in PNG (ChildFund 2017; Highet et al.

2019:39; Putt et al. 2020), they enable conversations between people and do not include pre-recorded audio messages. Thus, the use of IVR for this hotline was a first for PNG and required an extensive development and consultation process with international mobile telephone experts, Digicel and the ABG's Media and Communications Specialist, which was completed in 2018. Even at this early stage, the issue of content — the choice of words in the audio recordings to be listened to through people's mobile telephones — was identified as the key obstacle to implementation.

Message content

In post-conflict settings such as Bougainville, 'the communication sector becomes even more crucial' (Marks 2018:4). Over a year before the referendum, both the Bougainville and PNG governments had already:

> identified that greater public awareness and community engagement on the implementation of the BPA require urgent attention to ensure the credibility, integrity and inclusiveness of the referendum' (Marks 2018:3).

The ABG DPAI was the responsible ministry in Bougainville for the BPA and the telephone hotline project's key partner for developing and approving content. As mentioned previously, the IVR was already groundbreaking in its application of technology to a communications problem. However, the key challenge became developing audience-appropriate, factually correct and appropriately neutral and bipartisan content in the context of the governments of Bougainville and PNG. Drafting the content required deft observance of sometimes competing political interests. The conflict had fractured relationships and divided the clans and families making up Bougainville (Regan 2019:20–21). As a result, the project moved slowly and carefully to navigate these relationships.

The hotline information was drafted in response to frequently asked questions from people around Bougainville. These questions were principally gathered through community-based conversations carried out by the Referendum Dialogue Project run by DPAI and the Peace and Conflict Studies Institute Australia (PACSIA).[10] Over 90 community facilitators recorded their conversations with people about the BPA and referendum. People's questions were crosschecked with two Bougainville audience studies (Thomas et al. 2017, 2019), as well as feedback through DMC's own information channels, including Radio Ples Lain and video outreach programs.[11]

Responses to the questions were written into the IVR script based on pre-approved key messages jointly endorsed by the two governments (ABG 2019c). By the intended hotline launch date, the BRC had come into operation. As such, the 'referendum' stream of content was revised at the last minute to coordinate with the commission's key messages about enrolment and polling. The information in the IVR script included the 'provision of neutral information' (Bell and McVeigh 2018:33), which did not recommend how citizens should vote. It also incorporated 'detailed and critical examination of the issues' (Bell and McVeigh 2018:33) pertaining to the referendum and its context, such as weapons disposal. A key intent of the system was that the wording used would present consistent messaging simultaneously across Bougainville's three regions, thus aiming to address 'incorrect or misleading information about the referendum [which] could diminish the good efforts that have been made to engage "outlying factions" in the peace process' (McKenna 2019:36).[12]

Due to changes in personnel and as an indication of the highly sensitive pre-referendum political environment, the messages went through no less than 12 revisions over a two-year period before receiving final approval, being translated into Tok Pisin and recorded. The messages were recorded using both male and female voiceover artists and were audience tested by the DMC prior to finalisation.

Usage statistics

Data provided by Digicel indicates that during the eight weeks of the hotline's operation, 79,254 calls were made to the service from 11,222 different telephone numbers. In the first week of operation, 41,295 calls were made to the service. In week two, usage dropped by over 50 per cent to 17,582 calls. As shown in Figure 1, the number of calls received continued to drop each week.

The service was contracted to run for eight weeks, from Sunday 22 September 2019 to Saturday 16 November 2019. In Figure 1, a ninth week is shown because the hotline continued to be available and receive calls up to and including 25 November. During the extra nine days, 1949 calls were made to the hotline, indicating that some people had noted or memorised the toll-free telephone number and continued to ring, despite no promotional SMSs being sent.[13]

Figure 1: Telephone calls to hotline per week
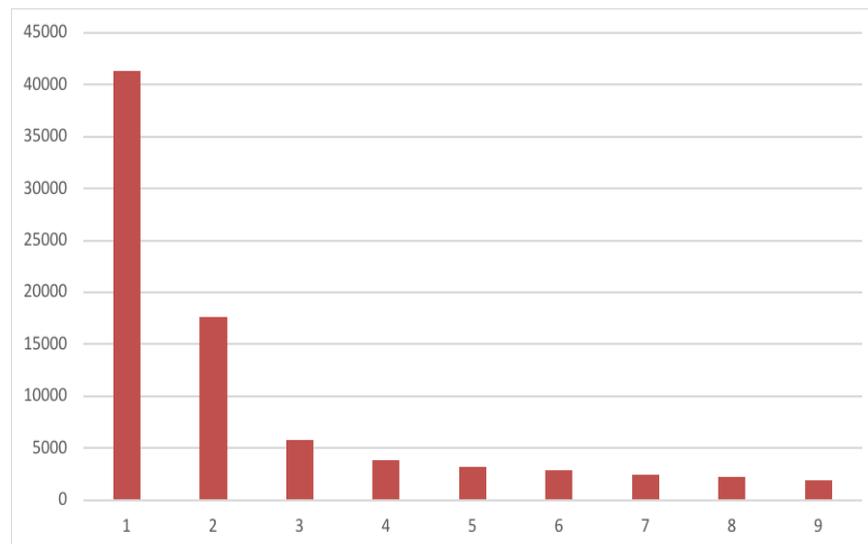
Research design

This paper presents the findings of the research conducted, with a focus on the telephone hotline. Three key aims formed the basis of the research approach:

1. To determine the effectiveness of the service in delivering government information directly to people,

2. To determine whether there would be benefits to operating a hotline service in the post-referendum period, and

3. To recommend any changes to the service.

These aims informed the questions asked of participants. The first aim generated questions about knowledge and use of the service, such as if participants knew about it, used it and/or discussed it with their peers. The second aim enabled discussions about information needs in the post-referendum period and whether or not participants felt a hotline would be useful. The third aim was intended to allow participants to provide feedback about the telephone hotline, including any recommended changes to the service.

The research was conducted from 4 to 16 November 2019, when the hotline was in weeks seven and eight of operation. This was also during the immediate lead-up to the referendum polling, which was conducted from 23 November to 6 December 2019. Eight group interviews were conducted by the principal author with local community leaders, women and youths. The research was conducted in the three regions of Bougainville (South, Central and North Bougainville). One of the locations was a rural area, while the other two were urban. In the urban locations, some research participants travelled in from outlying villages. On average, there were five people per group, with a total of 42 people participating in group interviews. Discussions were primarily in Tok Pisin, though on some occasions participants used words or phrases in English. In one case, notes were taken during the discussion because participants chose not to give permission for the use of an audio recorder. For the rest of the group interviews, an audio recorder was used and the discussions were later transcribed verbatim.

A group interview (also often known as a focus group) is 'a form of interview but with several people' (Bryman and Bell 2008:472) that is facilitated by one or two researchers (Tacchi et al. 2003:78). Group interviews can generate rich information (Tacchi et al. 2003:76), in part because they allow for debate and disagreement. When participants disagree, they tend to justify their position, thus perhaps saying more than they would in a one-on-one interview (Bryman and Bell 2008:523–25; Neuman 2014:472; Tacchi et al. 2003:76). Participants in group interviews can also contribute more ideas and thoughts than they might in one-on-one interviews because they can be inspired by and build upon the ideas of others (Fife 2005:95; Tacchi et al. 2003:76–81).

Group interviews 'tend to be exercises in qualitative research' (Bryman and Bell 2008:214). Qualitative research focuses on 'seeing through the eyes of the people being studied' (Bryman and Bell 2008:416) and

presenting these perspectives or viewpoints. Qualitative research aims to give an 'account of social life from the viewpoint of the people who live it every day' (Neuman 2014:218). As group interviews tend to be qualitative in nature, 'this means that they are explicitly concerned to reveal how the group participants view the issues with which they are confronted' (Bryman and Bell 2008:510).

The sample size used in this study was suitable for qualitative research, which generates rich data, including insightful quotes. When using the group interview technique, 'a typical study uses four to six separate groups' (Neuman 2014:471); thus, this study exceeded the recommended number of group interviews. Travel to the three regions of Bougainville and the inclusion of rural residents in the sample were both appropriate sampling measures in the local context.

Separate group interviews were intentionally organised for women. Generally, across PNG, women tend to be 'less well represented in public forums' (Kaski et al. 2014:140) than men, and a variety of factors, such as discomfort and a lack of opportunities, can make it difficult for women to share their views in mixed-gender settings. It is valuable to hear women's voices and perspectives, particularly in Bougainville, because:

> most Bougainville communities are matrilineal, which translates into a rather powerful social status for women, and … women played crucial roles in the transition from war to peace in the local contexts (Boege 2018:123).

The strategy of establishing separate group interviews for women seemed appropriate given that 'male and female spheres are to a large extent separate in Bougainville society' (Boege 2018:123). Additionally, a clear gender difference had been found in the understanding of key issues of the BPA, with women having lower knowledge levels than men (Thomas et al. 2017:35). Because the telephone hotline aimed to help fill such knowledge gaps, it was important for this research to incorporate women-only groups. Benefits of this approach included foregrounding women's perspectives, allowing women to feel free to share their views, decreasing the risk of self-censorship and reducing the likelihood of retribution from a woman's male partner or male relatives based on her comments if made in a mixed setting. The researcher who facilitated the group interviews was female.

One challenge of facilitating group interviews is taking group dynamics into account (Tacchi et al.

2003:76), particularly when conversation might be dominated by certain members of the group. To address this dynamic when it arose, the researcher asked if other participants wished to contribute, encouraged other points of view (Bryman and Bell 2008:525) and, on occasion, invited participants 'to comment on each other's comments' (Tacchi et al. 2003:77). Despite such challenges, group interviews can afford the collection of rich data. In this case, this data collection method was deemed ideal for assessing the perceived value of the telephone hotline because it enabled community members to discuss relevant issues amongst themselves.

Analysing data generated by group interviews can be challenging because 'a huge amount of data can be very quickly produced' (Bryman and Bell 2008:525). In this case, the data analysis process began in the field because it is common and desirable for it to occur during qualitative research (Tacchi et al. 2003:37); 'as we gather data, we are simultaneously reflecting on it and generating new ideas' (Neuman 2014:204–205). During and after the field research, detailed transcripts of the audio recordings were made (Bryman and Bell 2008:513–14; Tacchi et al. 2003:78). The next step involved listening to the audio recordings again whilst reading through the transcripts. In an iterative process, participant quotes were identified as being either important to the participants themselves or relevant to the research aims (Tacchi et al. 2003:42). This approach was employed because it is important to listen for points given emphasis by participants, to consider the magnitude of the ideas 'for the lives of the people you are studying' (Bryman and Bell 2008:594) and to search for material that is relevant to 'the research questions and the research literature that [has] driven your data collection' (Bryman and Bell 2008:594). Identified quotes were grouped together and juxtaposed against one another in an effort to understand how they related to the research aims, whilst at the same time ensuring that the ideas emphasised by the participants were given due weight.

The interview quotes included in this paper use the participants' exact wording, usually in Tok Pisin, in order to adhere to the authenticity of the spoken words and enable 'a more accurate reading of the meaning' (Vallance and Lee 2005:5). At the latest possible stage in the writing process, the quotes were translated into English. Quotes presented in the findings section are verbatim, though some fillers such as 'um' and cases of repetition have been removed for clarity. Twenty-seven uses of 'eh?' were removed from interview quotes

because it did not change the meaning of the sentence and was typically used at the end of a word or phrase, perhaps to encourage others to agree.

Human research ethics clearance was granted by The Australian National University prior to the commencement of the research. A thorough informed consent process was undertaken with each potential participant (Banks and Scheyvens 2014:164–65). Those assisting with organising the groups were asked not to pressure people to attend (Banks and Scheyvens 2014:172–74; Vallance 2008:4–5). Potential participants were given a full explanation of the research aims and processes verbally in Tok Pisin and also in written form in English. Information sheets contained the researchers' contact details. The voluntary nature of participation was emphasised (Banks and Scheyvens 2014:164). People who chose to participate agreed by signing consent forms. No incentives were given to participants, though light refreshments were provided in all cases and for those who travelled on public transport to and from the venue, the cost of this travel was reimbursed.[14]

Participants were assured that their confidentiality would be maintained during the presentation of research findings. However, a participant's identity may have been known to other participants during group interviews, and thus confidentiality could not be assured in that sense. Apart from the participants, only the primary researcher was present in discussions. Effort was made to ensure that other people, including children, were not within earshot while discussions were underway.

Research findings

This paper reports on findings from eight group interviews. Of the 42 people who participated in discussions, five did not own mobile telephones at the time of the research. Thirty-seven participants owned mobile telephones, one of which was a bmobile telephone.[15] This precluded the owner from accessing the hotline, which was available only to Digicel users. Many of the handsets in use were basic mobile telephones rather than smartphones.

Local leaders assisted with inviting people to the interviews. Attendees were given a detailed explanation of the research and it was emphasised that they were free to leave if they did not want to participate. Broadly, groups targeted were women, leaders and youths. Three of the eight group interviews were organised specifically for female participants to share their views with no males present, while the other five discussions included both male and female participants. In total, there were 25 female participants and 17 male participants.

The research sought to address three key aims. The findings regarding each of these aims will be presented in turn here.

The first aim: the effectiveness of delivering government information

The first aim was to determine the effectiveness of the service in delivering government information directly to people. Overall, awareness and usage of the telephone hotline was low, as is shown in Table 1.

Knowledge of the telephone hotline was generally low. As one participant explained:

> For the phone service, I can say, we do not get it here. We do not have this service here. Yes. Awareness here, it happens when we walk. We walk on foot … This phone service, we do not know about it. I was also surprised when I saw it here [indicating information sheet]. Because we just talk to give awareness to all the people.

Frequently, people did not know about the service. It was common for those who did not know the telephone number to note it down during the group interviews, usually towards the end or immediately after. One participant felt concerned that most people were not aware of the telephone hotline:

> My heart feels sorry for all the population, you know? The ones that, most of the people are not, um, they're not aware of this phone message now.

The following two quotes indicate suggested reasons people might not have been aware of the telephone service, including insufficient mobile network coverage and not owning mobile telephones:

> I live far away in a village. Sometimes the network does not reach us. So, I don't have a mobile too. That's a problem.

> And also, plenty, majority do not have a mobile. And if you don't have a mobile, you don't know what is happening now here. This is a problem.

The cost of mobile telephone handsets was raised, particularly in a rural area of South Bougainville:

Table 1: Participant awareness and/or usage of the telephone hotline

Level of awareness and/or usage	Number of participants
Not aware of and not used	17
Aware of (received SMS or heard mentioned) but not used	12
Called one time only	6
Called more than once	4
Listened on someone else's telephone through loudspeaker or amplifier	3
Total	42

They all have mobile phones, but it is all people who can afford to buy and own them [who] have them. But I feel concerned for all the people who cannot afford.

When they all bring [handsets] to the village, they sell them for more … Here is very expensive. The people cannot afford.

An initial, automated robocall to all Digicel mobile telephones was intended to inform users about the service. President Momis' voice was recorded reading a script in Tok Pisin about the peace process and heard by those who received and answered the telephone call. His message introduced the telephone hotline and encouraged the listener to ring it. Of the 42 research participants, only four recalled receiving the telephone call, three of whom were in North Bougainville, based in Buka. One reason some participants may not have received this initial telephone call is that it is common for people's handsets to be turned off due to a lack of battery power. It was observed that a number of people arrived at the group interview venues with no battery charge in their telephone handsets, and some charged their handset batteries during the interviews. As one person said:

Some old people, they don't have a place where they can charge a mobile phone.

Those who received the incoming call with President Momis' voice were pleased about it:

I heard. One time, I was walking to go to an office and my phone was ringing. So I thought it was a phone call for me and when I switched it on, I heard President Momis talking. And I said, 'Oh, thank you very much president. Welcome. Talk to me.' … He talked on the BPA alone. He was talking on the BPA, Bougainville Peace Agreement. Up until he finished and I switched off the phone. 'Thank you very much for listening' now, and I switched off the phone … I did not ring. I just, my phone rang and I said, 'Ooh how special am I? President Momis is calling me at this time of the day' [laughs]. Yeah, so that was nice.

And the same too for me. I received a call. The call came, I answered and then I heard President Momis talking, so I have to pause and I stopped and I listened. I felt that the message was very important.

In most of the group interviews, people were surprised to learn about the initial planned telephone call. In Central Bougainville and South Bougainville, there was a view among the participants that the call had not reached anyone there, because they had not heard anyone discussing it. The following comment was made during a group interview in Central Bougainville and there was general consensus on this point:

If people here had received this, it will be heard, we would hear talk, rumours on the street. 'Hey, what?' Everybody will be talking about this thing. But up to now we have not heard one [talk] about this.

In a group interview in South Bougainville, a similar

sentiment was expressed:

> No one who has a phone has talked about hearing John Momis' voice through the phone.

There was disappointment that people had missed out on the telephone call, as one person articulated:

> I am sad about this that President Momis talked but then all of us, we were not aware about this message.

Weekly text messaging (SMS) was used to promote the availability of each week's new audio messages. About two-thirds of the mobile telephone owners who participated in the discussions had received SMSs about the telephone hotline. Roughly one-third of mobile telephone owners had not received the SMSs. In one group, the assertion was made that SMSs had not been received in recent weeks and other group members agreed with this statement.[16] Numerous people spoke about having received the SMSs but not having taken any subsequent action, as these quotes explain:

> Sometimes we are busy — I just look and I say, 'Oh, one message', then I go wash a piece of fabric, or something like that. [Laughs.] 'Oh, I will cook first'. When I cook, I forget. [Laughs.]

> We were cruising, a message came in, I just looked and I went to get another thing with all my friends.

> I received [all the SMSs]. I received but there was no time [when] I sat and listened to this. Because I have, I tend to be busy with attending awareness or all church activity. I tend to do church work. And I go to all sports or where people are gathering. They organise these [events], yes. I regularly go to these kind of things.

Some people chose not to ring because they felt they were already sufficiently aware of the upcoming referendum:

> We have received enough information to be aware. And we are ready to vote. Put 'x'. There are no doubts, and [we] look ahead to putting 'x'.

Another person chose not to ring because she assumed that the same information would also come through other sources:

> I thought, 'I think they will give us more information later'. Like, you will get it through the *Bougainville Bulletin* or *Post-Courier*. Or like public awareness. All campaigns around about yeah.

Those who knew about the service had often made just one telephone call. As one participant explained, 'I did not listen to it in full, because I was busy and I just turned it off'. Others also talked about ringing just one time, but not being inclined to ring again. Here is an example of this sentiment:

> Me too, I phoned this number here, but I heard but I felt busy to do all other work and I thought it was less important for me. So I did not whatever again, dial again … I pressed 1 and 2 but after, when I heard it go, I had no interest in [it].

One contributing factor to this may have been that people often did not realise that the audio messages changed weekly. Another participant described his experience of ringing once:

> I called and I heard a short message. The voices were both male and female. I heard short messages. There was not really enough information. I called once only.

Others had telephoned the service repeatedly. For instance, one participant realised that the messages changed weekly and deliberately telephoned each week. Here are some examples of people's reflections about their experiences:

> My phone is on, usually on 24/7 so it comes plenty of times and I ring back and listen to the voice of the president giving clear [information] in Tok Pisin. I am aware of it. And I value, we do, it's a good thing, like it is information which we all need.

> I called plenty of times. We called plenty of times and we listened. All of this information, some information we heard like all, I heard like [sighs twice] or what, U-Vistract. Some [information] like U-Vistract Me'ekamui this I, they sent it through. We pressed this and we heard this, like all U-Vistract Me'ekamui find it hard to give their arms, mmm, all find it hard. Yes. We were, I heard this, this information did come.[17]

During discussions, evidence emerged of people using the hotline in groups. This was commonly done by a mobile telephone holder activating the speaker function on the handset, as explained in these quotes from three different group interviews:

> We put it on loudspeaker and we heard.

My father, every day he puts this referendum awareness, he turns it on. And I tend to stay outside or stay outside of the house or I stay in the kitchen or I am busy near my father's room [and] I tend to hear. All talk comes on the phone, on the referendum.

All my children, they usually ring this and women or men tend to talk.

Innovative uses of the hotline were evident, with one local leader describing how young people in his community connected a mobile telephone to a large speaker, enabling numerous people to listen at once. As he outlined, messages were played repeatedly:

They turned on a phone [and] I heard. One whole day, same message, they repeated, while we sat. [Pause.] They connected to solar and they just turned it on … Put it to a boombox. Connected a mobile to it [and] it became a special speaker.

To further explore the community's awareness and use of the hotline, participants were asked whether there had been any discussions about the service amongst their peers. In those groups who were not aware of the service, they did not recall any such conversations. Others were aware of the views of their peers:

Plenty of people, who are my friends, they call. They dial this number and they listen. Plenty of them. And we're happy. It's good.

I think everyone likes it. We have one man who works at Porgera at the mine, he came to the village and he received this message. He phoned this, dialled this number, he received information [and] he was very happy. And he said so.

A male village leader in South Bougainville had heard favourable feedback on the service in a rural area:

I went to a rural area, I heard the young men who own phones and they told me, 'This is how we get all the information'. This is one powerful media now.

One participant talked about how he had shared the information he heard through the hotline with others:

I phoned this number often and I usually hear Momis' words. It's clear. Just a clear expression of everything to do with the peace agreement. [Pause.] I, I am one person who listens to Dr Momis. And when we hear it like that, we get

information, we take it. Like that. If I hear, then I must, I must strengthen my resolve and in the village [I] must share this talk I've heard.

One male leader reported that he had made an effort to pass on information about the service itself to others:

When I get this text message, they regularly text, and it says, 'You ring this number', I tell plenty of people, 'You ring this number [and] get information'.

Others reported that there was no reference to the hotline in the awareness sessions that were conducted in their communities. This person said it was not mentioned:

From the awareness teams, there's not one time you will hear them mention this hotline number.

The second aim: determine potential longer-term benefits

The second aim of the research was to determine whether or not there are benefits to operating such a service longer-term. Because the hotline was in operation in the weeks immediately prior to the referendum, discussion focused on what participants thought should happen in the post-referendum period. When asked whether the service should continue after the referendum, participants repeatedly said they thought a hotline should be offered, as these comments from various group interviews indicate:

Post-referendum, we're not clear. So this service will help to really share about it, give us information about what's going to happen. How long will it take? Young people are, that's what they're all afraid of. What's going to become of them? Beyond 2020. So, this phone service, we really need it. It must continue to go to explain to the people all the post-referendum issues. That's my view. It must go on yet.

I like that this mobile system, I just want to say, continue on, after the referendum, should continue on, so that we can get all the information around what's happening after the referendum. They can continue on.

Information must come through this. Because this is an easy way to get information.

When arguing for the service to remain in operation post-referendum, one participant pointed out that

sometimes people conducting awareness may add their own interpretation or perspective to the information conveyed. Thus, the hotline's consistent messaging was seen as a benefit:

> For this free-call, it's one message covering the whole province. Same message. Where another man has not put his ideas onto it. Like that and we want this to continue.

The service being free-of-charge was also viewed as beneficial by participants:

> And a good side about this thing too, one is like, when we ring back, it's like there's no charge for it. We can call without a unit. Yes. It's a good service you set up, ABG we set up. We, it doesn't need units or whatever. We can ring back and hear this whatever you give, update.

> This is the number you can ring and get free information. So, phone, it's good for all the youths. Radio, as this man here said, it's good for the old people who stay in the village. Those are, those who need this information are the youths. The phone service must continue to go yet.

Interestingly, a number of people who had not heard of the hotline prior to attending a group interview thought it seemed to be a valuable mechanism for disseminating information and said it would be useful in the post-referendum period. There were no comments explicitly suggesting that a telephone hotline should not operate post-referendum. It is important to note, however, that participants were not asked to consider the opportunity cost of the service. It is not known how participants would have reacted if they had been asked to think about a context of limited available funds and whether or not to continue the service if it meant that other services would not be offered or existing services would be scaled back or terminated.

The third aim: possible recommendations

The third aim of the research was to discover any recommended changes to the service. Suggestions directly related to the hotline itself generally fell into three categories: mechanisms for feedback and questions; promotion of the service; and technical competence. Four other participant suggestions will also be noted here. A related issue discussed in detail in the group interviews was mobile network coverage. Comments and suggestions related to this issue are also

included here. Finally, this section briefly addresses suggestions made by participants about the use of other mediums for information dissemination.

The addition of mechanisms for providing feedback and asking questions was suggested. One participant in particular was very keen on this idea, saying:

> I think if it's liked, I could talk back to it. Yes. And ask something to give more information again … If we have some kind of question or input, we can text and it can go back again. And they can see our texts there and put something, our concern.

Promotion of the telephone hotline was of concern to some group participants. Two such suggestions were made in Central Bougainville:

> In schools, they could have a place like, where they usually go for assembly, so they can have a special time for this. When they want to get information, so my principal or whoever is responsible at that time, they can turn on and [listen] with the students, because they're our future.

> And one thing too, I think there should be all notices. Or show it on the screen: 'for more information, dial this number', or put notices where the public can see. So while, you know, waiting for a bus and, 'Oh, free-call', and I will just ring.

One group interview in particular involved a lengthy debate about how the service could be better promoted. Participants were keen on the idea of promotional events in key locations around Bougainville in public places, possibly including sporting tournaments or other activities to attract attendees. It was submitted that the audio messages could be played through speakers, but a preferred option seemed to be showing videos using the audio messages and images on a screen. Referendum songs were alluded to, and giveaways were also recommended:

> Regarding the youths … some of them won't be bothered to dial this number. But if you can put all this to some SD cards[18] and try to do a promotion at this time, where they can use them and put it to a boombox and they can hear whatever it is.

Some participants cited people's competence using mobile telephones as a possible challenge. Here are some

of the ways this was explained in two different groups:

Some people don't know how to do texting. [If] a message comes in, they won't go to the inbox and check what message came. They just receive calls and ring.

Some of our older people don't know how to call numbers or go to the phone's channels.

After a demonstration of the service by the lead researcher, one group member said:

I think it's a good service for the people. But one thing, some people with phones, I don't, even me myself, I am not clear on how to follow this information, the way we pressed all the numbers and that.

Four other suggestions were made regarding the telephone hotline. One was that the service should have commenced earlier. The second was that people wanted 'full information' from the service, the implication being that the messages were too brief or lacking in detail. The third suggestion was that the service should have been offered throughout PNG, not just in Bougainville. Finally, a comment was made that a schedule should have been made available before the service commenced. On the latter point, this may be related to the fact that the messages were changing weekly and people were not aware of this. It may also reflect a lack of awareness of the service being available at all times of the day and night; on at least one occasion a participant asked what time to ring.

The issue of mobile network coverage being poor, patchy or non-existent in some areas where people live was raised repeatedly throughout the discussions. As a respondent explained:

Most of the population is outside of coverage, network coverage. So plenty don't get service through these phones.

The following experiences were shared by two rural women in different group interviews in South Bougainville:

We usually carry our phones around and find places with network.

I'm one, I don't know [about the telephone hotline]. Because where I live, it's not whatever. I tend to go up a hill and get, find it … Exactly where I live, there's no network. And I stand

up, leave the house and go up on foot and find network. So I don't know.

A related issue is sporadic mobile network coverage due to outages. This was mentioned and discussed in several group interviews, particularly in Central Bougainville, as can be seen in the following participant comments:

And here too in Arawa the network is often on and off, on and off.

It's not just me, but everyone faces this on and off … Sometimes it can be for two days or three days without network. That's our problem here.

A big thing for us here is that the communication regularly breaks down. Some of us run our business online. [If] it's not working, they'll wait for us. Later, they'll tell us, 'Oh I waited, waited and it didn't work'.

Nowadays the network goes on and off. Like it'll be on for some hours, later it'll be off for some hours. It just plays up. This is another issue here in Bougainville.

Intermittent coverage was also raised as an issue in South Bougainville:

Most of the time, all the towers are off. Yes, for one week or two weeks … It can be almost one month. [Others murmur with affirmations.] That's the fact, that's what we face here.

Referring to the telecommunications tower closest to her house, one participant explained that it operates only during daylight hours:

In the afternoon it'll be six o'clock, 6pm, [and it'll be] totally out. Because the tower where we live, it's solar panel controlled.

There were calls for the quality of mobile network coverage to be improved. As one woman suggested in South Bougainville:

One thought is, Digicel can [someone else says 'yes'], yes, it can improve its what [someone else says 'its service'], its service, that's right, Digicel [can] improve its service. Because those of us in the village, we rely on phones, mobile phones. Public servants too, they use phones, on their pay day. Yes. And sometimes they struggle when the network is down. [Pause.] We have a request for

Digicel to improve its service. […] [For the public servants,] when pay day comes around, they use SMS to do transfers and they use EFTPOS[19] machines at the stores. They struggle to buy things at the stores when there's no service.

Another suggestion was made in Central Bougainville:

When PNG Power is off, bmobile is off too … That's something too that we want, like, we must have a standby generator.

For those towers that rely on generators powered by fuel, regular fuel supply can be an issue. One participant said that the supply of fuel to Bougainville by ship can be unreliable:

We regularly have a fuel problem here. Fuel shortage in Arawa. Every, fuel comes and goes, comes and go, [and] runs out. We don't have a good supplier coming to Arawa [with] fuel service.

In the same group interview, the difficulty of navigating poor quality roads from Arawa to tower locations was raised, and a suggestion made to address this:

I think we need to sort out the roads, so suppliers will easily go and do their work.

Another contributing factor to poor quality mobile network coverage mentioned was the vandalism of towers, which, in some cases, was viewed as being linked to landowner disputes at tower sites:

Before, it was okay because we had solar. Now it's like, whatever landowner issue and they just remove the solar [panels] and we go to just using the generator. Before, when the generator was not operating, it would just continue with solar.

Other mediums of information dissemination were discussed. Face-to-face awareness sessions were referred to in detail. As one participant explained, awareness sessions about the referendum were being conducted at the time:

On Tuesday, I went to an awareness on how to vote. That's all. Some youths were tasked with coming to run it. And the amount I saw when I went on this day was a very, very good attendance. Which, I heard, it's almost in every VA [village assembly]. Everyone wants, they are very interested to know the process of how to vote. So I was very happy, when I saw the whole community, even those from far off, three to four

hours' walk, they did, they made the best to come and attend the awareness.

A participant in another group described how referendum awareness had been conducted in four phases:

Everyone is aware that we'll have a referendum. Because now we're near the pointy end. [Noise of affirmation from another group member.] In phase one, awareness started. Phase two awareness has finished. Phase three awareness has finished. Now we're in phase four, awareness is going on yet. So I can say that everyone has whatever. [Another participant says 'knowledge' and someone else says 'fair idea'.] Fair idea what's going to happen. For me, I see, when I go around with awareness teams, it seems that everyone has [the required information].

In contrast with the view that everyone had been informed well, the following comments made in two different discussions indicate that some people were concerned the awareness sessions had not been conducted in remote places:

Everyone has good understanding in the areas where we have done awareness. And because we take, like, use media, we usually go with short films and everyone understands, in those places. But I believe that in the areas where we went last year, this year, everyone has good knowledge. But I just have a concern about the areas, because we don't cover every little area.

My ward is ready. So, regarding this [points to telephone], whatever referendum awareness, we are aware of everything, in mine. I don't know about all people in rural areas. Places far away.

Other mediums of information dissemination mentioned included large video screens, radio stations, television and newspapers. In both South and Central Bougainville, a strongly held and frequently expressed view was that radio station signals should be improved.

Summary of key findings

Overall, these findings indicate that knowledge of the telephone hotline was generally low. Those who knew about the service fell into the following four categories:

- Aware of the hotline but did not ring due to a lack of interest, being too busy or feeling already knowledgeable;

- Called once;
- Called repeatedly; or
- Had heard the recorded information when someone else telephoned the hotline and played the audio through their mobile telephone handset's speaker or a larger loudspeaker.

The hotline was utilised by some people in places with no available signal from radio stations. Participants generally thought the hotline should be continued. Suggestions were mainly about increasing awareness of the service.

There was much discussion about the need to improve mobile network coverage. Participants argued that network coverage is weak and inconsistent, with no coverage in some villages. There were also requests for improvements to other communication mediums, particularly radio broadcasting. Referendum awareness had been completed thoroughly through verbal group sessions. Most participants felt they had sufficient knowledge about the referendum, that there was good overall knowledge amongst community members and that people were ready to vote. Other mediums mentioned through which people had access to information included large video screens with speakers in public places, radio stations, television (mainly in Buka), newspapers, Radio Ples Lain, Facebook, the *Bougainville Bulletin*, documentary movies and paper materials (posters and pamphlets).

There were no striking differences between the responses from younger or older people, or men or women. For instance, there was no clear distinction along demographic lines regarding who was more likely to be aware of the hotline. Differences were noticeable, however, between the three regions of Bougainville regarding access to mobile network coverage, as well as access to other information and communication mediums. For example, in South Bougainville, participants reported substantial challenges with the quality and reach of mobile network signals and said that they had almost no access to radio stations, newspapers or television.

Discussion

As Hogeveen argues, there is a trend in the Pacific region towards 'digital aid' (2020:11–12). This involves international donors utilising information and communication technologies 'to provide international assistance more efficiently and effectively' (Hogeveen 2020:4). Similarly, Chand contends that, given limited access to radio, textbooks and other information sources, the utilisation of digital technologies could allow Bougainville to 'leapfrog the use of existing communications technologies in the delivery of primary education, basic healthcare and information services' (2018:21). In the case of the telephone hotline investigated here, donors worked in partnership with the ABG to harness recent rises in access to mobile telephones and civic demand for information.

The design of the telephone hotline was in line with published guidelines for the strategic use of mobile telephones in PNG (Watson 2014a, 2014b). The guidelines suggest that the 'distribution of mobile phones is not recommended' (Watson 2014a:1). As such, this concept did not require handset distribution, but instead allowed for people around Bougainville to use their existing devices. There is also a recommendation that 'simple technology' (Watson 2014a:2) should be used. In this case, the service needed to be suitable for people with low literacy, numeracy and technical skills; therefore, the system was relatively simple to use, with four options of audio messages to listen to. The guidelines further stipulate that 'rigorous research is constructive and highly recommended' (Watson 2014a:2); the research presented in this paper aims to address this need.

The availability of mobile telephone credit is a huge barrier for telephone users throughout PNG, due to both affordability (Highet et al. 2019:8; Watson 2014b:13) and logistical challenges locating a place or method to buy credit (Watson and Duffield 2016:275). To accommodate this, the system was designed as a free-call service, and some research participants commented that this was beneficial.

If there are to be future iterations of a telephone hotline in Bougainville or similar projects elsewhere, promotion of the hotline needs to be carefully planned. It seems likely that multiple, concurrent methods should be used to inform citizens about the hotline. In the case of this hotline, the principal point of promotion was mobile telephones, the same means through which people would access the service. The project design included a launch consisting of an initial SMS to all Digicel handsets in Bougainville indicating that a telephone call from the president would be coming on the same day. The telephone call was to go to all Digicel telephones, so that users would hear the president's voice informing them about the hotline, explaining its purpose and encouraging them to ring.

Most participants in this research owned and used Digicel mobile telephones, but had not received the introductory telephone call. From the feedback, it is clear that the robocall technique, which was a first for Digicel PNG, did not in fact reach all handsets for a variety of reasons. This implementation failure likely had a direct negative impact on awareness levels. Any outgoing telephone calls, such as the one with the president's voice, should be made repeatedly until they reach the intended telephones.

Similarly, Digicel users should have received regular SMSs about the hotline during the eight weeks, but a sizeable portion of mobile telephone owners amongst the research participants did not recall having received any (see Table 1). It is unclear why some users did not receive the SMSs, but it may have been due to their mobile telephone handsets not being able to receive SMSs at the times they were sent. The reality is that many mobile telephone handsets are not turned on or receiving network signal at any given time due to sporadic and patchy mobile network coverage (Kaski et al. 2014:144; Thomas et al. 2017:12; Thomas et al. 2019:15), on-the-ground challenges of recharging mobile handset batteries (DNPM 2015:45; Highet et al. 2019:23; Thomas et al. 2017:12; Thomas et al. 2019:14; Watson 2014a:2)[20] and the costs associated with battery recharging (Marks 2018:9; Thomas et al. 2017:12). A system able to re-send SMSs that have not been delivered would be ideal. Evidently, the Digicel system did not indicate whether or not messages had been delivered or re-send failed messages. This technical limitation was not anticipated during the design and contracting phases.

Participants argued for the need to increase awareness of the service. In one group in particular, participants enthusiastically envisaged launch events at which SD cards of audio files could be given away. In future, it may be possible to integrate a hotline into a broader communication strategy. This would allow for cross-promotion across media platforms. For example, the hotline number could be displayed in the *Bougainville Bulletin* and announced during Radio Ples Lain broadcasts, while the *Bougainville Bulletin*'s distribution dates and the schedule for Radio Ples Lain could be mentioned in the recorded information on the hotline. Inter-agency promotion may also be possible. For example, agencies that could promote one another's materials and activities could include the ABG, PACSIA, the post-referendum transition taskforce and

others. In short, a hotline could be a useful information dissemination tool for the post-referendum period, particularly if it is integrated into a comprehensive communication strategy.

A hotline could also augment face-to-face engagement by providing consistency of information. Hearing consistent information from multiple sources is key to building the credibility of public communications. Some participants reported using the service in a communal setting, where they listened in family or community groups. Suggestions were made about scheduling sports events at which the information messages could be played through loud speakers. Similarly, it was recommended that school teachers could play the audio messages during assemblies. Perhaps future projects could be linked with listening groups at schools, churches, sports clubs, health clinics, libraries and other community locations in order to generate discussions and increase the impact and relevance of the messaging.

Effective communications are vital to peace post-referendum, as 'social divisions can be opened by a referendum campaign' (Bell and McVeigh 2018:viii), particularly in societies 'that have already experienced conflict' (ibid.; see also Marks 2018). It has been recommended that in the post-referendum period in Bougainville:

> parties should prepare to reach out to those who have lost with measures for political inclusion and to provide for generous settlement of citizenship questions that arise from the result (Bell and McVeigh 2018:46).

It may be that a hotline service could be one way to achieve this recommendation.

Many people telephoned the hotline only once and then did not ring again. This could have been the result of a combination of promotional, technical implementation and message design flaws. It is possible that the extensive delays during the drafting and approvals process meant that implementing the project in the weeks immediately prior to the referendum was simply too late. Respondents stated that they had already received adequate awareness and felt prepared to vote. Perhaps in this saturated state they simply did not feel the need to use the service. Though there had been 'frustrations with the lack of information on the process' (Bohane 2019:11), the deferral of the date of the referendum itself 'allowed more time for preparation' (ibid.), including

information dissemination. Indeed, by late September 2019, all members of the ABG parliament declared their constituencies 'referendum-ready', which incorporated the achievement of several goals stipulated in a 2016 ABG resolution, including having an informed citizenry (ABG 2019a; Bohane 2019:11; Regan 2019:40–41).

The fears and political sensitivities surrounding Bougainville and the referendum required message development to be slow, cautious and consultative in order to be jointly owned by the two governments and appropriate in tone for all parties. Once the system went live, prior fears about negative responses to the content were not realised, perhaps because the message writing and approval process was rigorous. As is suggested in guidelines for mobile telephone projects, 'stakeholder participation is vital' (Watson 2014a:2). Referring to 'communicating sensitive issues in fragile contexts' (Marks 2018:16), Marks also recommends 'taking time to gain a deep understanding of the local context' (2018:16). The consultative approach to content development used may have avoided anticipated backlash and criticism. On the other hand, at least one research participant said that the hotline should have commenced earlier, and it may be that an overcautious approach delayed the project unnecessarily.

Relatedly, the long gestation of the project, some five years, meant that many key personnel changed between its conception and implementation. New personnel had to be briefed, the delay for which had a critical impact on project signoff by the ABG as well as the technical implementation by Digicel. A detailed and well-worded contract containing specific milestones provided a strong basis for managing deliverables and progressing the project despite personnel changes. However, the changing of basic facts (for instance, the formation of the BRC and various decisions such as the referendum date [see Regan 2019:85–86]) required regular re-drafting of information in the IVR script, which instigated cycles of further delays.

The impact of the aforementioned delays was significant to the success and effectiveness of the service in three ways:

1. The timing of the service — at the eve of referendum instead of 12 months prior as intended — meant that people were saturated with information.

2. There was insufficient lead time to promote the service.

3. There was inadequate time to integrate the hotline into other awareness and community engagement activities, such as the BRC awareness program, the DPAI/PACSIA referendum dialogues and other DPAI or DMC activities. It was impossible to promote the system when the messages were constantly being reviewed and project approval remained in doubt.

Having champions among government leadership is critical, especially with innovations. When leadership changed, the project stalled as new officials were briefed about it and chose whether or not to become champions. Initially, it was intended that leaders — government, community, ex-combatants — would voice each message. This would have added a level of logistical complexity, including getting leaders to agree to do the recordings and work with pre-approved scripts, as well as coordinating recording times and locations. In the end, these considerations were overwhelming for the project to undertake and professional voice-over artists were used to achieve high quality recordings quickly. However, the president's voice was used for the all-important robocall that launched the service to users.

The cost of establishing and operating the IVR service for the set period was approximately AU$70,000. Roughly half of this cost was in the technical setup, while the other half covered the cost of the incoming telephone calls (thus making it a free-call service for users). For comparison purposes, the cost of printing and distributing 30,000 copies of one edition of the *Bougainville Bulletin* is approximately AU$35,000. The cost of the Radio Ples Lain team travelling to rural areas to conduct community broadcasts is roughly AU$4000 per week, depending on the location in Bougainville.

Conclusion

The first aim of this research was to determine the effectiveness of the telephone hotline in delivering government information directly to people. Based on the responses of the research participants, it is clear that the hotline did not achieve this intended outcome effectively as the robocall did not reach most Digicel mobile telephone users and most people did not know about the service. However, all participants thought that the hotline was a good idea, even if they had not heard of it previously. Some people who telephoned

the service just one time found it to be irrelevant or unimportant in their daily lives. Others who used the service found it to be useful and valuable, particularly those who telephoned repeatedly. As intended, the hotline had been used in places where people have no radio station signal and very limited access to other forms of media. There is also evidence people listened to the audio information in groups, indicating the information reached more people than Digicel's usage statistics suggest.

The second aim was to determine whether or not there are benefits to using such a service in the future. The conclusion is that a hotline may be an appropriate information dissemination method in future, particularly if it is incorporated into a mix of mediums as part of an integrated communications strategy. The third aim was to recommend changes to any future iterations. The main suggestion from participants was to promote the hotline more effectively and through varied means, including launch events and the distribution of the audio files.

Other important issues that emerged from these research findings included that mobile telephone users in Bougainville struggle with accessing continuous, reliable mobile network coverage and keeping their handset batteries charged. The design of future mobile telephone-led interventions may benefit from being realistic about the effective reach of current mobile telephone service and infrastructure. Both in Bougainville and elsewhere in PNG, it is clear that there is a large gap between ideal and actual service delivery. Poor network coverage is due to a range of reasons including service limitations, poor maintenance by operators, landowner disputes causing equipment breakdowns and vandalism (Highet et al. 2019; Thomas et al. 2017; Thomas et al. 2019; Watson and Duffield 2016). Addressing these issues at a macro level will help governments and development partners alike to engage and provide valuable information.

The positive responses of participants to their president calling them directly on their mobile telephones — whether they received the call or not — signal the value of providing information in compelling ways. In the case of IVR systems specifically, the use of a respected and authoritative voice can be effective. For instance, in the Democratic Republic of Congo, voices of prominent citizens, including the coach of the popular national football team, were used to enhance the appeal of an IVR system (Amelina 2017). In

Bougainville, the original project model of using well-known political and community leaders became too difficult to achieve — another victim of project delays. However, such an approach could be reconsidered for future audio-based information services.

It is hoped that these research findings will be of use in the post-referendum period, when the dissemination of accurate, consistent information will remain an important objective, as:

> the most serious risk attached to the referendum process and outcome is that it becomes a catalyst for renewed violence (Bell and McVeigh 2018:67).

Marks also highlights that 'effective communication can have life and death consequences for many people, given the sensitive issues at hand' (2018:4). This paper is intended to be useful for relevant government departments and organisations with interest in disseminating accurate information throughout Bougainville. It has shown the potential for utilising mobile telephone technology for strategic purposes in both Bougainville and similar settings. It has also revealed some of the challenges associated with this approach, including intermittent and incomplete mobile network coverage and battery charging difficulties.

This research will help inform the future direction of communications in Bougainville. The results presented in this paper suggest that there is value in once again utilising the hotline method to disseminate information. However, greater effort is needed to promote such a hotline, including explaining to people how often the recorded audio messages will change.

In terms of further research, participant or non-participant observation could be undertaken in selected communities throughout Bougainville in order to understand people's access to and use of media and information in greater detail. Alternatively, group interviews could be conducted at a later time to allow participants to reflect upon the referendum and consider, in hindsight, the extent to which they had adequate access to information sources in the lead-up to polling. In addition, research could be conducted on other mobile telephone projects in PNG and similar contexts to learn more about such mechanisms and people's responses to them. The SMS survey method and the telephone interview are promising, nascent research methods that could be used to gather data remotely, given the inherent difficulties of travelling

to conduct research in Bougainville (Kaski et al. 2014; Watson and Morgan 2014; Watson and Wiltshire 2016).

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Endnotes

1. The ABG Joint Key Messages, endorsed by the PNG and ABG governments at a meeting on 29 June 2018, describes the conflict as 'the bloodiest and most destructive crisis to have occurred since the independence of Papua New Guinea in 1975 and the longest armed conflict in the Pacific Region after the Second World War' (ABG 2019c:5).

2. The BRC undertook preparatory work from December 2017 through the BRC Transitional Committee (Regan 2019:111). The BRC chair was formally appointed in November 2018 (ibid.). More details on the establishment and operation of the BRC can be found in Regan (2019:111–13).

3. The Bougainville Partnership is a development facility partnership between the governments of Bougainville, PNG, Australia and New Zealand.

4. The telephone hotline is one of a suite of media outputs by the ABG's DMC designed to inform the public about the referendum and convey other government information. The Bougainville Bulletin is a quarterly government newspaper with articles in both English and Tok Pisin (Regan 2019:113; see also Thomas et al. 2019:6).

5. 'Radio Ples Lain' translates as 'radio of our village people'. In an ABG initiative run by the DMC, a mobile radio station is set up at events around Bougainville (see also Regan 2019:113; Thomas et al. 2019:6). It provides community broadcasting to a radius of approximately 50 kilometres.

6. Krishna Sharma 7/4/2020. Head of Trend Media Pacific at Digicel PNG, personal communication.

7. Note that there are about 300,000 people in Bougainville (Eves 2018:6), 206,731 of whom registered to vote in the referendum (Radio New Zealand 7/11/2019; *Post-Courier* 7/11/2019*)*.

8. Ownership of and access to newspapers is reportedly slightly higher than ownership of and access to mobile telephones (Thomas et al. 2019:15). Also see Bohane (2019:11) regarding limited access to radio stations.

9. The workshop was jointly funded and organised by GSMA (Groupe Speciale Mobile Association), a global industry body for mobile telephone companies, and an Australian aid program.

10. See Regan 2019:114 for more information on the DPAI/ PACSIA dialogues.

11. For more information on Piksa Ples Lain, see Regan (2019:113) and Thomas et al. (2019:6).

12. See McKenna (2019:22–23) for details on outlying factions thought to be retaining weapons and the efforts made to engage with them.

13. These 1949 calls were not included in the total of 79,254 mentioned because they were received by the hotline after the period of eight weeks had expired. Similarly, test calls made before the service was promoted, i.e. before Sunday 22 September 2019, were not counted.

14. Making the point that it can be very difficult to ensure the required number of people attend group interviews, Bryman and Bell state that it is a common and accepted practice that 'small inducements, such as payment of expenses or provision of lunch, are sometimes made' (2008:525) to try to encourage attendance.

15. Note that there were two mobile telephone companies offering services in Bougainville at the time of the research: Digicel and bmobile. Recently, bmobile has been in the process of merging with Telikom PNG's mobile arm.

16. The arrangement with Digicel was that two SMSs per week would go to all Digicel telephone numbers in Bougainville during the eight-week-long period. Digicel reported that they had sent all of these SMSs. It is unclear why people reported that the messaging had stopped in recent weeks as the hotline was still operational when the field research was conducted. It may be that the participants' mobile telephone handsets were not turned

on or were not receiving network coverage when the messages were sent by Digicel.

17. Note that the information mentioned here is in the script of the telephone service. For further information on U-Vistract Meʼekamui, see Bohane (2019:9), Cox (2014) and Regan (2019:29–30).

18. Secure digital (SD) cards with memory capacity, which can be inserted into mobile telephones, laptop computers and other electronic devices.

19. Electronic funds transfer at point of sale (EFTPOS) is a payment system used in retail outlets and based on the use of debit and credit cards.

20. In a recent study in Bougainville, under one third of respondents 'had access to electricity at home' (Thomas et al. 2019:14).

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