

Managing census cancellation and deferral: recent experience from New Zealand

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Introduction

On 22 February 2011 a major earthquake devastated Christchurch, New Zealand's second largest city. The earthquake occurred only fifteen days before census day (8 March 2011) when census forms had already been delivered to a quarter of all New Zealand households. The census was called off on 25 February.

This paper describes how Statistics New Zealand managed the decision to call off the census, the premature wind-up of census operations, and the process of re-establishing the next census, which will be held on 5 March 2013. The paper concludes with a discussion of some of the key lessons learned from this experience.

Census taking in New Zealand

Under current New Zealand legislation, a census of population and dwellings must be held every five years. The last census was taken in 2006, so the next census was scheduled to occur on 8 March 2011.

A temporary workforce of 7,500 field managers and collectors is needed to run the New Zealand census. These temporary employees are supported by a core census team of around 100 staff based in three Statistics NZ offices, one in Wellington and two in Christchurch. Wellington is the capital city but has a smaller population than Christchurch. Christchurch is New Zealand's second largest city after Auckland and has a population of 370,000 (or 8% of New Zealand's total population of around 4.6 million people).

Population censuses have been held in New Zealand since 1851. Prior to the 2011 Christchurch earthquake, the only discontinuities in the census series were during the Great Depression and the Second World War. During each of these periods one five-yearly census was not held.

The Canterbury earthquakes of 2010

On 4 September 2010, six months before the census planned for 8 March 2011, a magnitude 7.1 earthquake struck the Canterbury region that surrounds Christchurch city. There was no loss of life as the earthquake was centred 40km from the city

centre and it occurred in the early hours of a Saturday morning. However, there was significant property damage, including to Statistics NZ's two offices in Christchurch.

Following the earthquake, the census team and the wider Statistics NZ organisation went into crisis management. The census team made use of crisis management and business continuity plans developed specifically for the 2011 Census.

Statistics NZ recovered reasonably quickly from this initial earthquake. The two Christchurch offices were fully operational again within a couple of weeks.

This earthquake had a very negative impact on the induction of a top layer of census field managers. The earthquake occurred two days before the first training session for census area managers, scheduled from 6-10 September in Christchurch. The training session went ahead in Christchurch but had to be stopped after only two days as the continuing aftershocks were putting enormous strain on the participants. The training was completed later in a more fragmented manner and it was less effective as a result.

At the time, we did not anticipate the amount of aftershock activity and how it would affect staff well-being and building availability. Two major aftershocks were to follow in 2010 – one on 19 October and another on 26 December. Each aftershock damaged the two Christchurch offices and resulted in their closure for periods of around a week. Both events were managed using crisis management practices, and with each event our experience and skills in crisis management and recovery improved.

Despite the earthquakes of 2010, the census team continued their preparations for the census to be held on 8 March 2011 and kept the work on track. The team of 7,000 census collectors started forms delivery on schedule on 16 February 2011.

The February 2011 earthquake and census cancellation

Six days later on 22 February, a magnitude 6.3 earthquake rocked Christchurch city. While smaller in magnitude than the September 2010 quake, this aftershock was particularly devastating because it was centred very close to Christchurch city and occurred just after midday on a Tuesday. Following the initial realisation that it was a major earthquake it then took time for the full extent of the loss to be understood: a total of 185 lives were lost, the central city was destroyed and 7,000 homes in Christchurch suburbs would require demolition. Many people fled the city and some left permanently to live in other parts of the country or overseas. Statistics NZ's two buildings in Christchurch would be closed for many months. Fortunately no Statistics NZ employees were injured.

Statistics NZ swung immediately into crisis management mode, as it had done with the three previous earthquake events in 2010. This time, major decisions had to be made about the 2011 Census. These included decisions about immediate census operations and a bigger decision about whether the census could or should continue. The quake had occurred just fifteen days before census day and 25% of all census forms had already been delivered to New Zealand households.

The first decision was to halt the delivery of census forms in the Christchurch and Banks Peninsula area. This was communicated to field staff within five hours of the earthquake. The next day, on Wednesday 23 February, the nationwide delivery of census forms was put on hold until midday Friday 25 February. We determined this

was a go/no go point at which Statistics NZ would either need to stop forms delivery completely or resume collection processes to complete the 2011 Census on schedule. Soon afterward, a decision was also made to stop the census television advertisements – their upbeat tone was completely at odds with the very extensive and sombre media reporting of the earthquake.

While these decisions were being made, the census team continued to work on two main fronts. One part of the census team tried to keep basic operations going in case the decision was made to resume field operations. This included some Christchurch-based census staff who made an extraordinary effort to support the census by flying to Wellington to work, leaving their family and friends behind. At this stage, we could still have continued to provide full technical support to the field operation, as the collection IT systems were unaffected as they were hosted on Wellington servers. A second team was established by drawing in experts in demography and statistical methods from across the Statistics NZ organisation. Within a day, this team identified and assessed a number of options (including stopping the census in the Christchurch area only) and documented this analysis in an options paper. The options analysis identified that the affected geographic area was large - up to 210,000 – 255,000 households or 10% of the New Zealand population.

As this work progressed, more information emerged about the impact of the earthquake on the census field operation and the general public. Some census field staff had lost family members and friends, and many had damaged homes. And the aftershocks were continuing. We received reports of area managers, district supervisors and collectors who were struggling to cope with the situation. Some staff had left the city and were no longer available for census work. Field managers in areas outside of Christchurch were reporting that they would have insufficient supplies of census forms to count the in-swell of people.

It was increasingly clear this was a major disaster, confirmed by the Prime Minister's announcement on Wednesday 23 February that New Zealand was in a national state of emergency. The whole country was now focused on the Christchurch disaster and what the media were reporting. Statistics NZ started receiving feedback from members of the public via the census field operation that this was not a time to be conducting a census.

On Thursday 24 February, less than 48 hours after the earthquake, the census management team recommended to the senior management of Statistics NZ that the 2011 Census be cancelled. The census management team had concluded that the census could not be successfully completed, given the probable negative impact of the disaster on census results. The management team had considered a paper that systematically assessed options against the criteria of public acceptance and census reputation risk, operational feasibility, data quality and cost. Importantly the management team had also sought the advice of two key people outside the organisation: a previous census manager and a former New Zealand Government Statistician. These individuals were able to offer the census management team a viewpoint that rose above the technical focus and strong commitment of the census team to find ways to make things work.

On the same day there were discussions with senior government officials and ministers, with a consensus emerging that the 2011 Census should be called off, leading to a final decision by the Government Statistician. During this process, Treasury officials observed that the deferral of the census would be one of a number of major areas of additional cost to the Crown arising from the earthquake. The

estimated total cost of census deferral was discussed briefly at this point. This discussion enabled the Treasury officials to make provision for the cost of re-running a census within the government's annual budget process which was underway at the time.

The Government Statistician and the Minister of Statistics announced the census cancellation early on Friday 25 February. The announcement was well received, with almost every commentator saying it was the right decision in the circumstances. The only critical comments came from a few individuals who queried the technical legality of the decision as New Zealand law states that a census must be held every five years.

Wind-up of 2011 Census operations

Once the decision was made to cancel the 2011 Census, the immediate focus was on effective communication of the decision to key stakeholders. These included the large number of temporary census staff employed throughout the country, suppliers, members of the public who had received or completed census forms, and data users. A communications plan was implemented and formal announcements of the cancellation were printed in national newspapers. The public were advised to destroy any completed census forms.

Statistics NZ also had to make decisions about retention and/or termination of the temporary census workforce. The department decided to retain all the field managers for the duration of their contracts as they were needed to manage the census wind-up process. And, for the census collectors, the department met its contractual obligations and paid them in full for their six-week contract, even though they would not be required to complete all the work they had been contracted to do. The decision about collector pay was very well received by field staff at the time, particularly those living in the Canterbury region.

Statistics NZ staff proceeded to wind-up the field operations, including the return of field supplies, closure of field offices, and field staff debriefs. Rather than speed up the process the department followed the timeline in the project plans. It would have been too complex, and just as costly, to change the arrangements we had in place with our logistics supplier. Also, Christchurch-based census staff could not work at full capacity as Statistics NZ's main buildings were closed. For six months, these staff worked part-time from home and part-time from a temporary building on a roster basis.

Managing our technology assets (computers, phones, etc) proved to be a challenge. In the aftermath of the February 2011 earthquake, there was significant risk to the production of official statistics, so census equipment was allocated to Statistics NZ staff in Christchurch to enable them to work from home while the Statistics NZ buildings were closed. During this period, normal asset management processes were not followed. The department's processes were not designed for transferring large numbers of assets in an emergency situation, and most of the staff moving the assets would not have been aware of asset management processes.

Despite this particular issue, the wind-up of census operations went very smoothly.

Setting a new date

The cancellation decision created a fresh set of challenges to do with policy and law, and with reinvigorating the census process. The decision not to hold the census was confirmed by Cabinet along with a requirement that Statistics NZ report back within four weeks on options. The census management team worked hard to achieve this deadline as it knew that a speedy decision about the date of the next census would help bring much needed certainty to data users and staff. Following the cancellation decision, management were particularly concerned about staff morale and welfare: many staff were experiencing feelings of significant loss akin to grief, and uncertainty about their future work prospects.

Over a four-week period the department consulted with data users and electoral agencies about four options for the timing of a deferred census (March 2012, October 2012, March 2013, and March 2016). At the same time, the census team looked at these options from a planning perspective, and identified that the March 2012 option was only just feasible and high risk.

In April 2011, Statistics NZ provided its advice to Cabinet with a recommendation that the next census be held in March 2013. The advice included an assessment of the four timing options mentioned above against four criteria: electoral information requirements, value to central and local government, value to other census data users, and operational feasibility including risk and cost.

Cabinet accepted the recommendation in mid May 2011. There was a delay in the decision-making process while Statistics NZ met Cabinet's request for some additional information about census frequencies and international comparisons. By this time, Statistics NZ was also advising that a one-year deferral to March 2012 was no longer feasible.

The timing of the next census was announced at the end of May 2011 as part of the Government's Budget 2011 announcements. The date of the next census was then proclaimed by the Governor General and a change was made to the Statistics Act 1975 to require the next census to be held in 2013 and every five years thereafter. These actions effectively regularised the Government Statistician's management decision that Statistics NZ could not meet its legislative obligation to hold a census in 2011.

Preparing for the 2013 Census

Once the date for the next census was known, Statistics NZ could start to plan in detail and with confidence. It also gave staff certainty and enabled them to consider whether or not they wanted to commit to working on the 2013 Census. In the end, the entire census management team continued in their roles, as well as most project managers and core census staff. As a consequence the 2013 Census is being run by a more experienced team than was the case in the lead up to 2011 census day.

As an initial step, the census management team acted quickly to put in place a high level strategy to guide the planning work for the 2013 Census. The strategy was to rerun the 2011 Census using the processes and systems developed for 2011, while making 'must do' changes and a few prioritised 'should do' changes. This meant that, from an early stage, all development for the 2013 Census was managed under strict change control.

Priority was given to improving the field technology development and deployment of field technology. We had experienced significant problems with this in setting up the 2011 field operation. For the 2013 Census, Statistics NZ invested in more project management of the field technology, clearer processes for hardware deployment, and increased quality assurance. This work was given much more visibility in the census programme. As a result, when the area managers for 2013 Census started (three-quarters had worked on the 2011 Census), they reported a significant improvement to the field technology.

Some low-cost, but high-gain, improvements were also made to field staff training and handbooks based on feedback from the field staff debriefs that occurred during the 2011 wind-up process.

The census forms were not changed, other than the date references. There was insufficient time to go through a process of consultation on content and development. There were no 'real world' changes that needed to be reflected in the census questions.

One of the largest changes was the location of processing operations. In the 2006 Census, Statistics NZ warehoused, scanned and processed census forms at a single site in Christchurch and we were all geared up to do the same in 2011. For the 2013 Census we will warehouse and scan paper forms in Auckland and process the forms in a leased building in central Wellington. This solution overcomes the issues with finding space and insurance in Christchurch given the destruction and rebuild of the city. It also makes sense from a logistics point of view, and is more cost-effective than leasing a single large processing site.

Statistics NZ also determined that it would need a Canterbury Strategy. The key elements of this strategy have been the creation of an additional collection area to cover areas most affected by the earthquake, the provision of additional help for respondents to complete questions like usual residence, and tailored local communications and community engagement.

The lack of time for a dress rehearsal between the 2011 and 2013 Censuses reinforced the importance of strict change control. A programme-level testing plan was developed and implemented. This ensured there was sufficient end-to-end testing of process and systems integration across the various census projects.

The close timing of the two censuses did require a change to our normal processes for managing census hardware. Normally after a census the hardware is disposed of, as it will be well beyond its life cycle by the time of the next census. However, in this case we retained all hardware and then had to go through the process of considering whether or not we could or should reuse hardware from 2011 in the 2013 Census. The process was complicated by the fact that some hardware was inaccessible for a time because it was located in damaged buildings that could not be accessed.

Statistics NZ also needed to consider what to do with its suppliers, and whether to extend contracts with existing suppliers or go back to market. In the end, decisions were made on a case by case basis depending on risk, timing and value for money. In some cases, timing meant we had to directly negotiate with existing suppliers as there wasn't time to go through a tender process.

While the two year interval between the 2011 and 2013 Censuses meant a lot of things had to stay the same, the deferral also created an opportunity to use the 2013 Census to learn about changing census into the future. A mailout district has been

included in the 2013 Census. This will enable Statistics NZ to learn about the changes that will be needed in future to implement a more cost-effective multi-model census design and get a very high online response.

Learnings

This section describes some of the key lessons that the authors learned from their experience of census cancellation and deferral.

1. Be prepared

The Statistics NZ census team's response to the February 2011 earthquake was helped by having had recent experience in crisis management. The team had already managed its way through three prior earthquake-related events in the previous six months and knew what steps were required to manage the crisis at least initially. The lesson here is that practice with crisis management is important when running a census, and it will require the use of scenarios in the absence of real events. You need to have a crisis management plan and up-to-date phone lists.

2. Get help

Another lesson learned is to seek dispassionate external help with making big decisions like census cancellation. Census teams that have worked for years to prepare for a census will have a strong emotional attachment to completing the census, and will look for ways to keep it going – as they can develop a strong “the mail must get through” culture. Another analogy is the mountaineer who aims to summit a mountain, and can then make the poor judgements about their safety because they are so committed to achieving their goal.

Statistics NZ's management of events following the 2011 February earthquake was greatly improved by a decision to seek the advice of experts from outside the census team following the technical analysis of options. These external advisers included a previous census manager and a former New Zealand Government Statistician. These individuals were able to offer views from the side-lines without being emotionally attached to the outcome. Their advice helped the census team move more quickly to a recommendation to cancel the 2011 Census.

3. Put deferral advice in a wider context

Governments will want to make decisions about census deferral in the context of the questions they may have about the future of the census. When the 2011 Census was cancelled the New Zealand government had significant questions about the continued need for a five-yearly census rather 10-yearly, and why a traditional survey method was still needed. The need to respond to the questions did slow the decision-making process, although the delay was less than might have been the case because Statistics NZ already had an existing programme investigating long-term census options. With the benefit of hindsight, the department could have done more to anticipate Ministers' interest in this wider context.

4. Manage change well

Running a census within two years requires careful management of change to ensure an appropriate level of reuse and redevelopment. Some change is inevitable but it is about making the right calls about what to keep the same and what to change. Statistics NZ put a strict change control in place and drew on lessons learnt about change management from the 2011 Census.

5. Know when a crisis is a disaster

It's also important to be able to differentiate between issues, crises and disasters and manage them accordingly. The February 2011 earthquake was a national disaster that was well beyond the census team's capacity to manage and recover from alone. The key turning point was the announcement of a state of national emergency by the Prime Minister. At that point a census two weeks later could not be held.

Reference

Statistics New Zealand (2011) Regulatory Impact Statement: Options for the next Census of Population and Dwellings in New Zealand.

http://www.stats.govt.nz/about_us/policies-and-protocols/ris-2013-census-options.aspx

Note about the authors

Vince Galvin was Deputy Government Statistician – Social and Population when the 2011 Census was called off. Carol Slappendel was General Manager, 2011 Census at the time, and is now overseeing the taking of the 2013 Census.