

Outcomes of the Canterbury earthquake sequence for tourism businesses

November 2012

Dr. Caroline Orchiston¹
Dr. John Vargo²
Dr. Erica Seville²

¹ Department of Tourism, University of Otago

² Resilient Organisations, University of Canterbury

Executive Summary

The Christchurch earthquake sequence has been on-going since September 4th 2010. The largest two earthquakes, magnitude (M) 7.1 on September 4th and the M 6.3 on February 22nd 2011 caused immediate and significant damage to the city of Christchurch. As a consequence of the earthquakes, the tourism sector in the Canterbury region has been heavily impacted, with broader impacts being felt throughout the South Island.

Resilient Organisations and the University of Canterbury began a series of quantitative investigations into the recovery and response of key business sectors to the earthquakes. The purpose of this study was to build on this work by exploring the outcomes of the earthquakes on the tourism sector, a critical economic driver in the region. Two postal surveys were sent to 719 tourism business managers; the first to businesses in the 'Impact Zone' defined as areas that experienced Modified Mercalli intensities greater than 6. The second survey was sent to the remaining businesses throughout the Canterbury region ('Rest of Canterbury'). Response rates were 46% response for the Impact Zone, and 29% for the Rest of Canterbury.

Key findings:

- Tourism operators describe reduced visitor numbers as the most disruptive factor since the earthquakes.
- While some businesses are still struggling, others are thriving. Parts of the accommodation sector are performing very well, with motels and holiday parks reporting positive outcomes compared to all other business types.
- Revenue changes after the earthquakes are polarised, and sector-dependent. Activity and attraction, and visitor transport were significantly more likely to have reduced revenue after February, while motels and holiday parks reported increased revenue.
- Almost all operators throughout Canterbury report changes in the types of visitors their business receives as a consequence of the earthquakes.
- 70% of operators reported a decline in international visitor arrivals to their business after the earthquakes. Some districts outside Christchurch reported increased numbers of visitors from within Canterbury, illustrating the outflow of Christchurch residents seeking respite from the aftershocks.

More detailed findings of the report include:

Impacts

- Tourism operators across all districts in the Impact Zone reported that the September and February earthquakes had impacted their business. Banks Peninsula, Christchurch city and Selwyn were particularly badly affected after the September earthquake due to their close proximity to the epicentre of the Darfield earthquake, while Selwyn was less affected by the February event.

- The majority of operators believe the earthquakes changed the types of visitors they receive. The most notable change was the reported decline in the international market by 67% of Rest of Canterbury and 75% of Impact Zone businesses. Local, regional and national visitor arrivals were more variable depending on location. For example, Waimakariri, Selwyn, Timaru, Kaikoura, Hurunui and Ashburton all reported increased numbers of visitors from within Canterbury, reflecting the likely outflow of Christchurch residents in search of aftershock respite.
- Temporary business closure after the two main earthquakes was relatively common in the Impact Zone sample population, more so following the February earthquake as expected. Closures in the Rest of Canterbury were uncommon, with few businesses changing their operating hours as a consequence of the earthquakes.
- Half of accommodation businesses in the Impact Zone sample reported being better off after the earthquakes. Three-quarters of motel operators reported increased revenue after February, while hotels reported lower revenue. This result supports the most recent Commercial Accommodation Monitor data for Canterbury Year Ending May 2012 showing a 26% increase in occupancy rate for motels compared to Year Ending May 2011. In contrast, hotels and backpackers were down 54% and 35.4% respectively. Motels are being used as an alternative by visitors who would normally choose hotels. They are typically low-rise buildings, and they are located throughout the city and suburbs, and received much less overall damage. In the Rest of Canterbury, the earthquakes had not significantly impacted business operations, however, the types and numbers of visitors had changed for 87% of Rest of Canterbury organisations.
- In the Impact Zone sample, transport businesses were hard hit, particularly in Christchurch. They were significantly more likely to work reduced hours, and only 5% reported being slightly or significantly better off after the earthquakes. Eighty-five per cent of visitor transport operators reported a decline in revenue after the February earthquake. Visitor transport operators serve the tourism industry by moving tourists within and between destinations, interacting with accommodation and activity/attraction networks. The significant drop in both international and domestic visitation had been a major blow to this sector of the industry. Recovery is dependent on the rebuild of the critical tourism infrastructure in Christchurch, at which point visitors will be attracted back to the city in sufficient numbers to regenerate this sector. The small number of transport businesses in the Rest of Canterbury sample did not allow for comparable cross tabulations to be carried out.
- Activity/Attractions operations in the Impact Zone sample were also hard hit by the earthquakes. They were significantly more likely to close temporarily and almost two-thirds reported a decline in revenue after the February earthquake. They were also significantly more likely to report a decline in arrivals from all market segments, particularly international visitors. Activity and attraction businesses are heavily reliant on inbound visitors, especially international visitors. They are often larger than other tourism sectors, and while that has the potential to make them more resilient to business interruptions, it also means they have more staff and higher costs to manage when visitors stop coming.

- Reduced visitor numbers was the most disruptive factor affecting Impact Zone tourism businesses after the February earthquake. Non-structural damage (fixtures and fittings) and damage to equipment was also very disruptive. Communications, electricity and road network issues were the most commonly reported lifelines problems after the February earthquake, and were described as slightly to moderately disruptive.
- Impacts to the Rest of Canterbury related mainly to changes in the types of visitors they received compared to before the earthquakes. Two-thirds of Rest of Canterbury operators had experienced a drop in the number of international visitors to their business. More than half reported increases in the number of visitors from the Canterbury region, while local and domestic visitors were mainly the same as before the earthquakes.
- More than one third of Impact Zone businesses used organisational cash flow to fund their business recovery in the aftermath of the February earthquake. Others relied on savings and insurance claims, and many businesses used the Earthquake Support Subsidy provided by the government to assist with paying their employees. Less than 20% of Rest of Canterbury businesses reported the need to finance their recovery, but those who did used bank loans, savings and cash flow to assist their business. No Rest of Canterbury operators utilised the Earthquake Support Subsidy.
- Outcomes of the earthquakes on business performance highlighted there were winners and losers after the earthquakes. Similar proportions of Impact Zone and Rest of Canterbury operators reported being either worse off or better off after the earthquakes.
- Decline in revenue affected more than half of Impact Zone tourism businesses after September and February, particularly in Christchurch city and Banks Peninsula. Interestingly, however, more businesses in Canterbury reported increased revenue after the February earthquake compared to after the September event. This reflects the differential outcomes on business as a function of their location, business type and direct physical impacts. For example, many accommodation facilities were destroyed in the CBD, resulting in a significant reduction in capacity, and as a consequence accommodation facilities located outside the CBD that were still operational experienced a sharp increase in demand. For the Rest of Canterbury sample, a larger proportion stated that their revenue had stayed the same after both earthquakes. As with the Impact Zone sample, a larger proportion of Rest of Canterbury businesses reported increased revenue after the February earthquake, compared to the September event.
- Perceptions of debt level and cash flow were consistent in both sample populations.
- A relatively high proportion of Timaru and Ashburton businesses reported an increase in revenue. After the earthquakes Christchurch was perceived to be unsafe or unable to host visitors leading visitors to search out other options away from the damage zone. This rise in Timaru could also be a result of Christchurch residents themselves seeking some respite from the aftershocks.

- Few operators in Canterbury perceive the industry has bounced back to where it was prior to the earthquakes, which is a clear reflection of the depressed nature of inbound tourism figures to the region.

Insurance and staffing issues

- Almost half of Impact Zone businesses did not make any insurance claims and 44% made 1-2 claims. The number of claims was higher after the September earthquake compared to the February earthquake, which appears counterintuitive. The specific reasons for this require further investigation. Very few Rest of Canterbury businesses made an insurance claim during the earthquake sequence.
- Accommodation operators in the Impact Zone were significantly more likely to make claims during the earthquake sequence, while 76% of visitor transport and 64% of activity/attraction operators did not make any claims. Rest of Canterbury claims were too few in number to separate into sub-sectors.
- Property and building, and public liability insurance were the most common products purchased by operators throughout Canterbury before the earthquakes. The reasons for this were not specifically explored, but it could relate to the reliance of accommodation providers on their premises, including non-structural interior fittings and fixtures. Some types of activity and attraction or transport operations are less reliant on business premises, for example transport operators who run their business from their own home.
- Tourism operators throughout Canterbury are generally satisfied or very satisfied with their insurer (52-55%). Those in the Impact Zone were more likely to be dissatisfied (12%) compared to the Rest of Canterbury sample (2%). Most Impact Zone operators are confident their insurance cover was adequate after the earthquakes.
- One fifth of organisations in the Impact Zone had staff leave voluntarily after the earthquakes, and 10% needed to make staff redundant. Almost one third hired new staff, but this was generally related to normal staffing increases at the beginning of the high tourist season. The Impact Zone sample used the Employee Wage Subsidy Scheme, which could have reduced the likelihood of redundancies being made. No redundancies were required in the Rest of Canterbury sample.

Resilience and preparedness

- The majority of Impact Zone and Rest of Canterbury operators are happy with their current level of preparedness, and feel much better prepared to deal with a future disaster since experiencing the earthquakes.
- Almost half of all operators surveyed do not have back up IT facilities.
- Staff inductions are being used by 38-55% of Canterbury tourism businesses, however very few include any mention of how to respond in an earthquake. Many employees in the tourism sector are foreign nationals with very little knowledge of the seismic potential in New Zealand. The induction process has been highlighted as having significant scope towards improving post-disaster outcomes in terms of building the capacity of staff to cope with an earthquake.

- More than half of Canterbury tourism operators have not practiced how they would respond in an emergency. The feedback from respondents to this question suggests that for many micro-sized businesses, formal planning for emergencies does not happen because of the small-scale nature of tourism enterprises, typically owner-operators with few or no employees. Many described informal discussions or plans that they had.
- There have been slight (but not statistically significant) increases in the number of businesses engaging in crisis and emergency planning, and business continuity planning since the earthquakes (33-41% report that they currently have plans). Some comments alluded to a lack of time for and interest in developing plans, with many relying on their ability to react to an emergency situation as it presents itself.
- Tourism businesses throughout Canterbury value their ability to make tough decisions quickly, and work on a problem until it is resolved. Also, many believe their organisation would have good leadership in the face of crisis. In contrast, they perceive a weakness in their ability to fill roles if key people are unavailable, use knowledge in novel ways and because they lack sufficient resources to absorb some unexpected change.

Table of Contents

Executive Summary.....	2
Impacts.....	2
Insurance and staffing issues.....	5
Resilience and preparedness.....	5
Acknowledgements.....	8
List of Tables.....	9
List of Figures.....	11
1. Introduction.....	12
1.1 Tourism and the Canterbury earthquakes.....	12
2. Methodology.....	15
2.1 Response rate.....	18
3. Impact Zone results.....	20
3.1 Business profile.....	20
3.2 Impacts of the Canterbury earthquake sequence.....	23
3.3 Insurance and staffing issues.....	34
3.4 Business resilience and preparedness.....	36
4. Rest of Canterbury.....	40
4.1 Business profile.....	40
4.2 Impacts of the Canterbury earthquake sequence.....	41
4.3 Insurance and staffing issues.....	43
4.4 Business resilience and preparedness.....	44
5. Discussion.....	48
5.1 Impact Zone and Rest of Canterbury business profiles.....	48
5.2 Impacts.....	48
5.3 Insurance and staffing issues.....	51
5.4 Resilience and preparedness.....	51
6. Conclusion.....	52
References.....	53
Appendices.....	54

Acknowledgements

We would like to extend out thanks to the tourism operators of Canterbury who took the time to participate in this research project. Without their help we would not have been able to gain important insights into the response and recovery of the tourism sector after the earthquakes.

The Resilient Organisations research team were generous in their support and feedback during the development of the survey, and this collaborative approach greatly improved the project in many ways.

Resilient Organisations are funded through the Natural Hazards Research Platform. Dr. Orchiston gratefully acknowledges funding from GNS Science and the University of Otago.

List of Tables

- Table 1: Spatial distribution of the Impact Zone and Rest of Canterbury surveys in Canterbury.
- Table 2. Survey responses by district.
- Table 3. Tourism business type. (Note, the accommodation category shown in parentheses is not included in the column total).
- Table 4. Number of fulltime, part time and temporary employees (shown as column per cent).
- Table 5. Cross tabulation of business type with total number of employees in SME categories (shown as row per cent).
- Table 6. Cross-tabulation between business location and whether businesses were impacted by the September and February earthquakes (shown as per cent).
- Table 7. Outcomes of the September and February earthquakes on business operation (shown as per cent).
- Table 8. Outcomes of the September and February earthquakes on business operation on activity/attraction, visitor transport and accommodation businesses (shown as per cent).
- Table 9. Factors affecting businesses after the February earthquake, with the mean level of disruption (from 1 = not at all disruptive to 4 = very disruptive).
- Table 10. Lifelines impact on tourism businesses with the mean level of disruption (from 1 = not at all disruptive to 4 = very disruptive).
- Table 11. Financial tools used by business operators to finance their recovery after the February earthquake (multiple response = 246).
- Table 12. Insurance products being used by tourism operators, shown as frequency and per cent (N = 205).
- Table 13. Insurance claims after damaging Canterbury earthquake sequence events (N=205).
- Table 14. Staff losses and gains after the earthquakes.
- Table 15. Tourism recovery statements measured on a Likert scale from strongly agree (SA) to strongly disagree (SDA), including 'don't know' and mean.
- Table 16. Crisis/emergency/continuity planning in tourism businesses, shown as per cent.
- Table 17. Planning roles in Impact Zone tourism organisations with dedicated staff to perform them.
- Table 18. Thirteen organisational resilience indicators, shown as row frequency per cent, and mean scores.
- Table 19. Tourism business type. (Note, the accommodation category shown in parentheses is not included in the column total).

- Table 20. Insurance products being used by tourism operators, shown as frequency and per cent (N = 63).
- Table 21. Insurance claims after damaging Canterbury earthquake sequence events (N=63).
- Table 22. Staff losses and gains after the earthquakes.
- Table 23. Tourism recovery statements measured on a Likert scale from strongly agree (SA) to strongly disagree (SDA), including 'don't know' and mean.
- Table 24. Crisis/emergency/continuity planning in tourism businesses, shown as per cent.
- Table 25. Planning roles in ROC tourism organisations with dedicated staff to perform them.
- Table 26. Thirteen organisational resilience indicators, shown as row per cent, and mean scores.
- Table 27. Comparing business type in the Impact Zone and Rest of Canterbury samples

List of Figures

- Figure 1. Canterbury Accommodation monitor data for guest nights since May 2007.
- Figure 2. Monthly international and domestic visitor arrivals data to Canterbury 2007-2012 (See Appendix for data extending from 2000-2007).
- Figure 3. Territorial authority boundaries in Canterbury.
- Figure 4. Maps of MM VI intensity zones after the September 4th and February 22nd earthquakes (top) and the combined contour used to define the 'Impact Zone' (bottom). Yellow dots refer to MM VI, orange MM VII and dark orange MM VIII.
- Figure 5. Length of time the organisation has been operating (n = 200).
- Figure 6. Outcomes of the earthquakes on business performance, shown as per cent.
- Figure 7. Business outcomes after the earthquakes for activity/attraction, visitor transport and accommodation operators (shown as per cent).
- Figure 8. Change in revenue after September (but before February) and after February (shown as per cent).
- Figure 9. Change in revenue cross-tabulated with business location (shown as per cent).
- Figure 10. Change in revenue after February 22nd cross-tabulated with business type (shown as per cent).
- Figure 11. Change in the types of visitors to tourism businesses after the earthquakes (shown as per cent).
- Figure 12. Reported declines in local, regional, national and international visitor numbers from affected districts after the February earthquake, shown as per cent.
- Figure 13. Reported increases in local, regional, national and international visitor numbers from affected districts after the February earthquake, shown as per cent.
- Figure 14. Change in the types of visitors to tourism businesses after the earthquakes (shown as per cent).
- Figure 15. Change in revenue after September (but before February) and after February (shown as per cent).
- Figure 16. Outcomes of the earthquakes on business performance (shown as per cent).

1. Introduction

This collaborative research project was initiated in July 2011, bringing together research expertise from Resilient Organisations Research Programme and the Department of Tourism at the University of Otago. Resilient Organisations is undertaking a longitudinal study investigating resilience and recovery of organisations following the Canterbury earthquake sequence. Industry sectors involved in the study to date include agriculture, building suppliers, hospitality, information and communication technology (ICT), lifelines (critical infrastructure), fast moving consumer goods, and transport. The purpose of this report is to present findings from the tourism sector.

Research questions include:

1. How were tourism organisations directly or indirectly impacted by the Canterbury earthquakes?
2. How were tourism organisations affected by issues around insurance and changes in staffing after the earthquakes?
3. How prepared and resilient are tourism organisations to future significant business interruptions?

Two quantitative postal surveys were developed to address these research questions. The first survey was sent to all operators within a defined zone where intensities of MM VI or greater were experienced, called the Impact Zone (IZ). The second survey was sent to all the operators in the Rest of Canterbury (ROC). The majority of questions were replicated between the two surveys, although some were tailored to capture data on the direct impact of the earthquake on businesses in the IZ.

This report begins by setting the tourism context in terms of the outcomes of the earthquake sequence. A detailed description of the methods is followed by two sections addressing the results of the IZ and ROC surveys. The final part of the report discusses the results and compares and contrasts the two surveys where appropriate.

1.1 *Tourism and the Canterbury earthquakes*

Christchurch is the second largest city in New Zealand, and contributed 16% of the total tourism activity nationwide prior to the September earthquake in 2010 (Ministry of Economic Development 2012). While the regional economy had been feeling the effects of the global recession before the earthquakes, Christchurch and the Canterbury region was continuing to develop a tourism industry of national significance. The city's tourism product was based on heritage and cultural values in Christchurch and Banks Peninsula, with an emphasis on events and conventions, and a growing cruise industry. Christchurch is also the aviation gateway to the South Island, with 85% of international visitor arrivals and departures to and from the South Island taking place through Christchurch Airport (CIAL 2012a). Tourism in the rest of Canterbury is focussed on natural heritage and scenic values, including skiing, thermal hot springs (Hanmer Springs), whale-watching (Kaikoura), and alpine environments (Mt Cook-MacKenzie). The economy of the Canterbury region is also heavily reliant on

farming, with extensive tracts of dairy, cropping and mixed production on the Canterbury Plains west of Christchurch City.

The Canterbury earthquake sequence began on September 4th 2010 with the rupture of the Greendale Fault (M 7.1) 30 km west of Christchurch. Damage in the city was considered significant at the time, with many heritage building facades collapsing and large quantities of liquefied soil erupting from the ground surface as a consequence of shaking. The fact that there were no casualties was attributed to New Zealand's rigorous building codes, and that the earthquake took place at 4.30am. There was a sense that the country had survived the largest urban earthquake since 1931 relatively unscathed. Then, on February 22nd 2011 a shallow aftershock (M 6.3) struck southeast of the central city at a depth of 5km, resulting in unprecedented damage and extensive liquefaction. The aftershock claimed 185 lives, with two major building collapses (Canterbury Television (CTV) and Pyne Gould Corporation) accounting for 133 deaths. Foreign nationals from 20 countries were among the deceased, including English language students in the CTV building. The earthquake also damaged many heritage buildings, notably Christchurch Cathedral, an iconic building of great significance to the people of the city, and as a tourist attraction. In the period since the February earthquake approximately 220 heritage buildings have been demolished, changing the face of the city of Christchurch forever (CERA 2012).

The February earthquake destroyed 2/3 of existing hotel stock in Christchurch, many backpacker hostels, and heavily impacted the conventions market. The city currently has 1100 hotel rooms, compared to 3750 before the earthquakes (The Press 2012a). Official travel advice from New Zealand and other foreign governments immediately following the earthquakes urged potential tourists to remove Christchurch from itineraries. The reaction of specific market segments is poorly understood, and international visitor arrivals at a sub-regional scale are unavailable, however fear and anxiety are anecdotally considered to be continuing to deter visitors from coming to Canterbury. In Australia, images from Christchurch city were being televised 24 hours per day for several days on two news channels after the February earthquake. Until July 2012 the Australian Department of Foreign Affairs and Trade (DFAT) continued to state that potential visitors to Christchurch should exercise 'a high degree of caution', which led Christchurch Canterbury Tourism (CCT) to request that DFAT lessen the severity of their advisory (The Press 2012b).

In the 18 months since the earthquake sequence began, many thousands of aftershocks have been recorded. In the meantime, the tourism industry has been experiencing very slow and painstaking recovery. Regional Visitor Monitor (data collected by the Ministry of Economic Development) illustrates the significant drop in guest nights in Canterbury, shown in Figure 1. Prior to September 2010, international visitor arrivals typically exceeded domestic arrivals during the summer months, however since the February earthquake international visitor numbers have remained at unprecedented low levels (Figure 2). Christchurch International Airport (CIAL) reported arrivals of 5.6 million in 2011, down 6.7% from 2010 (CIAL 2012b).

Figure 1. Canterbury Accommodation monitor data for guest nights since May 2007.

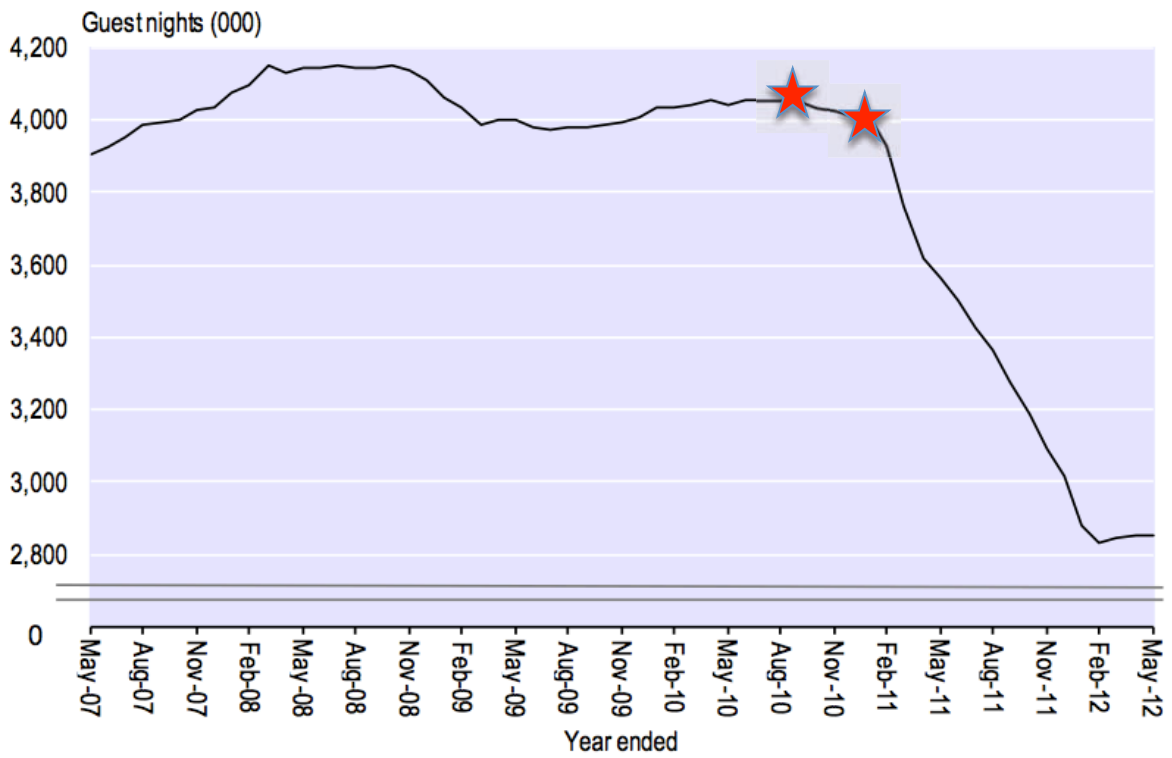
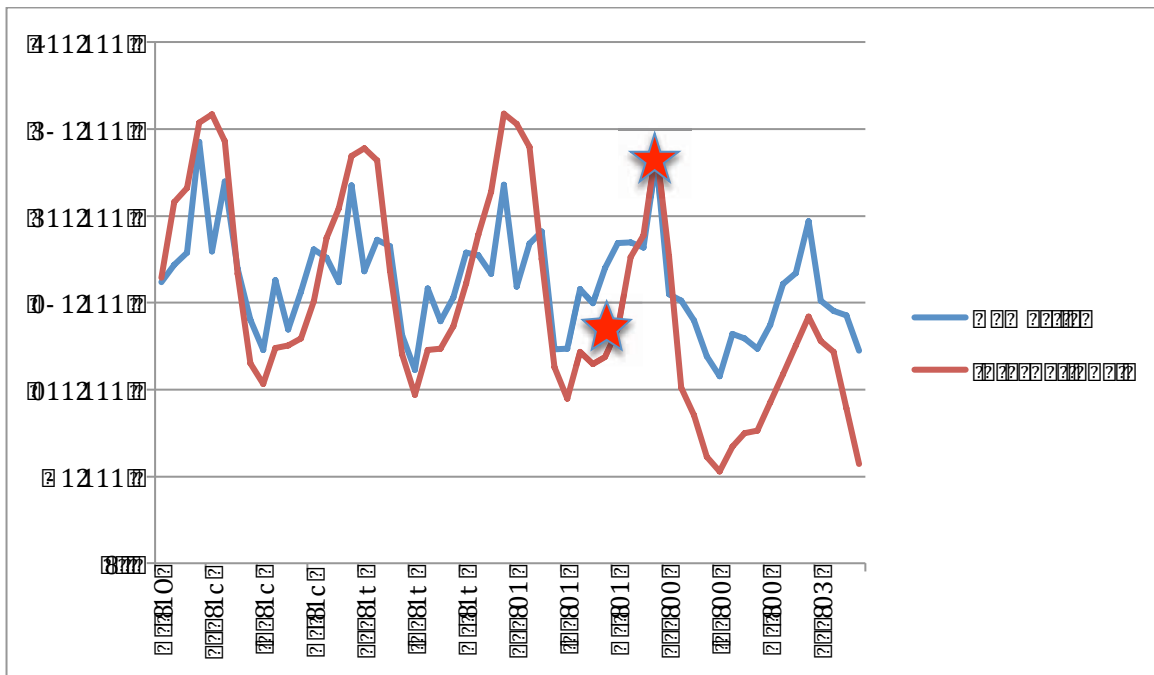


Figure 2. Monthly international and domestic visitor arrivals data to Canterbury 2007-2012 (See Appendix for data extending from 2000-2007).



Guest nights in Canterbury (Year Ending May 2012) were down 20% compared to May 2011, with international visitor guest nights dropping 29.6% and domestic down 12% over the same period¹. These figures are particularly negative given that Year Ending May 2011 data included the period of both major Canterbury earthquakes and the immediate fallout on tourist numbers after these events.

The Christchurch Earthquake Recovery Authority (CERA) and Christchurch City Council (CCC) have developed a blueprint for redevelopment of the CBD. In a submission to CERA on September 12th 2011, CCT urged CERA to expedite the rebuilding of the CBD, stating that the tourism sector would remain in a state of 'limbo' until the rebuild began because of the critical shortage of accommodation facilities, and the lack of a convention centre. The blueprint has so far received a generally positive response by tourism stakeholders.

This research investigates the outcomes of the earthquakes on the tourism sector. It should be noted that the impact of the Global Financial Crisis, and also the Japanese earthquake and tsunami, are extremely difficult to separate from the events taking place after the Canterbury earthquake sequence. The impacts of the earthquakes are measured in this study using the knowledge, perceptions and understanding of the tourism operators directly affected by the earthquakes.

2. Methodology

Two surveys were developed to capture data on impacts, insurance and staffing issues, and preparedness and resilience in tourism organisations throughout Canterbury after the earthquakes (Figure 3). It was necessary to implement two surveys because of the variable organisational outcomes depending on business location. GeoNet 'felt reports' were used to define areas that had been impacted directly by earthquake shaking. For the purposes of this research the threshold was Modified Mercalli intensities of greater than MM VI². GeoNet is a government-funded entity that records and monitors seismic activity in New Zealand. After an earthquake the public can lodge 'felt reports' to describe how they were affected by shaking. These reports are then used to create intensity maps, with each individual felt report being shown as a coloured dot illustrating Modified Mercalli Intensities. Felt reports for both the September and February earthquakes were extracted from the GeoNet website, and then a combined contour was generated that encompassed the full extent of the MM VI zones of both earthquakes (Figure 4). This defined the Impact Zone (IZ). Then, all tourism organisations located outside this MM VI contour were part of the second sample population: the Rest of Canterbury (ROC).

¹ Ministry of Economic Development Regional Accommodation Monitor results for Canterbury, Year Ending May 2012

² MM VI shaking on the Modified Mercalli Scale is defined as 'strong', and described as shaking felt by all, masonry chimneys topple and furniture moves.

Figure 3. Territorial authority boundaries in Canterbury, showing the Impact Zone contour in black.

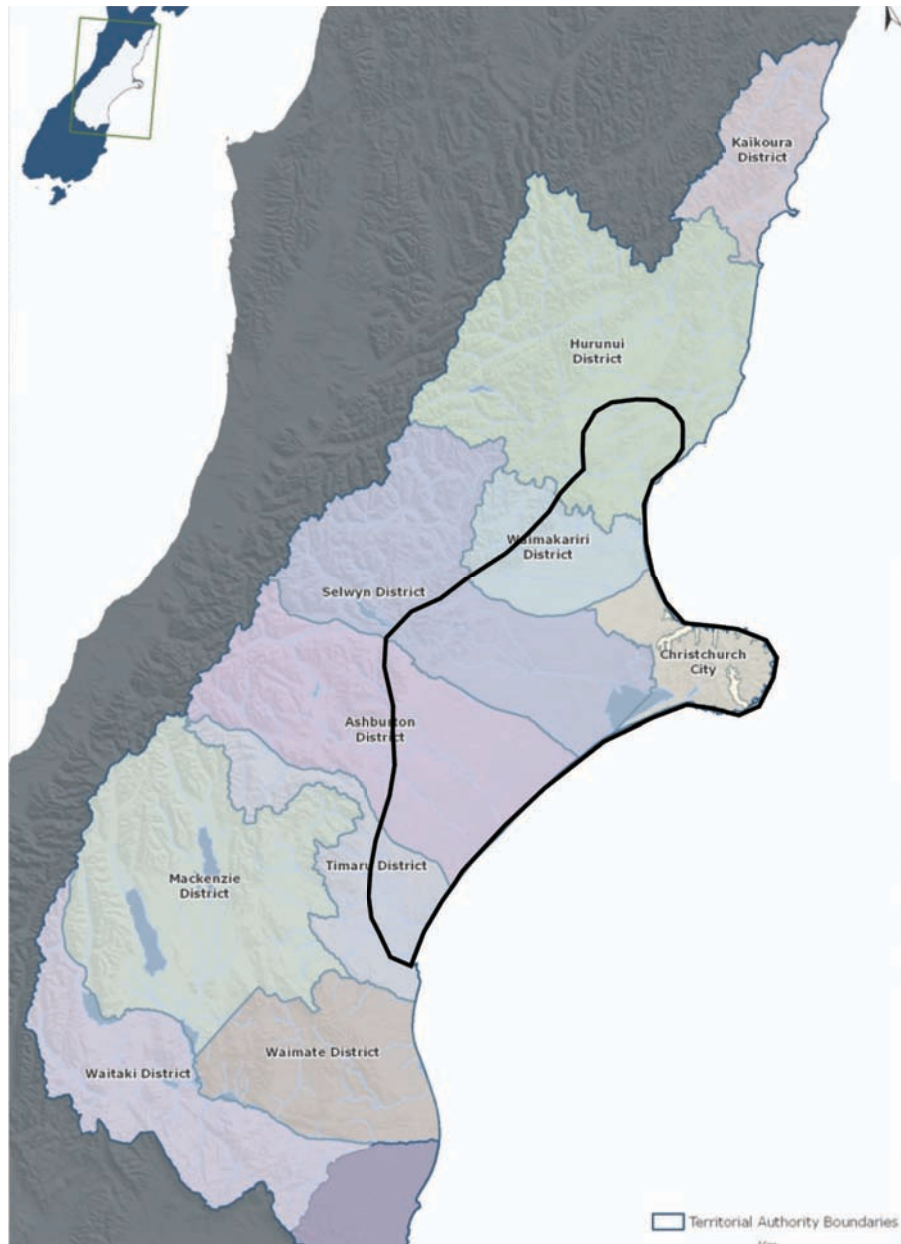
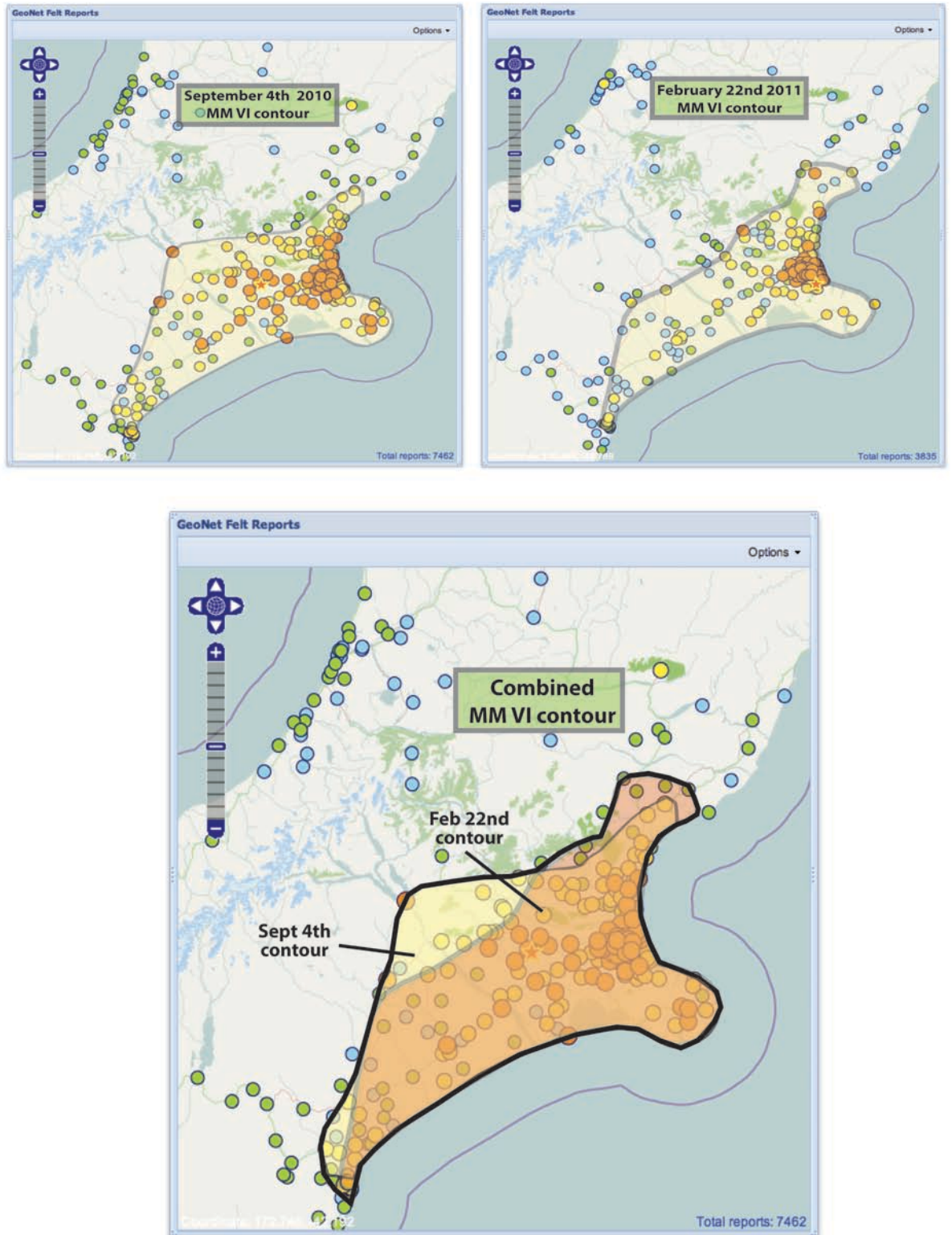


Figure 4. Maps of MM VI intensity zones after the September 4th and February 22nd earthquakes (top) and the combined contour used to define the Impact Zone (bottom). Yellow dots refer to MM VI, orange MM VII and dark orange MM VIII.



Tourism businesses were defined as those involved in activity/attraction, visitor transport and accommodation. The surveys were addressed to the business manager by name where possible. Survey questions were mainly closed with Likert scales or a range of tick box options. There were also dedicated sections where comments could be written, and two open-ended questions that allowed operators to describe issues of importance to them. A total of 719 postal surveys were distributed to tourism business managers throughout Canterbury, comprising 498 to the IZ and 221 to the ROC (Table 1). Note that some districts contained both ROC and IZ-defined businesses, as shown in Table 1. The surveys were posted in early April 2012, and the closing date for returns was June 30th 2012. Follow-up reminders were administered twice; the first was a postcard reminder sent on April 24th, followed by a replacement survey on May 18th. Each reminder boosted the response rate by 10-15%.

Table 1. Spatial distribution of the Impact Zone and Rest of Canterbury surveys in Canterbury.

District	Impact Zone	Rest of Canterbury	District totals
Christchurch City	287	0	287
Hurunui	6	49	55
Waimakariri	31	0	31
Selwyn	33	3	36
Ashburton	99	2	101
Timaru	42	0	42
Waimate/Waitaki	0	22	22
MacKenzie	0	47	47
Kaikoura	0	98	98
Total	498	221	719

2.1 Response rate

Of the 719 surveys sent, 66 were 'returned to sender' and 265 were valid responses. The Impact Zone survey yielded 205 valid responses, or a 46% response rate. The Rest of Canterbury generated 60 responses, or 29% response. Christchurch had 42 surveys 'returned to sender' equating to 15% of all the surveys sent to Christchurch. The reason for this high rate of return to sender is likely to be because businesses had closed down, either as a consequence of the earthquakes or for other reasons. Some may have relocated, but the postal service would normally forward mail to them at their new location. Most districts had a response rate of > 40%, however Kaikoura had the lowest rate of 19%. Conversations with several operators in Kaikoura suggest that the survey did not seem relevant to them because they were not seriously affected by the earthquakes.

Responses to the survey were variable between districts. Table 2 outlines the number of responses by district³. Surveys that were 'returned to sender' have been deducted from the district response column, and response rates are shown as per cent returned.

Table 2. Survey responses by district.

District	Impact Zone	Rest of Canterbury	District response totals		Returned to
	n		n	Per cent	n
Christchurch City	97	n/a	97	40%	42
Hurunui	4	18	22	41%	1
Waimakariri	15	n/a	15	48%	0
Selwyn	20	0	20	56%	0
Ashburton	42	2	44	45%	4
Timaru	20	n/a	20	48%	0
Waimate/Waitaki	n/a	6	6	29%	1
MacKenzie	n/a	13	13	29%	2
Kaikoura	n/a	17	17	19%	10
Total	198	56	254 ³		

The results presented in the following sections address the IZ and ROC surveys separately. Firstly, the businesses in each of the two zones are profiled, followed by a thorough description of the impacts of the Canterbury earthquake sequence on business operations. Then, insurance and staffing issues arising from the earthquakes are outlined. Lastly, preparedness and resilience issues for tourism businesses are described. **Statistically significant Chi square results with 99% significance are shown with an asterix (*) throughout the report.**

³ Note that a small number of respondents chose not to identify themselves on the survey; hence they could not be spatially located. As a result the district total is not equal to the total number of valid responses.

3. Impact Zone results

3.1 Business profile

This section presents a profile of tourism businesses in the Impact Zone (IZ) sample population, including:

- Type of tourism enterprise
 - activity/attraction
 - accommodation
 - visitor transport
- Number of fulltime, part time and temporary employees
 - Micro <5 employees
 - Small 6-49 employees
 - Medium 50-99 employees
 - Large >100 employees
- Length of time in business
- Number of business sites/locations
- Business ownership structure
- Secondary employment of the manager outside the organisation
- Property ownership status (rent or own)

Respondents were asked to select multiple options to best describe their business category(ies) (43 operators selected two business categories; multiple response n = 242). The largest proportion of responses came from the accommodation sector (61%), followed by activity / attraction (26%) and visitor transport (14%, Table 3). Hosted accommodation (22%) and motels (14%) were the largest sub-sectors in the accommodation category.

Table 3. Tourism business type. (Note, the accommodation category shown in parentheses is not included in the column total).

Business Type	n	Per cent
Attraction / Activity	62	26%
Visitor Transport	33	14%
Accommodation	(147)	(60%)
Motel	34	14%
Backpackers	15	6%
Holiday park	8	3%
Hosted (B&B, Farmstay)	53	22%
Hotel	8	3%
Camping ground	3	1%
Lodge	17	7%
Serviced apartment	9	4%
TOTAL	242	100%

Respondents were asked to indicate the number of fulltime, part time and temporary staff employed by their tourism business. Table 4 shows the sum of all fulltime, part time and temporary employees recoded into defined SME categories (micro = <5, small = 6-49, medium = 50-99, large = 100+) (Cameron & Massey 1999). In total, 76% of businesses employ fewer than 5 fulltime, part time or temporary staff. Small businesses comprise 21% of the sample, and the remaining 3% is made up of medium (1%) and large (2%) businesses. Breaking down the micro business category further shows that 25% have no employees (i.e. only the owner/operator works in the business), and 21% have one employee. A comparison between the ROC and IZ data on business size can be referred to in the Appendix.

Table 4. Number of fulltime, part time and temporary employees (shown as column frequency per cent).

Organisation size by # employees	Total
Micro	76%
Small	21%
Medium	1%
Large	2%
n	201

Total employee data was cross-tabulated with business type to investigate the relative size of tourism businesses in the sample (Table 5), which produced a statistically significant result*. Activity and attraction businesses are generally larger, with more than a third defined as small, and 61% micro-sized. Hosted accommodation is dominated by owner-operator micro-sized businesses. Hotels in this sample population are most likely to be defined as small. Note, however, the small sample sizes of the accommodation sub-sectors.

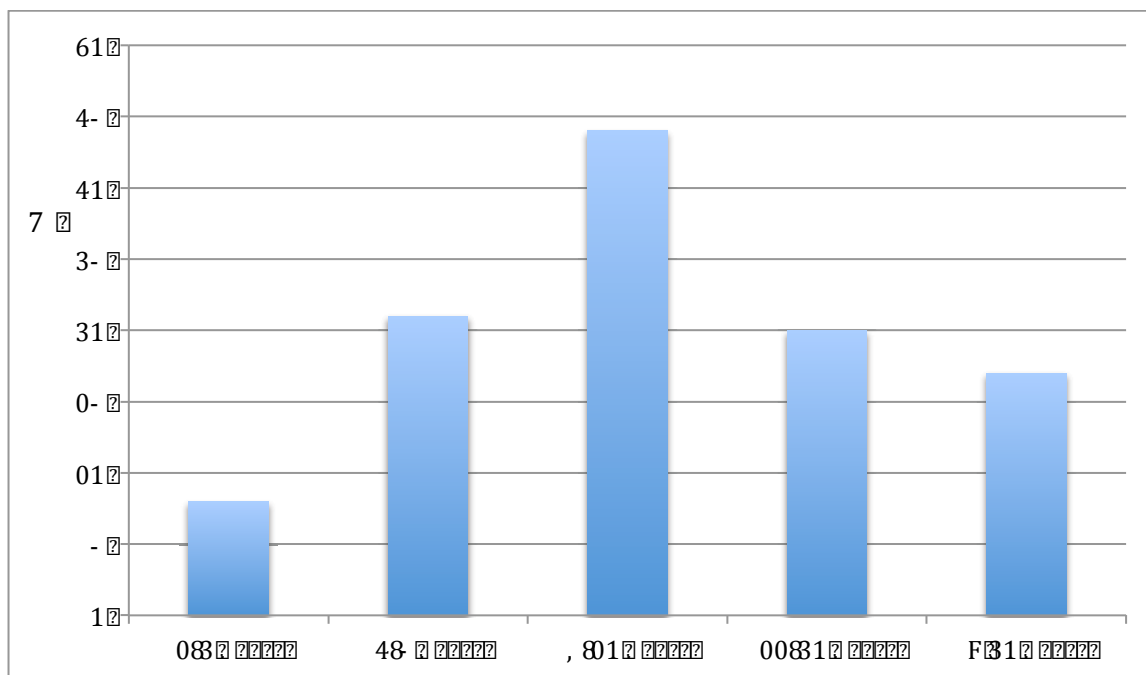
Table 5. Cross tabulation of business type with total number of employees in SME categories (shown as row per cent).

Business Type	Micro	Small	Medium	Large	n
Attraction / Activity	61%	36%	2%	2%	59
Visitor Transport	82%	9%	5%	5%	22
Accommodation					
Motel	88%	13%	0	0	32
Backpackers	85%	8%	0	8%	13
Holiday park	50%	50%	0	0	6
Hosted (B&B, Farmstay)	98%	2%	0	0	47
Hotel	0	83%	0	17%	6
Camping ground	100%	0	0	0	1
Lodge	63%	38%	0	0	8
Serviced apartment	100%	0	0	0	2
n	150	43	2	4	199 ⁴

IZ businesses had most frequently been operating for between 6-10 years (34%, Figure 5). Twenty per cent were 11-20 years old, with 21% operating for between 3-5 years (refer to the Appendix for a comparison with the ROC sample). Seventeen per cent had been operating for more than 21 years. Most businesses operate from only one site (82.9%), with 16 organisations stating they had between 2-28 other sites throughout New Zealand. Limited liability (35.2%), individual proprietorship (32.2%) and partnerships (24.9%) are the top three ownership types in the IZ sample population. Joint ventures, franchises, charitable companies/trusts or incorporated society make up the remaining 8%. Sixty-six per cent of operators own their business premises, with 27% renting. In terms of secondary employment, 71% of operators are solely employed by their tourism organisation. Twenty-two per cent have a second job in another organisation all year round, and 7% for part of the year (the off-season).

⁴ Note that this number differs from the total in Table 3 because the analysis used only the first column describing 'business type' (i.e. removing the multiple response).

Figure 5. Length of time the organisation has been operating (n = 200).



3.2 Impacts of the Canterbury earthquake sequence

This section details the direct and indirect impacts of the earthquakes on tourism business operations in the IZ sample. The survey inquired about the following key areas:

- Business impacts resulting from the September and February earthquakes
- Business status after the September and February earthquakes, e.g. temporary closure, open/trading
- Factors affecting the organisation, e.g. building damage, reduced visitor numbers
- Lifelines disruption, e.g. water, sewage, electricity
- Business relocation, and the factors influencing their decision to relocate
- Change in revenue
- Financial recovery (including level of debt, cash flow)
- Change in tourist types

Respondents were asked if the September and February earthquakes had any impact on their business. Three quarters stated that their business had been impacted by the September event, and 80% by the February earthquake. Business location was a significant factor^{5*} in whether or not businesses were impacted after the September event, and to a lesser extent the February earthquake (Table 6). Christchurch and Banks Peninsula businesses were widely impacted, particularly after February. Timaru and Waimakariri experienced greater impact after the February event compared to September. In contrast, Selwyn and Ashburton operators noted a lesser impact from February. Business size and type cross-tabulated with impact did not generate any significant results.

⁵ From this point onwards, an asterix indicates 99% statistical significance.

Table 6. Cross-tabulation between business location and whether businesses were impacted by the September and February earthquakes (shown as per cent).

Business Location	Impacted by September	Impacted by February	n
Christchurch	84%	94%	77
Waimakariri	47%	73%	15
Selwyn	82%	69%	17
Ashburton	79%	70%	41
Timaru	39%	72%	18
Hurunui	75%	75%	4
Banks Peninsula	92%	100%	23

As a result of the September event, 57% of businesses remained open as usual (Table 7, refer to Appendix for a comparison with the ROC sample). Twenty-three per cent closed temporarily, 11% remained open but operated fewer hours, and 7% operated longer hours. The median length of closure after September 4th was 6 days. After the February earthquake, 48% remained open as usual, with 23% closing temporarily. The mean length of closure was 7 days after February. Fourteen per cent were operating over longer hours after the February earthquake. The range of closure lengths fell between 1-185 and 1-240 days for the two earthquakes respectively. The data illustrates that shorter periods of closure were more common, but some operators did experience protracted periods of closure, particularly businesses located within the cordon in the Christchurch CBD. At the time that the survey was being completed by respondents, 94% of businesses remained open/trading, 2% were closed but intended to reopen, and 4% were permanently closed. It should be noted, however, that 15% of surveys sent to Christchurch were returned by New Zealand Post, hence 4% may not reflect the extent of business closure in some areas. More than 90% of businesses remain in the same line of business as before the earthquakes. A small proportion of operators reported having sold their business (2%), changed ownership (1%) or added/removed product lines (3%).

Table 7. Outcomes of the September and February earthquakes on business operation (shown as per cent).

	September 4th, 2010	February 22nd, 2011
Close temporarily	23%	23%
Close permanently	1%	3%
Remain open as usual	57%	48%
Remain open – fewer hours	11%	11%
Remain open – longer hours	7.1%	14%
n	169	177

Accommodation providers were significantly more likely to work longer hours after the February earthquake* (Table 8). Transport operators were significantly more likely to reduce their hours compared to other business types after the September and February earthquakes*. Activity and attraction operations were significantly more likely to close temporarily after both the September and February earthquakes compared to transport and accommodation providers.

Table 8. Outcomes of the September and February earthquakes on business operation on activity/attraction, visitor transport and accommodation businesses (shown as per cent).

	Accommodation		Activity/Attraction		Visitor transport	
	Sept 4th	Feb 22nd	Sept 4th	Feb 22nd	Sept 4th	Feb 22nd
Close temporarily	19%	20%	33%	30%	20%	18%
Close permanently	2%	4%	0	2%	0	5%
Remain open as usual	66%	51%	47%	51%	40%	32%
Remain open – fewer hours	4%	4%	16%	14%	35%	36%
Remain open – longer hours	9%	21%	4%	4%	5%	9%
n	96	96	51	57	20	22

Respondents were then asked to indicate whether a range of factors had affected their organisation after the February earthquake, and if so, how disruptive they were. Table 9 presents the factors that affected businesses and the mean level of disruption (measured on a Likert scale from 1= not at all disruptive to 4 = very disruptive). The fourth column presents a calculation of the level of disruption measured by multiplying ‘% of business affected’ by the mean level of disruption. In this way a more representative picture of the level of disruption is generated. The most disruptive factor was reduced visitor numbers, with 55% of businesses being affected, and a Disruption Factor of 1.78. Non-structural damage (fittings or fixtures) was widely reported by respondents (29%), generating a Disruption Factor of

0.52. Changes in staff wellbeing and damage to equipment were relatively disruptive (0.45 and 0.32 respectively).

Table 9. Factors affecting businesses after the February earthquake, with the mean level of disruption (from 1 = not at all disruptive to 4 = very disruptive).

Factors affecting businesses	% of businesses affected	Mean level of disruption	Disruption factor
Reduced visitor numbers	55%	3.23	1.78
Non-structural damage (fitting or fixtures)	29%	1.79	0.52
Changes in staff emotional wellbeing	22%	2.04	0.45
Damage to equipment (non-computing)	19%	1.71	0.32
Damage to ground surface	15%	1.64	0.25
Structural damage to building (integrity of building compromised)	16%	1.95	0.31
Damage to or closure of nearby buildings or organisations	12%	1.8	0.21
Damage to computers	9%	1.47	0.13
Damage to or closure of adjacent buildings or organisations	8%	1.59	0.13
Staff temporarily relocated	6%	1.44	0.08
Our organisation is located within cordoned-off	7%	1.79	0.13
Staff did not feel safe returning to the building	5.4%	1.44	0.08
Staff permanently relocated	2.4%	1.24	0.03
Physical harm to employees	0.5%	1.07	0.01

Damage and disruption to critical lifelines infrastructure was investigated in terms of effects on business, the level of disruption, and the length of the disruption (Table 10). Disruption was measured on a Likert scale from 1 = not at all disruptive to 4 = very disruptive. A disruption factor was calculated as for the question above (factors affecting businesses), illustrating that communication, electricity and road network disruptions were the most disruptive lifelines issues for tourism businesses. The length of disruption was highly variable from between 1-500 days. Mean levels of disruption suggest the majority of lifelines issues were slightly to moderately disruptive. Road network disruptions were described by several operators as continuing to affect their business at the time of writing.

Table 10. Lifelines impact on tourism businesses with the mean level of disruption (from 1 = not at all disruptive to 4 = very disruptive).

	% of businesses affected	Mean level of disruption	Disruption factor
Communications	31%	2.43	0.75
Electricity	27%	2.45	0.66
Road network	24%	2.35	0.56
Water supply	22%	2.41	0.53
Sewage or effluent	17%	2.23	0.38

Business relocations for the period after the February and September earthquakes were uncommon, with only four businesses relocated to a temporary site after the September event. After February, six businesses moved permanently and two moved temporarily. The reasons for relocating included their building being red or yellow tagged, or demolished, safety concerns about premises, lack of access into cordoned area or moving to a better location.

Operators were asked if they had needed to finance their business recovery after the February earthquake, and if so, which financial tools they used (Table 11, refer to the Appendix for a comparison with the ROC sample). Organisational cash flow was utilised by 37% of business managers, while others stated they had used savings during their recovery (22%). Insurance claims and the Earthquake Wage Subsidy (a Government subsidy to pay wages) were used by 16% and 21% respectively. Between 6-11% had used bank loans, borrowed money from family or friends, and used credit cards to support their business recovery. Respondents also described other sources of financial aid including finding casual work, using a bank overdraft facility, and receiving grants from Recover Canterbury⁶. Micro businesses were significantly less likely to use insurance claims to fund their recovery compared to larger businesses*.

⁶ Recover Canterbury is an organization focused on accelerating business recovery and preparing for future business growth.

Table 11. Financial tools used by business operators to finance their recovery after the February earthquake (multiple response = 246).

Financial tool	n	Per cent
Organisational cash flow	76	37%
Savings	46	22%
Earthquake wage subsidy	43	21%
Insurance claim	32	16%
Bank loan	22	11%
Money borrowed from family/friends	15	7%
Credit cards	12	6%

The outcomes on businesses in the aftermath of the earthquakes generated an interesting spread, ranging on a Likert scale from being 'significantly worse off' to 'significantly better off' (with 'the same' as the mid-point, Figure 6. Also refer to Appendix). Thirty per cent of businesses state they are significantly worse off after the earthquake, which made up the largest proportion of responses. Thirteen per cent report their business is significantly better off, with 22% slightly better off and 13% the same as before.

Figure 6. Outcomes of the earthquakes on business performance, shown as per cent.

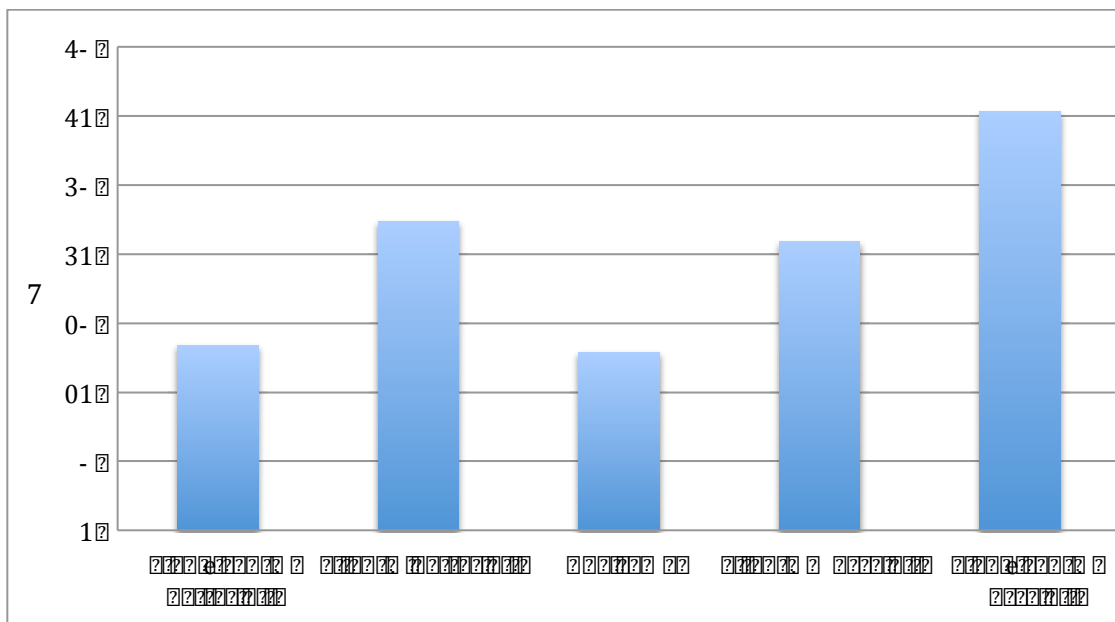
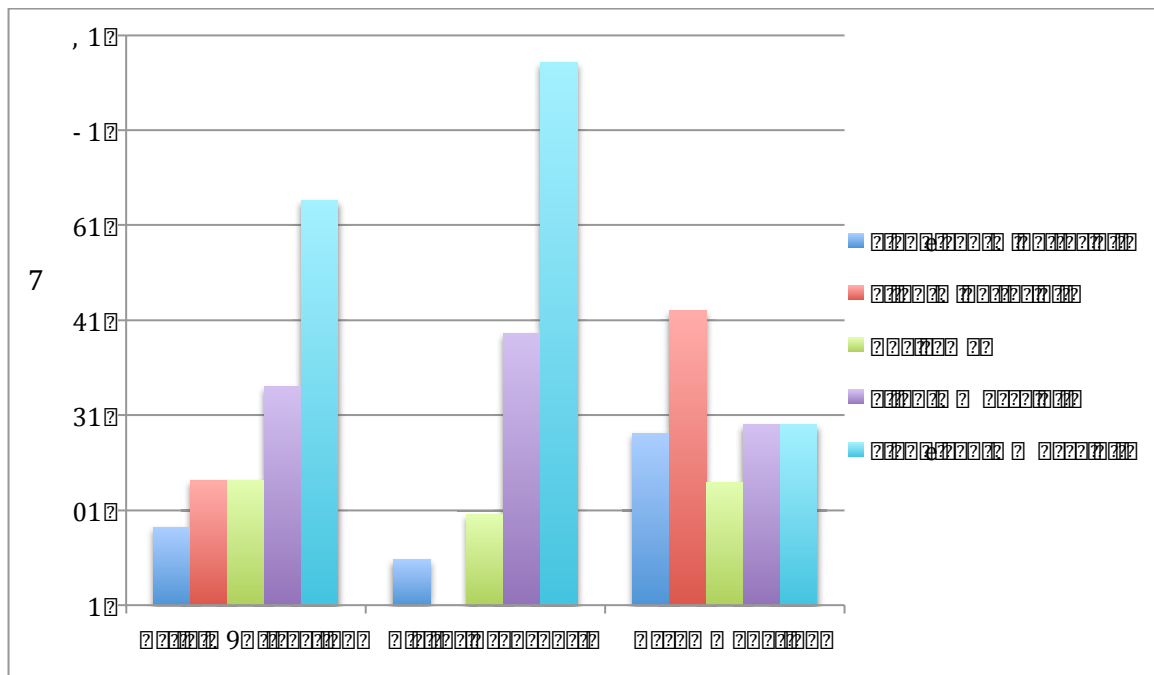


Figure 7. Business outcomes after the earthquakes for activity/attraction, visitor transport and accommodation operators (shown as per cent).



The question regarding perceived business outcomes was cross-tabulated with tourism sub-sector (activity/attraction, transport and accommodation), highlighting that post-disaster business outcomes were sector dependent*, Figure 7). The accommodation sector was significantly more likely to report positive outcomes since the earthquakes (49%) compared to activity/attraction (21%) and visitor transport (4.8%). In an accommodation sub-sector analysis, motel operators had the most positive business outcomes (72%) compared to all other accommodation types (Appendix).

With respect to business debt and cash flow, 73% of operators were positive or very positive about their level of debt. The remaining 27% were either negative or very negative. Operators were also asked to rank their cash flow on a scale from excellent to very poor (including don't know). Sixty-three per cent describe their cash flow as being good or very good, with 10% stating it is excellent. In contrast, 27% suggest cash flow in their business was poor or very poor.

Change in revenue as a result of the September earthquake (but before the February 22nd event) and after the February earthquake is illustrated in Figure 8. Both earthquakes resulted in a decrease in revenue for half of the tourism businesses in the sample. Interestingly, however, the aftermath of the February event generated a larger proportion of businesses with increased revenue compared to the September earthquake.

Figure 8. Change in revenue after September (but before February) and after February (shown as per cent).

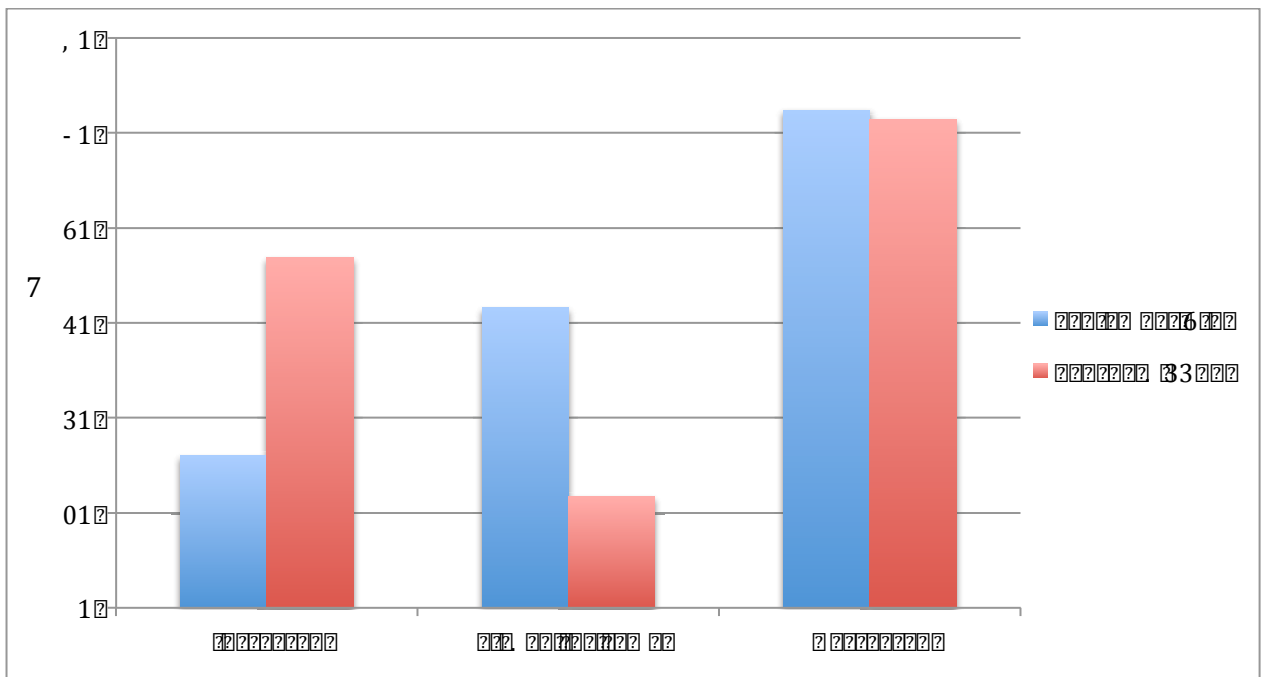
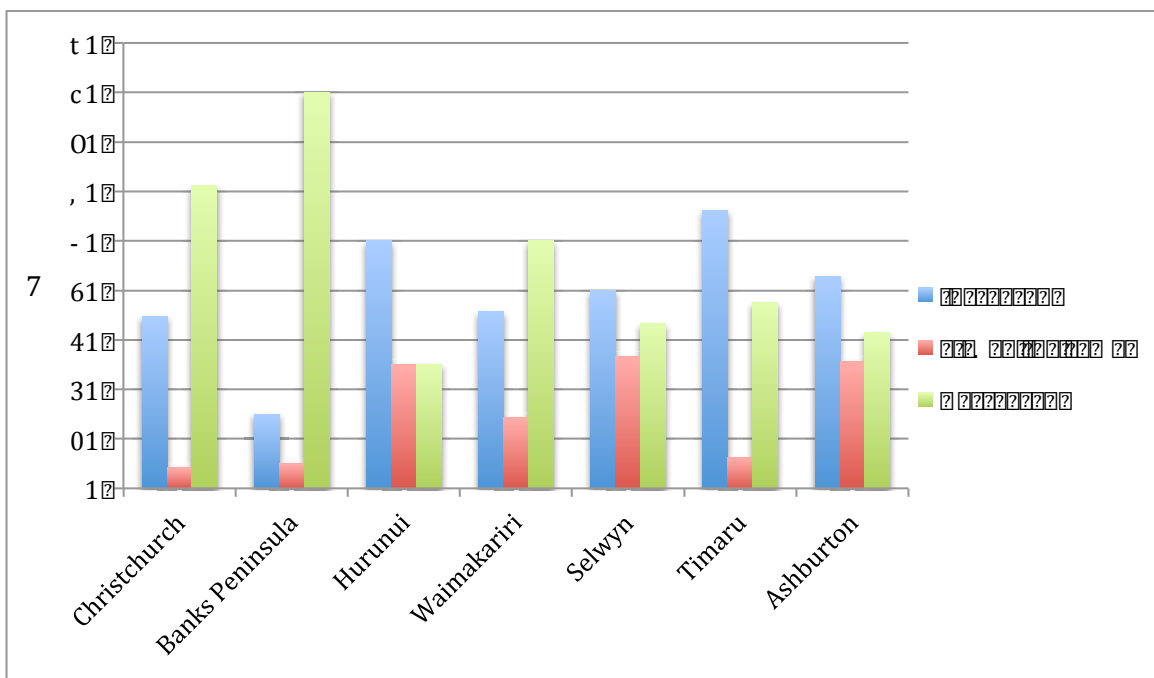


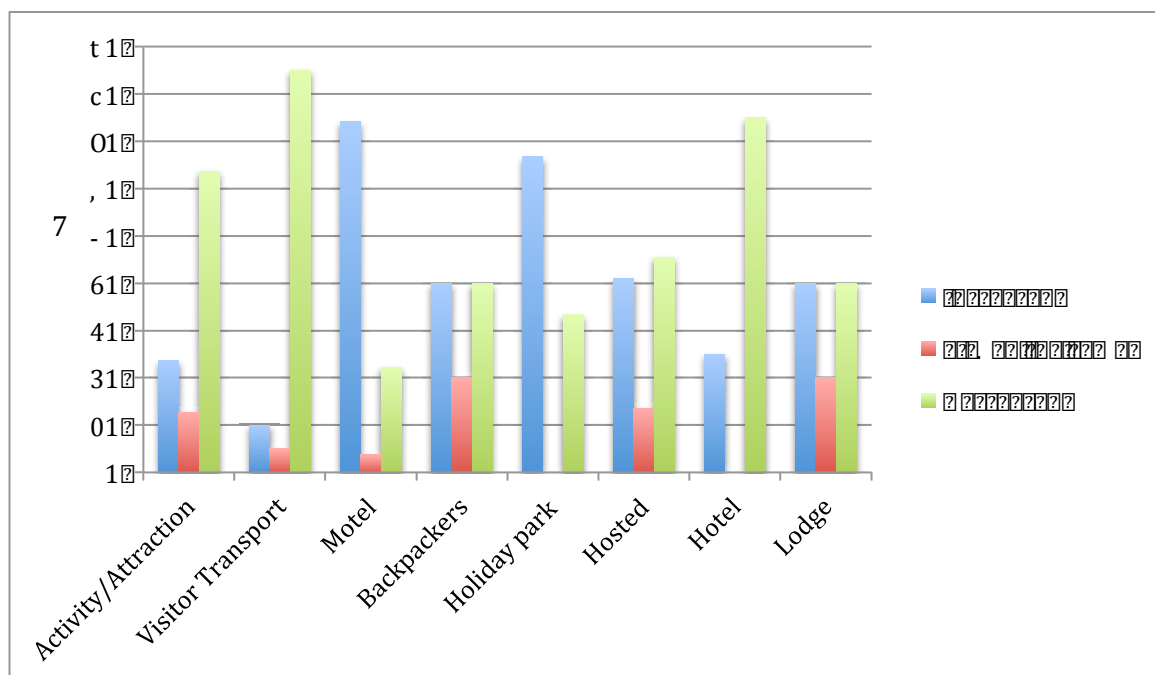
Figure 9. Change in revenue cross-tabulated with business location (shown as per cent).



Change in revenue after the February earthquake varied as a consequence of business location* (Figure 9, and also refer to the Appendix for a number of other change in revenue data tables). Banks Peninsula and Christchurch businesses suffered widespread decline in revenue after the February earthquake, with between 61-80% of businesses in these two districts reporting a reduction in revenue. A quarter of businesses from Selwyn, Ashburton and Hurunui reported no change in revenue, while 56% of Timaru businesses had increased revenue. Business size was not a significant factor in changes in revenue after the earthquakes, although each of the four business size categories had reduced revenue (52%) compared to an increase (38%), while 11% stayed the same.

Change in revenue also varied as a consequence of business type*, (Figure 10), although low cell counts for sub-sample populations should be noted (camping grounds and serviced apartments were removed from the analysis for this reason). Activity and attraction (64%) and visitor transport (85%) businesses reported declining revenues after the February earthquakes, and hotels (75%) were the worst affected accommodation sub-sector. In contrast, motel (74%) and holiday park (67%) operators were significantly more likely to report increased revenue compared to any other accommodation type in the sample.

Figure 10. Change in revenue after February 22nd cross-tabulated with business type (shown as per cent).



Operators were asked if the earthquakes had changed the types of visitors they received compared to before September 2010 (Figure 11). Seventy-six per cent stated that their visitors had changed. They were then asked to indicate the relative change (increase, decrease or about the same) in the number of local visitors (from their town or area), regional visitors (from Canterbury), national (domestic NZ visitors) and international visitors. The most striking result was the decrease in the international market reported by 75% of respondents. Changes to the number of local visitors were noted by approximately 30% in each case, with a larger increase in visitors from within Canterbury (42%). Domestic visitors from the rest of New Zealand declined for 44% of operators. Data on the change in visitor arrivals by sub-sector are in the Appendix.

Figure 11. Change in the types of visitors to tourism businesses after the earthquakes (shown as per cent).

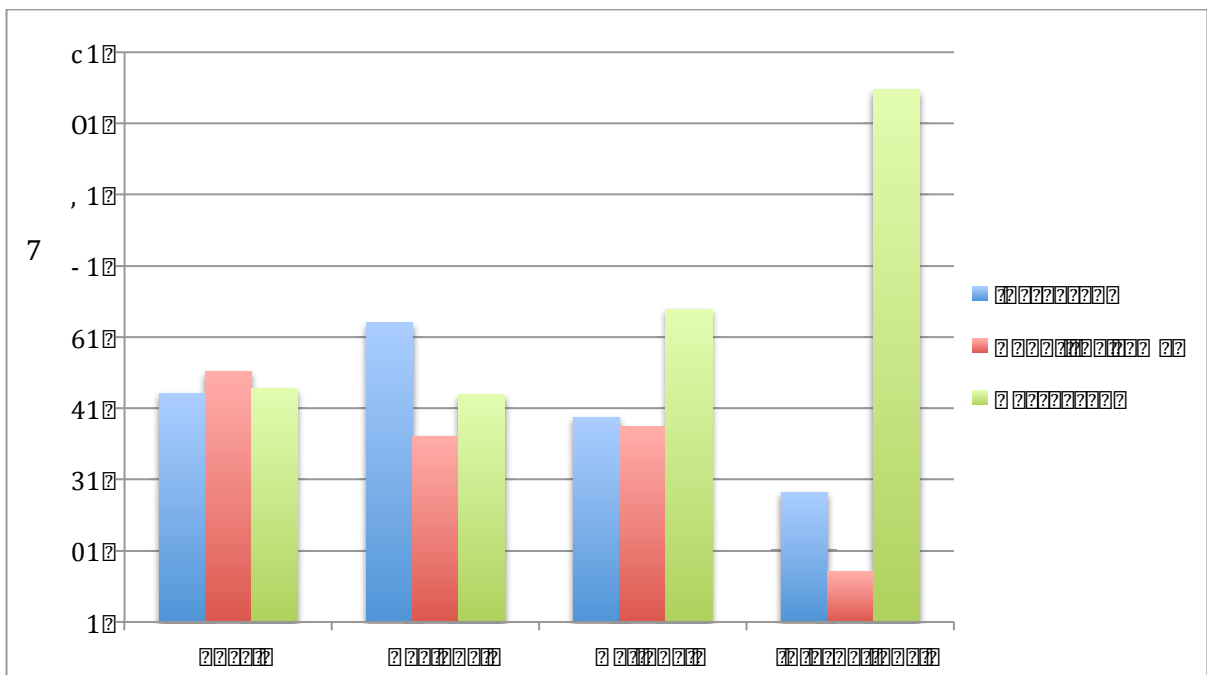
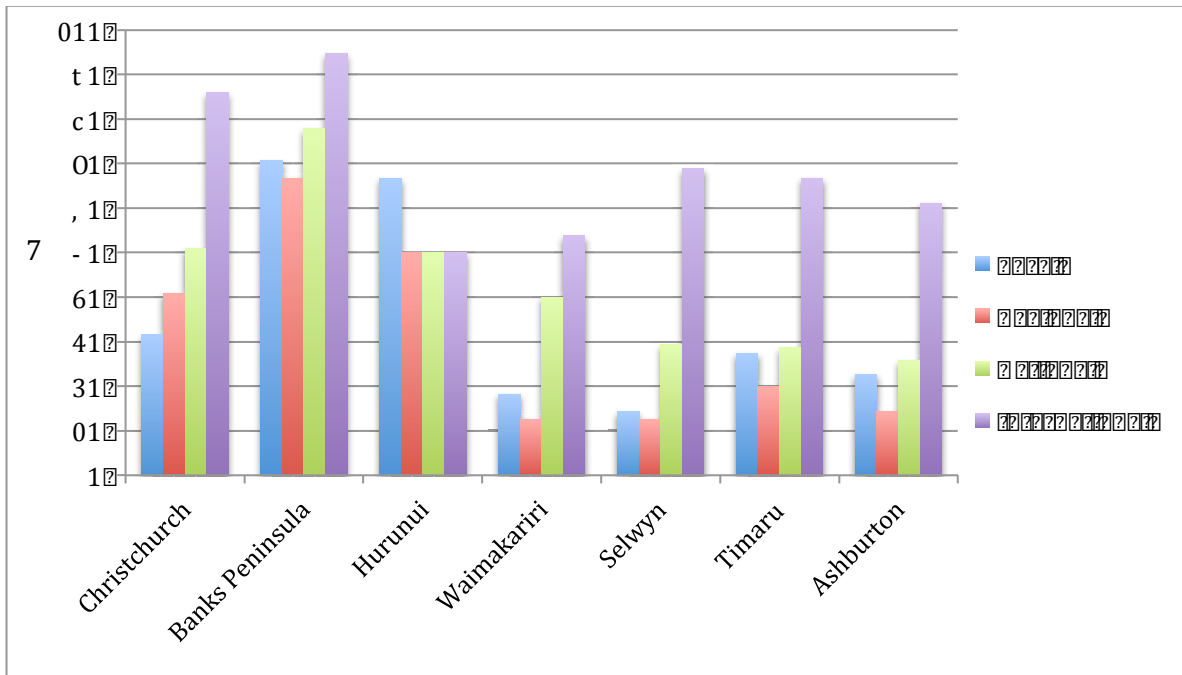
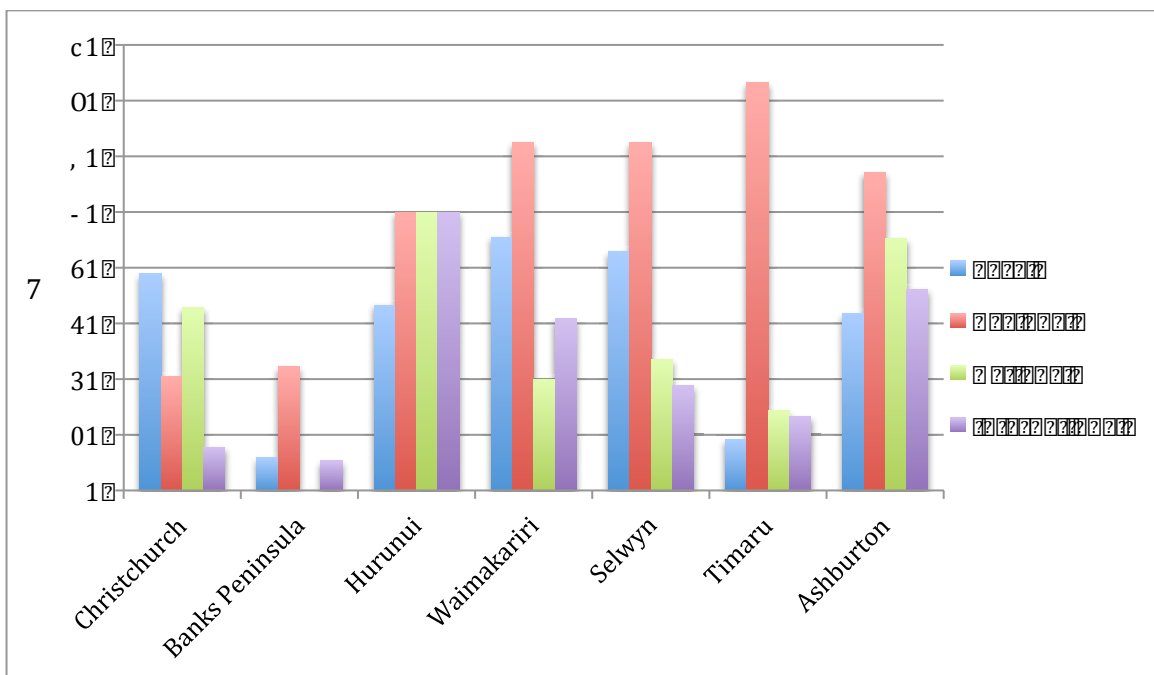


Figure 12. Reported declines in local, regional, national and international visitor numbers from affected districts after the February earthquake, shown as per cent.



Changes in visitor types varied as a consequence of location. Banks Peninsula was particularly hard hit by declines of 67% or higher across all four categories (Figure 12). Christchurch operators reported a significant drop in international visitor numbers (86%), as did all districts to varying degrees*. Figure 13 illustrates the reported *increases* in local, regional, national and international visitors to their business operation. Most notably, regional visitor numbers increased in Waimakariri, Selwyn, Timaru and Ashburton by 57-73%*.

Figure 13. Reported increases in local, regional, national and international visitor numbers from affected districts after the February earthquake, shown as per cent.



Some business types were impacted by changes in visitor type more than others. Activity/attraction and visitor transport businesses were significantly more likely to report a decline in international visitor numbers*. In contrast, accommodation businesses were significantly more likely to report increases from all markets (Appendix).

3.3 Insurance and staffing issues

This section details results relating to insurance and staffing issues, specifically:

- Insurance types prior to the earthquakes
- Changes to insurance products after the earthquakes
- Insurance claims resulting from the earthquakes
- Adequacy of insurance policies
- Changes in staffing, e.g. redundancy, hiring and staff leaving voluntarily

Tourism operators were asked if they were insured, and if so, which types of insurance they had prior to the September 4th earthquake (Table 12). Only five tourism businesses within our sample were uninsured before the earthquakes. The most common insurance product is property and building, with 82% of the total sample having this prior to the earthquakes. Public liability (81%) and motor vehicle (78%) are also widely used. Business interruption insurance and cash flow and income protection were the least common forms of insurance protection, with 44% and 28% respectively. It should be noted, however, that respondents frequently selected both of these very similar options, thus this result may over-represent the number of businesses with these types of insurance. Next, operators were asked if they had changed their insurance policies after the earthquakes. The majority had not (84%), while 10% had made some changes. Six operators suggested they would like to purchase insurance, but believed it was 'impossible' as a result of the earthquakes. No one had chosen not to purchase insurance following the earthquakes.

Table 12. Insurance products being used by tourism operators, shown as frequency and per cent (N = 205).

Insurance type	n	Per cent
Property and buildings	169	82%
Public liability	166	81%
Motor vehicle	160	78%
Organisation assets and equipment	121	59%
Business interruption insurance	90	44%
Cash flow and income protection	58	28%

Insurance claims following damaging earthquakes during the Canterbury sequence were investigated (Table 13). The majority of respondents had not made any claims (48%), while

27% made one claim, and 16% made two claims. Nine per cent of operators made 3-4 claims for different earthquake events. Thirty-eight per cent of operators made a claim after the September earthquake compared with 31% after the February event. Other earthquakes for which insurance claims were reportedly made included the December 26th 2010. Accommodation operators were significantly more likely to have made up to four claims* while 76% of visitor transport and 64% of activity/attractions operators did not make any claims (refer to an additional data table in the Appendix).

Table 13. Insurance claims after damaging Canterbury earthquake sequence events (N=205).

Earthquake event	n	Per cent
September 4 th 2010	78	38%
February 22 nd 2011	64	31%
June 13 th 2011	18	9%
December 23 rd 2011	10	5%

The majority of operators are satisfied that their insurance cover was adequate after the earthquakes (69%). Nine per cent did not believe their cover was sufficient, and 16% did not know. Operators were then asked to describe their relationship with their insurer on a Likert scale from very dissatisfied to very satisfied (neutral as the mid-point). Only 12% are negative about their insurer, with 52% stating they are satisfied or very satisfied. A third of the sample was neutral in their views.

Changes in staffing as a consequence of the earthquakes revealed that few employees left voluntarily. For the 19% of businesses that did lose staff voluntarily, 79% lost 1-2 full time employees, with up to six reportedly leaving from one organisation (Table 14). A total of 47 fulltime and 47 part time staff left voluntarily, and 14 temporary staff left voluntarily. Staff were made redundant by 20 organisations, or 10% of the total sample. The total number of fulltime staff made redundant was 33, with 39 part time and 8 temporary staff losing their jobs. Almost a third of tourism businesses hired new staff after the earthquakes. Tourism businesses hired a total of 39 fulltime, 111 part time and 33 temporary staff after the February earthquake.

Table 14. Staff losses and gains after the earthquakes.

Staff losses and gains	n	Per cent
New staff were hired	60	29%
Staff voluntarily left the organisation	38	19%
Staff were made redundant	20	10%

3.4 Business resilience and preparedness

This section describes preparedness and resilience findings from the survey, including:

- Tourism recovery perceptions
- Resilience indicators
- Emergency response
- Staff induction
- Risk/crisis/emergency management roles in the organisation
- Formal written crisis planning
- The presence/absence of back-up IT facilities

A suite of questions investigating tourism recovery and preparedness after the earthquakes was measured using a 4-point Likert scale from strongly agree to strongly disagree (Table 15). Recovery of the tourism industry generated the highest mean of 3.49, with only 5.5% perceiving the sector had 'bounced back to where it was before the earthquakes'. More than 70% agreed that the earthquakes had changed the types of visitors to their organisation, which supports the findings of an earlier question about local, regional, national and international visitor dynamics. The statements about how Tourism New Zealand and Christchurch Canterbury Tourism responses to the earthquakes generated similar results, showing support for the approaches taken.

Generally, tourism operators are happy with their current levels of business preparedness, and that valuable lessons have been learnt as a result of the earthquakes. The statement 'Our business is still struggling' generated a wide spread in the data, with 53% agreeing and 46% disagreeing. The lowest mean score of 1.51 illustrated a strong perception that damage to roads and buildings had reduced the visitor experience.

Table 15. Tourism recovery statements measured on a Likert scale from strongly agree (SA) to strongly disagree (SDA), including 'don't know' as frequency per cent, and mean.

	SA	A	DA	SDA	Don't know	Mean
The damage to our buildings and roads has reduced the visitor experience of Christchurch	51%	41%	2%	1%	6%	1.51
We have learnt valuable lessons from the earthquakes	18%	62%	8%	3%	10%	1.93
The earthquakes changed the types of visitors we receive	20%	53%	17%	2%	7%	2.01
We are now much better prepared to deal with a future disaster	10%	61%	14%	1%	13%	2.07
We are happy with our current level of preparedness for future earthquakes	9%	70%	12%	3%	8%	2.09
The Canterbury Christchurch Tourism response was appropriate at the time	7%	52%	13%	8%	20%	2.29
The Tourism NZ response was appropriate for <i>New Zealand</i> at the time	2%	54%	11%	7%	26%	2.30
The Tourism NZ response was appropriate for <i>Canterbury</i> at the time	3%	50%	12%	9%	26%	2.37
Our business is still struggling	18%	35%	29%	17%	1%	2.45
The tourism industry has bounced back to where it was prior to the earthquakes	2%	4%	35%	53%	7%	3.49

When the suite of tourism recovery statements was cross-tabulated with business type one statistically significant result was generated; business type was found to correlate with the statement 'Our business is still struggling'. Accommodation businesses were more likely to disagree that 'Our business is still struggling' (58%), compared to 23% of visitor transport and 32% of activity/attraction operators.

Back-up IT facilities are not being used by 49% of respondents (n = 188), with 44% having a back-up facility, and 7% unsure of their current situation. The types of facilities being used include maintaining an external hard drive, memory stick or laptop back-up off site, cloud-based back-ups, web-based reservation systems, CD and paper copies of important documents. Staff inductions are being used by 38% of businesses, but only 14% of businesses included any reference to how to respond in an earthquake.

Of 191 responses to the question, 68% of tourism operators had not practiced how to respond in an emergency. Operators were asked to indicate if they had crisis/emergency plans or business continuity plans a) prior to the September earthquake, b) after the September earthquake but before the February earthquake or c) currently (Table 16). The use of crisis and emergency planning has increased over each of the three timeframes, with current levels at 37%. There are also slight increases in business continuity planning, with 34% of operators currently having these plans in place.

Table 16. Crisis/emergency/continuity planning in tourism businesses, shown as per cent.

	Prior to September 4	Between September and February	Currently
Crisis/emergency plans	24%	30%	37%
Business continuity plans	26%	28%	34%

Operators were asked if these plans were of a sufficient standard to be useful in an emergency. Forty-four per cent are confident their plans are sufficient, with 14% unsure and 6% disagreeing. A total of 27% of the sample do not have any of these plans in place. The reasons given for a lack of formal planning include their small size, a reliance on informal planning, lack of time, interest and knowledge about how to make plans, and a belief that they would have the ability to deal with a situation as it arose. One respondent commented 'For the scale of our business, we can cope with most eventualities.' Another stated 'Formal crisis planning = husband and wife discussion'. The micro-scale of many businesses in the sample is also reflected by other comments; 'My organisation is me, myself and I and it is all in my head'. Others take an alternative approach: 'We have a very fluid decision-making process that does not need to isolate CRISIS THINKING [sic] from any other daily/weekly/monthly decision. It's just another decision to be made during circumstances arising'.

The proportion of tourism businesses with staff dedicated to performing crisis, risk or emergency management, or business continuity planning was variable between 27-42% (Table 17). Thirty-eight per cent did not have staff focused on these roles.

Table 17. Planning roles in IZ tourism organisations with dedicated staff to perform them.

Roles	n	Per cent
Risk management	72	35%
Crisis management	56	27%
Emergency management	74	36%
Business continuity	87	42%
None of these	78	38%

The Resilient Organisations Research Programme has developed and tested a suite of organisational resilience questions that have been replicated across a number of business sectors before and after the Christchurch earthquakes. As a result of statistical analysis of the results of these surveys, thirteen resilience questions were found to offer a useful proxy of the full suite of 54 questions. These 13 questions were included in the tourism sector survey on a Likert scale from strongly agree to strongly disagree (no mid-point, Table 18).

The statements with the lowest mean scores (or the most agreement) are related to problem solving within the organisation (1.66), good leadership in crisis (1.72) and an ability to make tough decisions quickly (1.80). The most disagreement was generated by questions relating

to building relationships with organisations that they might have to work with in a crisis (2.07), maintaining sufficient resources to absorb unexpected change (2.08) and the ability of staff to fill roles if key people are unavailable (2.17). There were no statistically significant differences in resilience profiles between organisations of different sizes or types.

Table 18. Thirteen organisational resilience indicators, shown as row frequency per cent, and mean scores.

	SA	A	DA	SDA	Don't know	Mean
People in our organisation are committed to working on a problem until it is resolved	36%	61%	2%	0	1%	1.66
There would be good leadership from within our organisation if we were struck by a crisis	31%	60%	3%	1%	5%	1.72
We can make tough decisions quickly	26%	68%	4%	1%	1%	1.80
We are known for our ability to use knowledge in novel ways	18%	56%	6%	0	21%	1.86
Given our level of importance, the way we plan for the unexpected is appropriate	11%	62%	6%	0	11%	1.93
We believe emergency plans must be practised and tested to be effective	15%	65%	8%	1%	12%	1.93
We have a focus on being able to respond to the unexpected	17%	61%	12%	0	10%	1.95
We proactively monitor our industry to have an early warning of emerging issues	14%	63%	9%	1%	12%	1.97
There are few barriers stopping us from working well with other organisations	15%	68%	8%	2%	8%	1.97
We have clearly defined priorities for what is important during and after a crisis	16%	57%	14%	1%	12%	1.99
We build relationships with organisations we might have to work with in a crisis	12%	62%	16%	2%	9%	2.07
Our organisation maintains sufficient resources to absorb some unexpected change	11%	69%	14%	2%	5%	2.08
If key people are unavailable, there are always others who could fill their role	11%	59%	17%	4%	9%	2.17

4. Rest of Canterbury

The Rest of Canterbury (ROC) analysis is presented in the same structure as for the Impact Zone (IZ). It must be noted, however, that the smaller sample population of the ROC made cross-tabulating the full range of results impractical, hence very few statistically significant results are presented in this section.

4.1 Business profile

In the ROC sample population, almost two thirds of tourism operations are accommodation providers, with 31% offering activity/attraction products, and 4% visitor transport (multiple response n = 63, Table 19). Motels make up 20% of the total sample, followed by hosted accommodation (14%), holiday parks and lodges (both 8%).

Table 19. Tourism business type. (Note, the accommodation category shown in parentheses is not included in the column total).

Business Type	n	Per cent
Attraction / Activity	24	31%
Visitor Transport	3	4%
Accommodation	(50)	(65%)
Motel	15	20%
Backpackers	4	5%
Holiday park	6	8%
Hosted (B&B, Farmstay)	11	14%
Hotel	3	4%
Camping ground	2	3%
Lodge	6	8%
Serviced apartment	3	4%
TOTAL	77	100.0%

Length of business operation in the ROC was most commonly between 11-20 years (28%), and 6-10 years (28%, refer to the Appendix for a comparison with the IZ sample). Businesses older than 20 years made up 20% of the sample. The use of multiple business locations/sites is uncommon, with 86% of the sample based at one site. Five operators stated that they had between 2-8 other locations in New Zealand. Limited liability companies are the most common ownership structure (48%), followed by partnerships (27%) and individual proprietorships (21%). A quarter of ROC operators rent their business premises, with 68% owning it. Tourism operators in this sample are most commonly employed solely by their business (77%), however 15% have a second job all year round, and 8% for part of the year.

Tourism businesses are typically micro in size, with 74% of the sample employing fewer than 5 staff. Small businesses comprise 24%, and 2% are medium-sized businesses. There are no large businesses in the ROC sample. Cross tabulating number of employees with business type was not possible due to the small sub-sample populations.

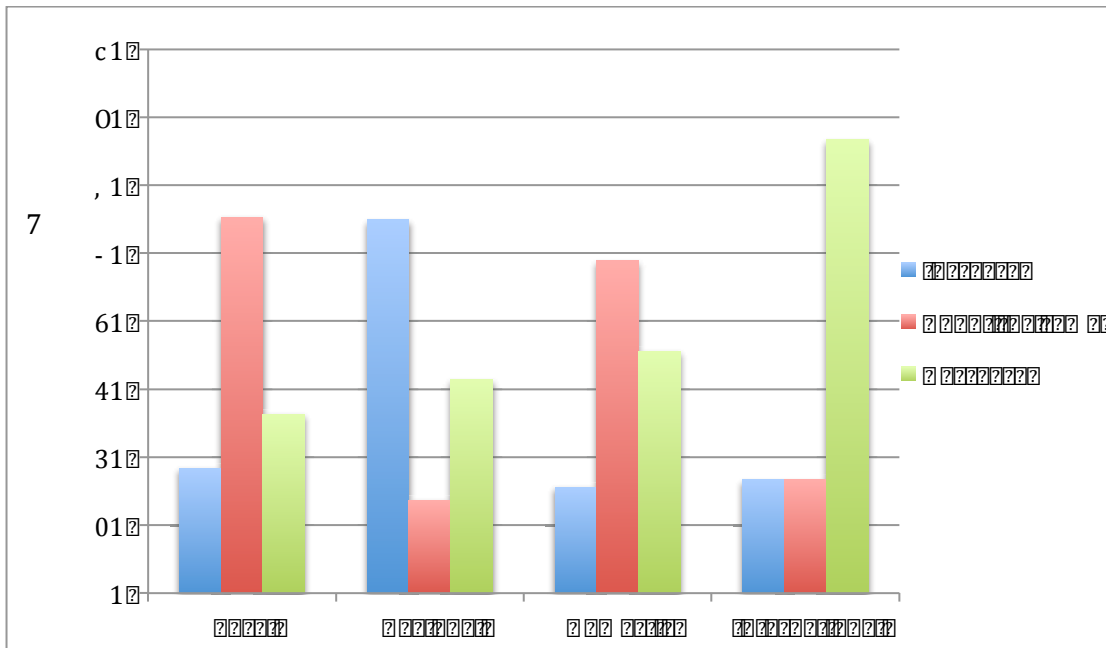
4.2 Impacts of the Canterbury earthquake sequence

The September 4th earthquake had only a minor impact on tourism organisations outside of the impact zone, with 91% remaining open as usual, and only a small proportion changing their hours to accommodate the post-earthquake situation. Similarly, the February earthquake resulted in 89% remaining open as usual, with 3.2% closing temporarily, 5% opening for fewer hours and 3% for longer hours (refer to Appendix for a comparison with the IZ sample). Only one organisation reported closing for a period of 20 days. Business location had no influence over whether or not they remained open after the earthquakes. Financial recovery was not required by 81% of organisations, however 18% did need to find additional funds in the aftermath of the earthquakes. Of these, 8% used bank loans, 5% savings, 3.2% organisational cash flow and 1.6% borrowed money from friends (Refer to the Appendix for a comparison with the IZ sample). Currently 94% of respondents said they are in the same line of business, with only small proportions changing ownership or adding new product lines.

Although the earthquakes had not significantly impacted business operations, the types and numbers of visitors had changed for 87% of ROC organisations (Figure 14). Again, the most striking result was the reported decline in international visitors, with 67% of businesses receiving fewer from this market segment. Regional visitor numbers increased for 55% of businesses. Local and domestic visitation remained about the same for approximately half of ROC businesses. While the small sub-sample population sizes must be taken into account, Kaikoura and Hurunui operators report increased numbers of regional visitors compared to the other districts in the ROC sample.

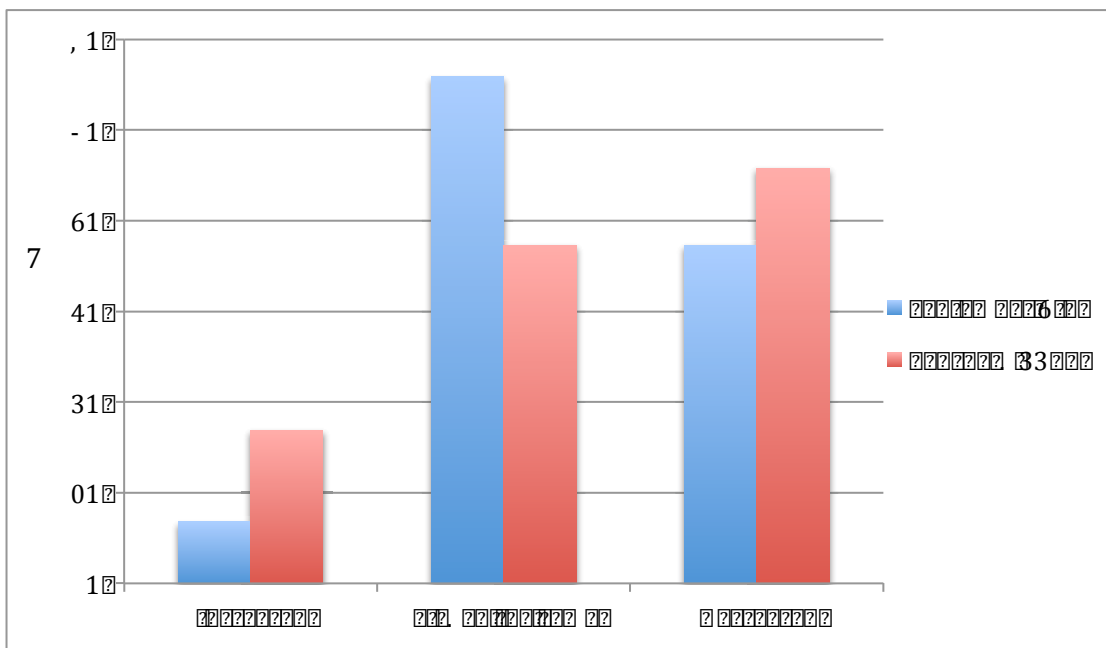
Space was provided for respondents to write comments about changes to visitor types, and one stated 'International visitors did not visit the South Island. This could also have been attributed to the global recession and high dollar'. Others described a 'big drop-off' in the Japanese market, and the fact that Australian visitors were changing their itineraries to remove Christchurch and stay elsewhere in Canterbury. Another commented that there was 'no [rugby] World Cup spin-off at all' after the games scheduled for Christchurch were relocated.

Figure 14. Change in the types of visitors to tourism businesses after the earthquakes (shown as per cent).



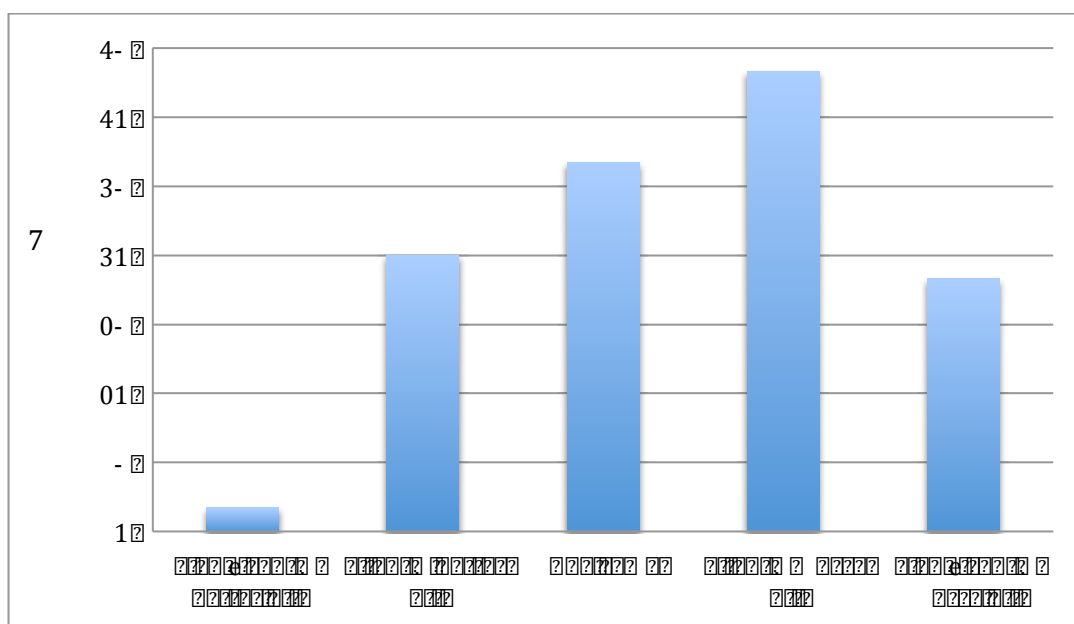
After the September 4th earthquake, 56% of respondents stated that their revenue stayed the same, while 38% experienced a decrease in revenue and 7% an increase. In contrast, the February earthquake resulted in 16% of businesses receiving increased revenue, with 45% reporting a decrease (Figure 15). Cross tabulations with business location illustrated that decreased revenue was common throughout the ROC, particularly in Kaikoura* (70%).

Figure 15. Change in revenue after September (but before February) and after February (shown as per cent).



Twenty-two per cent of operators said their business is either significantly or slightly better off after the earthquakes (Figure 16). The majority, however, are worse off (51%) and 27% are the same as before.

Figure 16. Outcomes of the earthquakes on business performance, shown as frequency per cent.



Tourism operator perceptions of their level of business debt was positive or very positive for 75% of respondents, with 18% feeling negative and 7% very negative about their current debt levels. Cash flow is considered good or very good by 71% of operators, and poor or very poor for a quarter of the sample. Five per cent believe their cash flow is excellent.

4.3 Insurance and staffing issues

Only one tourism operator in the sample was uninsured prior to the Christchurch earthquakes, while the remaining 97% had various forms of insurance cover. These included public liability held by 89% of businesses, property and buildings (83%), and motor vehicle (81%, Table 20). Business interruption and cash flow and income protection were the least common forms of insurance with 41% and 27% respectively. After the earthquakes, 82% have not changed their policy/ies, while 15% had made some changes. One operator had chosen not to purchase insurance after the earthquakes.

Table 20. Insurance products being used by tourism operators, shown as frequency and per cent (N = 63).

Insurance type	n	Per cent
Public liability	56	89%
Property and buildings	52	83%
Motor vehicle	51	81%
Organisation assets and equipment	35	56%
Business interruption insurance	26	41%
Cash flow and income protection	17	27%

Insurance claims after the earthquakes were made by very few operators, with only 3-4 making claims (Table 21). No claims were made as a result of the June 13th aftershock, and only one after the December 23rd aftershock. Seventy-eight per cent were satisfied with their insurance cover after the earthquakes, while 19% were unsure and 3% were dissatisfied. Rating their relationship with the insurer illustrated that 55% are either satisfied or very satisfied, 43% are neutral and 2% are dissatisfied.

Table 21. Insurance claims after damaging Canterbury earthquake sequence events (N=63).

Earthquake event	n	Per cent
September 4 th 2010	3	5%
February 22 nd 2011	4	6%
June 13 th 2011	0	0
December 23 rd 2011	1	2%

Staffing changes as a consequence of the earthquakes were investigated. No redundancies were made by any of the sample population (Table 22). Some staff left the organisation voluntarily, with four operators reporting that between 1-3 full time, 2-10 part time and < 4 temporary staff had left their jobs. For most, the reason for leaving was because they moved out of town, while one person left for another job in a different industry. New staff members were hired by 17 organisations.

Table 22. Staff losses and gains after the earthquakes.

Staff losses and gains	n	Per cent
New staff were hired	17	27%
Staff voluntarily left the organisation	6	10%
Staff were made redundant	0	0

4.4 Business resilience and preparedness

Tourism operators do not perceive that the tourism sector has ‘bounced back to where it was prior to the earthquakes’, and this statement generated the highest mean score of 3.10 on a scale from 1 = strongly agree to 4 = strongly disagree, with don’t know excluded from the mean calculation (Table 23). Changes to the types of visitors that organisations received were noted by two thirds of the sample, with 23% experiencing no change. The statements about tourism agency responses to the earthquakes suggests general support for the efforts of Tourism New Zealand and Christchurch Canterbury Tourism, although these questions generated a large proportion of uncertainty (32-42%). Two-thirds of respondents are happy with their current level of preparedness for future earthquakes, and 80% agree they have learnt valuable lessons since the earthquakes. The statement ‘Our business is still struggling’ generated a mixed response, with 54% disagreeing and 44% agreeing. There was strong agreement that damage to buildings and roads had reduced the visitor experience (85%), and the lowest mean score of any statement on 1.62.

Table 23. Tourism recovery statements measured on a Likert scale from strongly agree (SA) to strongly disagree (SDA), including 'don't know' and mean.

	SA	A	DA	SDA	Don't know	Mean
The damage to our buildings and roads has reduced the visitor experience of Christchurch	34%	50%	2%	0	13%	1.62
We have learnt valuable lessons from the earthquakes	7%	74%	10%	0	10%	2.04
The Tourism NZ response was appropriate for <i>New Zealand</i> at the time	2%	45%	10%	2%	42%	2.19
The Canterbury Christchurch Tourism response was appropriate at the time	2%	51%	10%	3%	32%	2.22
We are happy with our current level of preparedness for future earthquakes	5%	60%	21%	3%	10%	2.25
We are now much better prepared to deal with a future disaster	3%	59%	20%	3%	15%	2.27
The earthquakes changed the types of visitors we receive	2%	64%	20%	3%	12%	2.28
The Tourism NZ response was appropriate for <i>Canterbury</i> at the time	0	45%	16%	3%	36%	2.35
Our business is still struggling	10%	34%	44%	10%	2%	2.55
The tourism industry has bounced back to where it was prior to the earthquakes	3%	14%	42%	29%	12%	3.10

Currently, 42% of tourism businesses do not have back-up IT facilities, while 48% do back up data and 10% don't know what their IT situation is. Those with backups reported using off site systems, external hard drives, drop boxes, memory sticks, online cloud-based facilities and web-based reservation systems. Staff inductions are being carried out by 49% of business, but only 13% businesses include a procedure to be followed in the event of an earthquake.

More than half of business managers have not practiced how they would respond in an emergency. Crisis/emergency plans or business continuity plans had generally increased slightly prior to and since the earthquakes, with current levels reportedly at 41% (Table 24). Operators were asked if these plans were of a sufficient standard for use during an emergency. Fifty-two per cent were satisfied their plans are sufficient, with 11% unsure and 11% disagreeing. Twenty-six per cent did not have any of these plans in place. Some respondents offered comments on their lack of planning, including 'I'm sure we will cope adequately with crisis. What makes New Zealand lose its "wire number 8" approach is overregulation – let people use their common sense'. Others referred to the small-scale nature of their business without any employees, and the informal nature of their approach that involves conversations with their business partner and/or employees. Some described that they did not think planning is worthwhile, or that they did not have the time or understanding to engage in planning.

Table 24. Crisis/emergency/continuity planning in tourism businesses, shown as per cent.

	Prior to September 4	Between September and February	Currently
Crisis/emergency plans	35%	33%	41%
Business continuity plans	32%	33%	41%

Between 41-46% of businesses have staff dedicated to managing risk and business continuity management roles in the organisation (Table 25). In contrast, 37% of businesses do not.

Table 25. Planning roles in ROC tourism organisations with dedicated staff to perform them.

Roles	n	Per cent
Risk management	29	46%
Crisis management	26	41%
Emergency management	30	48%
Business continuity	29	46%
None of these	23	37%

The suite of thirteen resilience questions produced some interesting results (Table 26). The lowest mean scores (or the most agreement) were generated by questions related to problem-solving (1.78), good leadership (1.80) and there being few barriers to working well with other organisations (1.91). The strongest disagreement came from statements relating to filling roles if key people are unavailable (2.23), proactively monitoring the industry for emerging issues (2.12) and building relationships with organisation before crises (2.07).

Table 26. Thirteen organisational resilience indicators, shown as row per cent, and mean scores.

	SA	A	DA	SDA	Don't know	Mean
People in our organisation are committed to working on a problem until it is resolved	22%	70%	2%	0	7%	1.78
There would be good leadership from within our organisation if we were struck by a crisis	22%	67%	3%	0	8%	1.80
There are few barriers stopping us from working well with other organisations	13%	73%	5%	0	8%	1.91
We can make tough decisions quickly	20%	68%	10%	2%	0	1.93
We believe emergency plans must be practised and tested to be effective	19%	69%	9%	2%	2%	1.93
We are known for our ability to use knowledge in novel ways	17%	58%	10%	2%	14%	1.96
Given our level of importance, the way we plan for the unexpected is appropriate	12%	71%	9%	2%	7%	2.00
We have clearly defined priorities for what is important during and after a crisis	13%	68%	13%	2%	3%	2.03
We have a focus on being able to respond to the unexpected	14%	68%	14%	2%	3%	2.04
Our organisation maintains sufficient resources to absorb some unexpected change	10%	70%	10%	2%	8%	2.04
We build relationships with organisations we might have to work with in a crisis	12%	68%	15%	2%	3%	2.07
We proactively monitor our industry to have an early warning of emerging issues	13%	63%	12%	7%	5%	2.12
If key people are unavailable, there are always others who could fill their role	8%	62%	20%	5%	5%	2.23

5. Discussion

This section discusses the findings from the IZ and ROC surveys, and compares and contrasts the two sample populations where appropriate. The headings used in the two previous sections will be replicated to address issues in the areas of impacts, insurance and preparedness and resilience.

5.1 *Impact Zone and Rest of Canterbury business profiles*

The proportion of business types is very similar between the two sample populations, with 61-65% involved in accommodation services (Table 27). There are a larger number of visitor transport businesses in the IZ sample (14%) compared to 4% in the ROC, which is a function of Christchurch acting as a tourism hub for travel around the region. In the ROC, there are more motels at the expense of hosted accommodation compared to the IZ sample. The other questions that profiled businesses generated very similar responses, notably the proportion of micro businesses (74-76%) in the two samples (Appendix).

Table 27. Comparing business type in the IZ and ROC samples.

Business Type	n		Per cent	
	IZ	ROC	IZ	ROC
Attraction / Activity	62	24	26%	31%
Visitor Transport	33	3	14%	4%
Accommodation	(147)	(50)	(61%)	(65%)
Motel	34	15	14%	20%
Backpackers	15	4	6%	5%
Holiday park	8	6	3%	8%
Hosted (B&B, Farm stay)	53	11	22%	14%
Hotel	8	3	3%	4%
Camping ground	3	2	1%	3%
Lodge	17	6	7%	8%
Serviced apartment	9	3	4%	4%
TOTAL	242	77	100%	100%

5.2 *Impacts*

- Tourism operators across all districts in the IZ reported that the September and February earthquakes had impacted their business. Banks Peninsula, Christchurch city and Selwyn were particularly badly affected after the September earthquake due to their close proximity to the epicentre of the Darfield earthquake, while Selwyn was less affected by the February event.

- Impacts to the Rest of Canterbury related mainly to changes in the types of visitors they received compared to before the earthquakes. Two-thirds of ROC operators had experienced a drop in the number of international visitors to their business. More than half reported increases in the number of visitors from the Canterbury region, while local and domestic visitors were mainly the same as before the earthquakes.
- Temporary business closure after the two main earthquakes was relatively common in the IZ sample population, more so following the February earthquake as expected. Closures in the ROC were uncommon, with few businesses changing their operating hours as a consequence of the earthquakes.
- Half of accommodation businesses in the IZ sample reported being better off after the earthquakes. Three-quarters of motel operators reported increased revenue after February, while hotels reported lower revenue. This result supports the most recent Commercial Accommodation Monitor data for Canterbury Year Ending May 2012 showing a 26% increase in occupancy rate for motels compared to Year Ending May 2011. In contrast, hotels and backpackers were down 54% and 35.4% respectively. Motels are being used as an alternative by visitors who would normally choose hotels. They are typically low-rise buildings, and they are located throughout the city and suburbs, and received much less overall damage. In the Rest of Canterbury, the earthquakes had not significantly impacted business operations, however, the types and numbers of visitors had changed for 87% of ROC organisations.
- In the IZ sample, transport businesses were hard hit, particularly in Christchurch. They were significantly more likely to work reduced hours, and only 5% reported being slightly or significantly better off after the earthquakes. Eighty-five per cent of visitor transport operators reported a decline in revenue after the February earthquake. Visitor transport operators serve the tourism industry by moving tourists within and between destinations, interacting with accommodation and activity/attraction networks. The significant drop in both international and domestic visitation had been a major blow to this sector of the industry. Recovery is dependent on the rebuild of the critical tourism infrastructure in Christchurch, at which point visitors will be attracted back to the city in sufficient numbers to regenerate this sector. The small number of transport businesses in the ROC sample did not allow for comparable cross tabulations to be carried out.
- Activity/Attractions operations in the IZ sample were also hard hit by the earthquakes. They were significantly more likely to close temporarily and almost two-thirds reported a decline in revenue after the February earthquake. They were also significantly more likely to report a decline in arrivals from all market segments, particularly international visitors. Activity and attraction businesses are heavily reliant on inbound visitors, especially international visitors. They are often larger than other tourism sectors, and while that has the potential to make them more resilient to business interruptions, it also means they have more staff and higher costs to manage when visitors stop coming. The small number of activity/attraction businesses in the ROC sample did not allow for comparable cross tabulations to be carried out.
- Reduced visitor numbers was the most disruptive factor affecting IZ tourism businesses after the February earthquake. Non-structural damage (fixtures and fittings) and damage to equipment was also very disruptive. Communications,

electricity and road network issues were the most commonly reported lifelines problems after the February earthquake, and were described as slightly to moderately disruptive. This suite of disruption questions was not replicated in the ROC survey.

- More than one third of IZ businesses used organisational cash flow to fund their business recovery in the aftermath of the February earthquake. Others relied on savings and insurance claims, and many businesses used the Earthquake Support Subsidy provided by the government to assist with paying their employees. Less than 20% of ROC businesses reported the need to finance their recovery, but those who did used bank loans, savings and cash flow to assist their business. No ROC operators utilised the Earthquake Support Subsidy.
- Outcomes of the earthquakes on business performance highlighted there were winners and losers after the earthquakes. Similar proportions of IZ and ROC operators reported being either worse off or better off after the earthquakes.
- Decline in revenue affected more than half of IZ businesses after September and February, particularly in Christchurch city and Banks Peninsula. Interestingly, however, more businesses in Canterbury reported increased revenue after the February earthquake compared to after the September event. This reflects the differential outcomes on business as a function of their location, business type and direct physical impacts. For example, many accommodation facilities were destroyed in the CBD, resulting in a significant reduction in capacity, and as a consequence accommodation facilities located outside the CBD that were still operational experienced a sharp increase in demand. For the ROC sample, a larger proportion stated that their revenue had stayed the same after both earthquakes. As with the IZ sample, more ROC businesses reported increased revenue after the February earthquake, compared to the September event.
- Perceptions of debt level and cash flow were consistent in both IZ and ROC sample populations.
- The majority of IZ and ROC operators believe the earthquakes changed the types of visitors they receive. The most notable change was the reported decline in the international market by 67% of ROC and 75% of IZ businesses. International guest nights reported dropped 73% in the year following the February earthquake (Wilson & Riley 2012; New Zealand Herald 2012). Local, regional and national visitor arrivals were more variable depending on location. For example, Waimakariri, Selwyn, Timaru, Kaikoura, Hurunui and Ashburton all reported increased numbers of visitors from within Canterbury, reflecting the likely outflow of Christchurch residents in search of aftershock respite.
- In the ROC sample, a relatively high proportion of Timaru and Ashburton businesses reported an increase in revenue. After the earthquakes Christchurch was perceived to be unsafe or unable to host visitors leading visitors to search out other options away from the damage zone. This rise in Timaru could also be a result of Christchurch residents themselves seeking some respite from the aftershocks.
- Few operators in Canterbury perceive the industry has bounced back to where it was prior to the earthquakes, which is a clear reflection of the depressed nature of inbound tourism figures to the region.

5.3 Insurance and staffing issues

- Almost half of IZ businesses did not make any claims and 44% made 1-2 claims. The number of claims was higher after the September earthquake compared to the February earthquake, which appears counterintuitive. The specific reasons for this require further investigation. Very few ROC businesses made an insurance claim during the earthquake sequence.
- Accommodation operators in the IZ were significantly more likely to make claims during the earthquake sequence, while 76% of visitor transport and 64% of activity/attraction operators did not make any claims. ROC claims were too few in number to separate into sub-sectors.
- Property and building, and public liability insurance were the most common products purchased by operators throughout Canterbury. The reasons for this were not specifically explored, but it could relate to the reliance of accommodation providers on their premises, including non-structural interior fittings and fixtures. Some types of activity and attraction or transport operations are less reliant on business premises, for example transport operators who run their business from their own home.
- Tourism operators throughout Canterbury are generally satisfied or very satisfied with their insurer (52-55%). Those in the IZ were more likely to be dissatisfied (12%) compared to the ROC sample (2%). Most IZ operators are confident their insurance cover was adequate after the earthquakes.
- One fifth of organisations in the IZ had staff leave voluntarily after the earthquakes, and 10% needed to make staff redundant. Almost one third hired new staff, but this was generally related to normal staffing increases at the beginning of the high tourist season. The IZ sample used the Employee Wage Subsidy Scheme, which could have reduced the likelihood of redundancies being made. No redundancies were required in the ROC.

5.4 Resilience and preparedness

- The majority of IZ and ROC operators are happy with their current level of preparedness, and feel much better prepared to deal with a future disaster since experiencing the earthquakes.
- Almost half of all operators in the IZ and ROC do not have back up IT facilities.
- Staff inductions are being used by 38-55% of Canterbury businesses, however very few include any mention of how to respond in an earthquake. Many employees in the tourism sector are foreign nationals with very little knowledge of the seismic potential in New Zealand. The induction process has been highlighted as having significant scope towards improving post-disaster outcomes in terms of building the capacity of staff to cope with an earthquake (Johnston et al. 2007; Orchiston in press).
- More than half of Canterbury tourism operators have not practiced how they would respond in an emergency. The feedback from respondents to this question suggests that for many micro-sized businesses, formal planning for emergencies does not happen because of the small-scale nature of tourism enterprises, typically owner-

operators with few or no employees. Many described informal discussions or plans that they had.

- There have been slight (but not statistically significant) increases in the number of businesses engaging in crisis and emergency planning, and business continuity planning since the earthquakes (33-41% report that they currently have plans). Some comments alluded to a lack of time for and interest in developing plans, with many relying on their ability to react to an emergency situation as it presents itself.
- Tourism businesses throughout Canterbury value their ability to make tough decisions quickly, and work on a problem until it is resolved. Also, many believe their organisation would have good leadership in the face of crisis. In contrast, they perceive a weakness in their ability to fill roles if key people are unavailable, use knowledge in novel ways and because they lack sufficient resources to absorb some unexpected change.

6. Conclusion

The earthquake sequence has resulted in significant physical and reputational damage to the Canterbury tourism industry. Eighteen months after the earthquakes inbound tourism data is still below pre-earthquake levels, with Canterbury operators reporting that the industry has not bounced back to where it was before September 2010. Recovery of inbound tourism markets is closely tied to the timeframe to rebuild the CBD of Christchurch. Reinstating critical tourism infrastructure will drive future tourism investment, and allow tourism businesses to regenerate and thrive into the future.

References

Cameron, A., & Massey, C. (1999). *Small and medium-sized enterprises: A New Zealand Perspective*. Auckland: Longman.

CERA (2012). *Demolitions*. Accessed on August 8th 2012 from <http://cera.govt.nz/demolitions/list>.

CIAL (2012a). *International tourists arriving in Christchurch add more value*. Accessed on August 8th 2012 from <http://www.christchurchairport.co.nz/en/about-us/media-centre/media-releases/2012/international-tourists-arriving-in-christchurch-add-more-value/>

CIAL (2012b). *Facts and figures*. Accessed on August 8th 2012 from <http://www.christchurchairport.co.nz/en/about-us/corporate-information/facts-and-figures/>

Johnston, D., Becker, J., Gregg, C., Houghton, B. F., Paton, D., Leonard, G., et al. (2007). Developing warning and disaster response capacity in the tourism sector in coastal Washington, USA. *Disaster Prevention and Management* 16(2), 210-216.

New Zealand Herald (2012). Christchurch's struggling tourism industry calls for action. Wednesday, August 8th 2012, available at http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10814165

Orchiston, C. (in press). Tourism business preparedness, resilience and disaster planning in a region of high seismic risk: the case of the Southern Alps, New Zealand. *Current Issues in Tourism*.

Wilson, J. & Riley, S. (2012). *State of the Tourism Sector 2012*. Reported commissioned by Tourism Industry Association New Zealand (TIA), available at <http://hdl.handle.net/10182/4126>

Appendices

Visitor arrivals data (2000-2007)

Domestic and International visitor arrivals to Canterbury 2000-2007 (quarterly data).



Business profile

Length of time the organisation has operating (IZ n = 200; ROC n = 60).

Years in operation	Frequency		Per cent	
	IZ	ROC	IZ	ROC
1-2 years	16	3	8%	5%
3-5 years	42	11	21%	18%
6-10 years	68	17	34%	28%
11-20 years	40	17	20%	28%
> 21 years	34	12	17%	20%

Comparison in business size between the IZ and ROC sample populations (shown as frequency per cent).

Business size	IZ	ROC
Micro	76%	74%
Small	21%	24%
Medium	1%	2%
Large	2%	0
n	201	62

Change in revenue

Business location cross-tabulated with change in revenue after the February earthquake (IZ businesses only), ranked from largest to smallest decrease in revenue.

	Increased	Stayed the same	Decreased	n
Banks Peninsula	15%	5%	80%	20
Christchurch	35%	4%	61%	72
Waimakariri	36%	14%	50%	14
Timaru	56%	6%	38%	16
Selwyn	40%	27%	33%	15
Ashburton	43%	26%	31%	35
Hurunui	50%	25%	25%	4

Change in revenue for IZ businesses after both the September* and February* earthquakes cross-tabulated with business location (shown as frequency per cent).

	Increased		Stayed the same		Decreased	
	Sept 4th	Feb 22nd	Sept 4th	Feb 22ⁿ	Sept 4th	Feb 22nd
Christchurch	11%	35%	25%	4%	64%	61%
Waimakariri	14%	36%	36%	14%	50%	50%
Selwyn	25%	40%	31%	27%	44%	33%
Ashburton	21%	43%	37%	26%	42%	31%
Timaru	24%	56%	59%	6%	18%	38%
Hurunui	50%	50%	25%	25%	25%	25%
Banks Peninsula	10%	15%	18%	5%	73%	80%

Change in revenue for IZ businesses after both the September* and February* earthquakes cross-tabulated with business size (shown as per cent).

	n	Increased		Stayed the same		Decreased	
		Sept 4 th	Feb 22 nd	Sept 4 th	Feb 22 ⁿ	Sept 4 th	Feb 22 nd
Micro	131	17%	41%	33%	12%	50%	48%
Small	39	14%	31%	21%	10%	64%	59%
Medium	2	0	0	50%	50%	50%	50%
Large	4	25%	0	25%	0	50%	100%

Change in revenue for IZ businesses after both the September* and February* earthquakes cross-tabulated with business type (shown as per cent).

	Increased		Stayed the same		Decreased	
	Sept 4 th	Feb 22 nd	Sept 4 th	Feb 22 ⁿ	Sept 4 th	Feb 22 nd
Activity/Attraction	9%	24%	22%	13%	69%	64%
Visitor transport	5%	10%	25%	5%	70%	85%
Motel	45%	74%	28%	4%	28%	22%
Backpackers	30%	40%	50%	20%	20%	40%
Holiday park	17%	67%	33%	0	50%	33%
Hosted	11%	41%	46%	14%	43%	46%
Hotel	20%	25%	40%	0	40%	75%
Lodge	0	40%	0	20%	100%	40%

Note: camping grounds and lodges removed from analysis due to only n = 1-2.

Business impacts after the earthquakes

Comparison of business impacts after the September and February earthquakes (shown as per cent).

	IZ		ROC	
	September 4 th , 2010	February 22 nd , 2011	September 4 th , 2010	February 22 nd , 2011
Close temporarily	23%	23%	0	3%
Close permanently	1%	3%	0	0
Remain open as usual	57%	48%	91%	89%
Remain open – fewer hours	11%	11%	3%	5%
Remain open – longer hours	7%	14%	3%	3%
	n = 169	n = 177	n = 61	n = 63

Business outcomes

Business outcomes after the earthquakes cross-tabulated with business type (IZ sample only)*.

	Significantly better off	Slightly better off	The same	Slightly worse	Significantly worse off	n
Activity/Attraction	8%	13%	12%	23%	43%	60
Visitor transport	5%	0	10%	30%	57%	21
Motel	28%	44%	13%	9%	6%	32
Backpackers	0	31%	8%	23%	39%	13
Holiday park	0	67%	0	33%	0	6
Hosted	15%	21%	19%	21%	23%	47
Hotel	33%	33%	0	0	33%	6
Lodge	25%	25%	0	50%	0	8

Note: accommodation sub-sectors with fewer than 5 responses have been omitted from analysis).

Financial recovery

Types of financial recovery used after the earthquakes in Canterbury.

Financial tool	n		Per cent	
	IZ	ROC	IZ	ROC
Organisational cash flow	76	2	37%	3%
Savings	46	3	22%	5%
Borrowed from friends/family	15	1	7%	2%
Bank loan	22	5	11%	8%
Credit cards	12	0	6%	0
Insurance claim	32	0	16%	0
Earthquake wage subsidy	43	0	21%	0

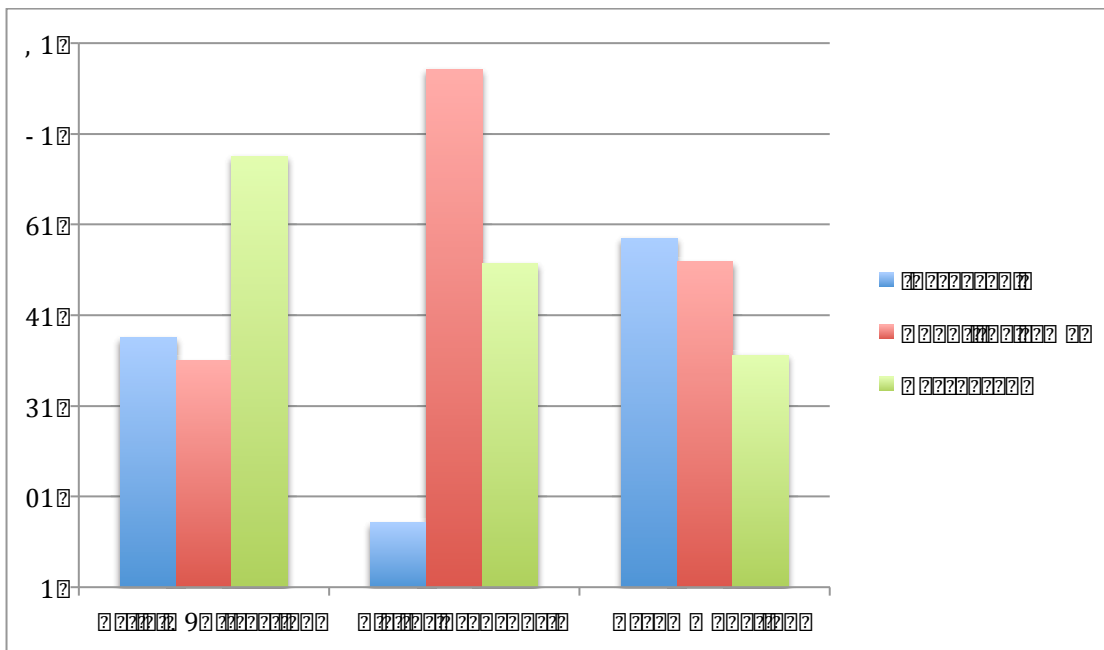
Insurance claims

Number of insurance claims made during the Christchurch earthquake sequence cross-tabulated with three business categories*.

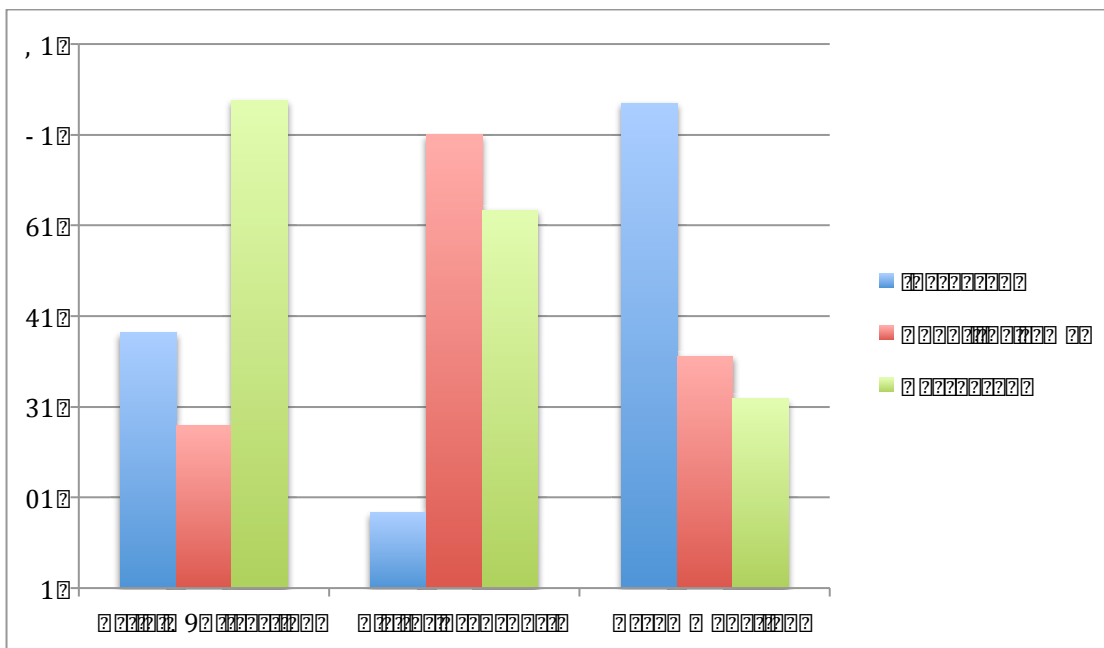
	0	1	2	3	4	n
Activity/Attraction	64%	13%	15%	7%	2%	61
Visitor transport	76%	19%	5%	0	0	21
Accommodation	33%	37%	19%	7%	4%	110

Change in visitor arrivals (IZ sample only)

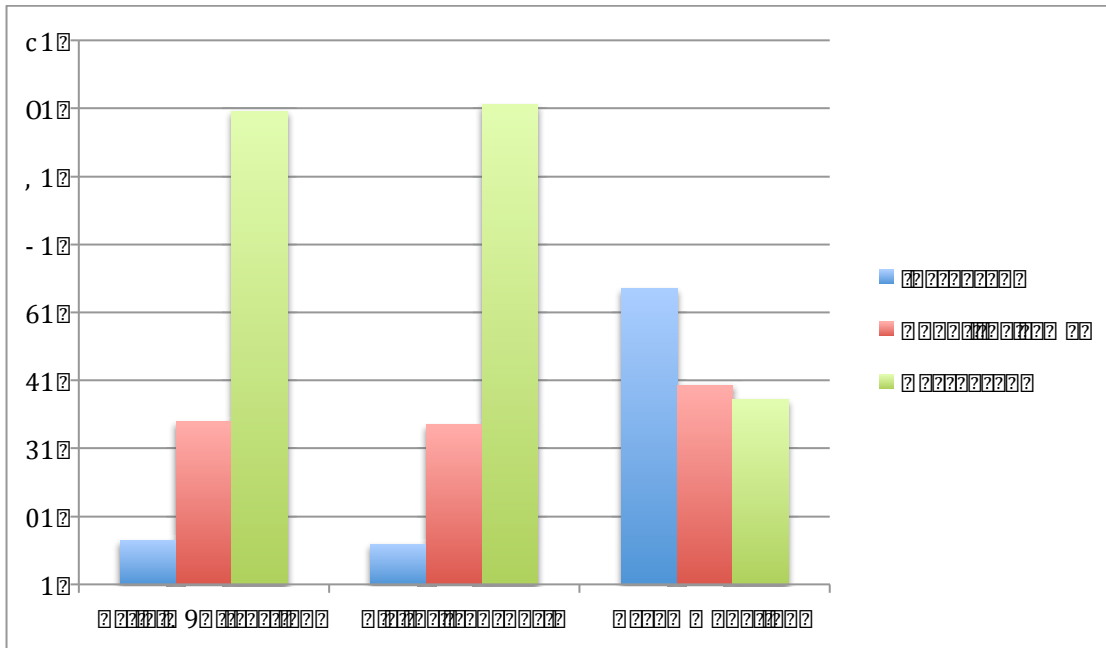
Reported change in local visitor arrivals at tourism businesses for activity/attraction, visitor transport and accommodation businesses.



Reported change in regional visitor arrivals for activity/attraction, visitor transport and accommodation businesses*.



Reported change in domestic visitor arrivals for activity/attraction, visitor transport and accommodation businesses*.



Reported change in international visitor arrivals for activity/attraction, visitor transport and accommodation businesses*.

