

New Zealand's 2011 Rugby World Cup: A Tourism Perspective

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Executive Summary

This report investigates the impact of the 2011 Rugby World Cup (RWC) on New Zealand's tourism industry. The RWC was anticipated for its influence on international visitor numbers and expenditure, the regional spread of the tournament and its timing during the off-peak spring season. The RWC helped to counteract the negative impact on visitor numbers to New Zealand from significant external events in the first half of the year, including the Christchurch earthquake, Australian Queensland floods, the Japan earthquake and tsunami and ash cloud flight disruptions.

133,200 visitors came to New Zealand for the RWC

Out of the total 785,600 visitors who came to New Zealand during the RWC time period, 133,200 of these came for the RWC¹. Most of the RWC visitors were from RWC participant countries such as Australia (55,500), France (11,500), South Africa (8,600), England (7,000), the USA (5,400), Ireland (4,100), Argentina (3,000) and Japan (2,800).

International RWC visitors spent a total of \$387 million

International RWC visitors spent a total of \$387 million². RWC visitors spent on average \$3,400 each compared to \$2,400 for non-RWC visitors over the same time period. The net increase in visitor expenditure attributable to the RWC was approximately \$280 million; this figure accounts for the assumed loss made from visitors who chose not to come to New Zealand because of the RWC.

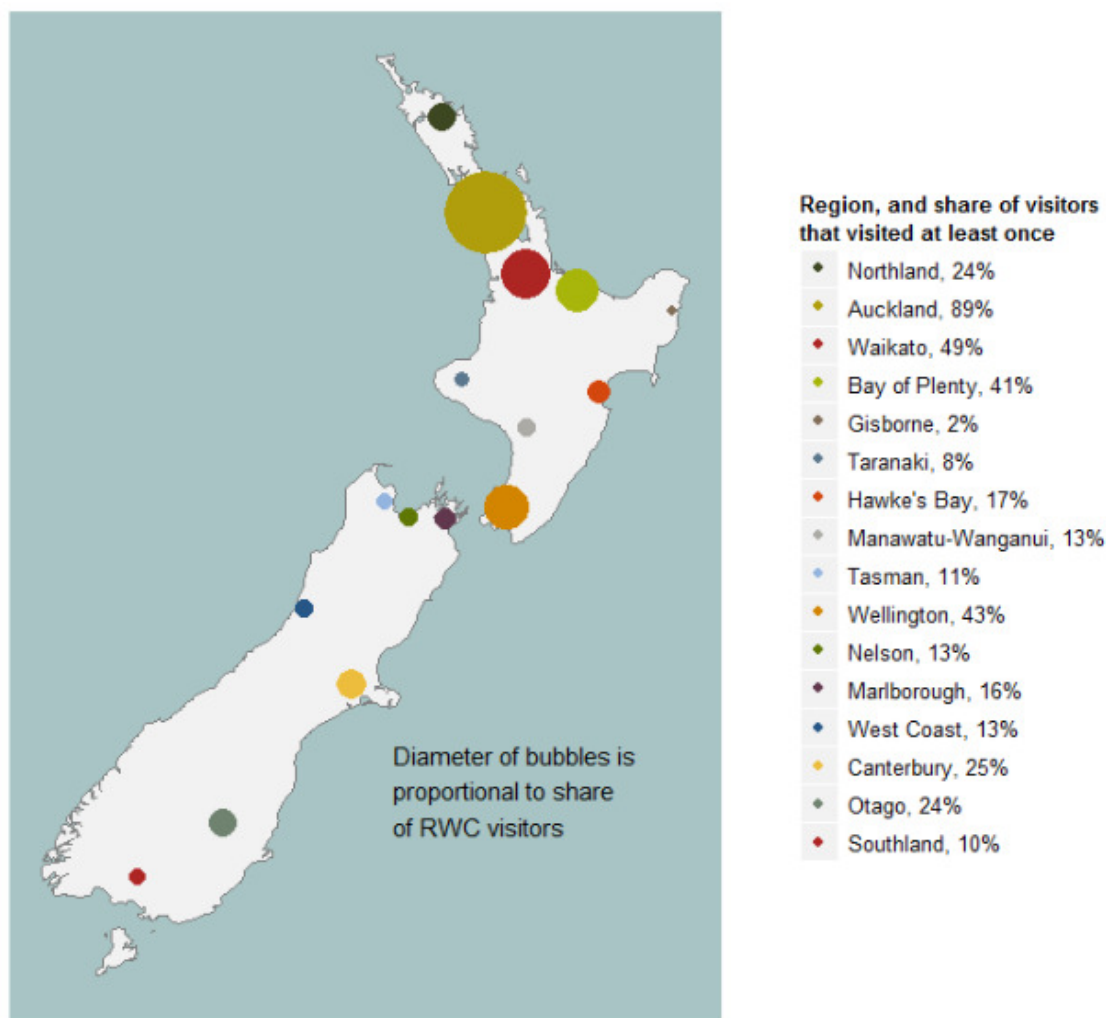
¹ International Visitor Arrivals, Statistics New Zealand, 2011.

² International Visitors Survey, Ministry of Economic Development, 2011.

RWC visitors travelled widely throughout New Zealand

The RWC was hosted in 12 cities throughout New Zealand, ensuring regional spread of international RWC visitors.

Figure 1: Regional spread of international RWC visitors³



The RWC increased visitor numbers in the off-peak tourism spring season by 14%

The RWC had a large impact on the off-peak tourism season of spring (September – November). New Zealand tourism traditionally has a strong peak in the summer months (December-January) and a smaller peak in the winter months (June-August). The number of visitors in spring was 82,000 higher (14%) compared with average visitor numbers for the previous three years⁴.

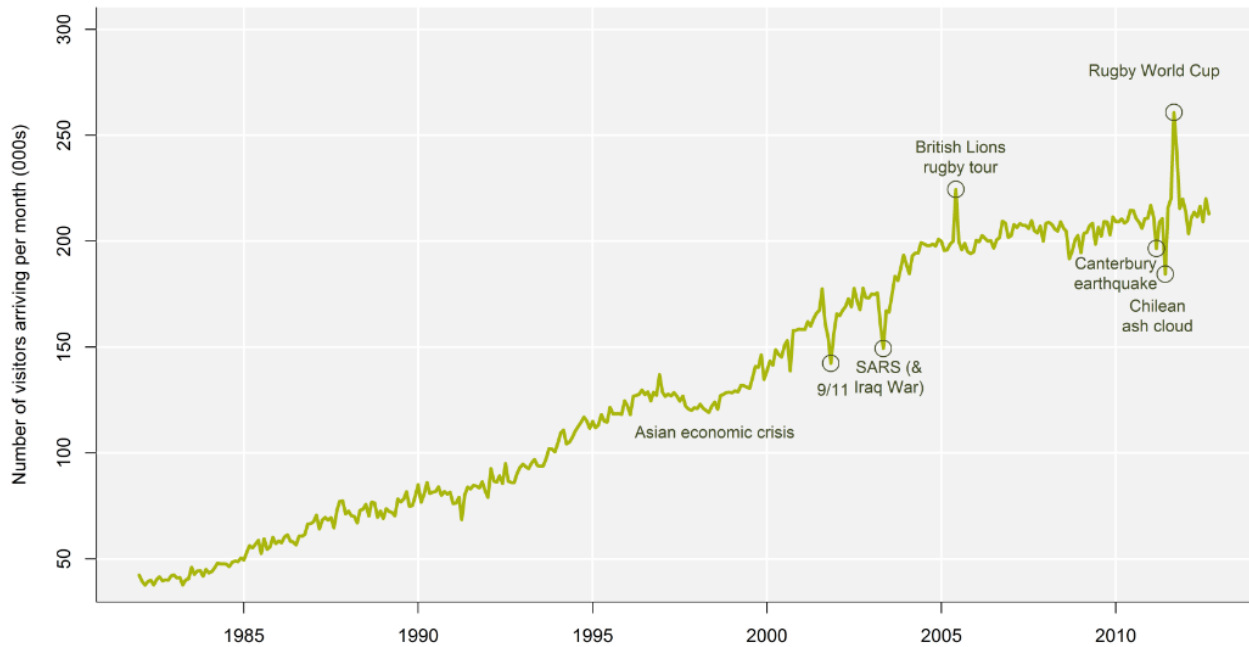
³ International Visitors Survey, Ministry of Economic Development, 2011.

⁴ International Visitor Arrivals, Statistics New Zealand.

The RWC caused an unprecedented increase in visitor numbers

The impact of the RWC caused an unprecedented increase in seasonally adjusted visitor numbers over the RWC time period, with the nearest comparison being the 2005 British Lions Tour to New Zealand.

Figure 2: Seasonally adjusted monthly visitor numbers to New Zealand, 1982-2012⁵



⁵ International Visitor Arrivals, Statistics New Zealand.

Background

In 2011, New Zealand hosted the Rugby World Cup (RWC). The New Zealand Rugby Union presented its bid to the International Rugby Board (IRB) in Dublin in 2005. The theme was 'A stadium of 4 million', reflecting the size of New Zealand's population and its heritage as a rugby-playing nation.

Three main groups were involved in organising the RWC:

- Rugby New Zealand 2011 Ltd planned and delivered the RWC along with the IRB and Rugby World Cup Ltd.
- Thirty five government organisations worked together under the RWC Coordination Office, coordinating sectors such as transport, security, trade and tourism.
- The NZ 2011 Office and the Ministry of Economic Development were in charge of delivering Government objectives to maximise opportunities to New Zealand (leverage) and ensure lasting benefits (legacy).

The RWC was hosted at 12 stadiums throughout the country from Whangarei to Invercargill, with the opening ceremony and 15 of the 48 matches hosted in New Zealand's largest city, Auckland. Seven matches were to be hosted in Christchurch including two quarter finals. However, the February 22 2011 earthquake damaged much of the city, including the Christchurch stadium and these games were relocated to other stadiums throughout the country.

The RWC had the potential to significantly impact New Zealand's tourism industry, given the timing of the tournament for the off-peak spring season. Major impacts were predicted to be additional visitor numbers, additional expenditure and the tournament's regional spread. The impact of the RWC on New Zealand's tourism industry is investigated in this report.

In 2011, the RWC was seen as particularly important to the tourism industry to counteract significant external events in the first half of 2011 that negatively impacted on visitor numbers. These included the Christchurch earthquake and Australian Queensland floods in February, the Japan earthquake and tsunami in March, and ash cloud disruptions in June.

The Host Nation Report 'The Stadium of Four Million: Rugby World Cup 2011' covers all aspects of the New Zealand RWC experience. This report was prepared in parallel with 'The Stadium of Four Million' and provides further details on RWC impacts on tourism.

Who is a Rugby World Cup Visitor?

For the purposes of this report a RWC visitor is an individual who came to New Zealand for the RWC and/or purchased a RWC ticket. This report analyses results from three different surveys.

The International Visitor Arrivals (IVA) survey collects information from visitor arrival cards on entry to New Zealand. From July-October 2011, the question 'Are you here for the Rugby World Cup' was added to the arrival cards, allowing the IVA data to be analysed for RWC visitors.

The International Visitor Survey (IVS) is a survey of approximately 5,200 departing international visitors to New Zealand aged 15 years or older per year. Several RWC questions were added to the IVS from September – December 2011. The question ‘Were you here for the Rugby World Cup?’ was used to identify RWC visitors.

The Ministry of Economic Development conducted an International Ticket Purchasers Survey. A database of overseas resident RWC ticket purchasers was provided to the Ministry of Economic Development. A ‘Rugby World Cup 2011 Visitor Experience Survey’ was sent to all unique ticket purchasers. For this survey, RWC visitors were defined as individuals in the data base.

Although the RWC matches took place in September and October 2011, RWC visitors arrived before and stayed after this time period. The time periods used for each survey were designed to best capture a true picture of RWC visitors.

How much did Rugby World Cup visitors spend in New Zealand?

International visitors in New Zealand for the RWC spent \$387 million⁶. After accounting for estimated visitor numbers who would have delayed visiting New Zealand due to the RWC, net additional 2011 tourism expenditure attributable to the RWC was estimated to be between \$220 and \$340 million (\$280 million “best” point estimate)⁷.

RWC visitors spent on average \$3,400 on their New Zealand visit compared to \$2,400 for non-RWC visitors in 2011. Average RWC expenditure was greater than those who travelled in 2011 for a holiday (\$2,800), to visit friends and relatives (\$1,400) or for business (\$1,900).

Table 1: International visitor expenditure, 2011⁸

	2010 (\$millions)	2011 (\$millions)	Average Expenditure Per Person (\$)	2010/2011 Change	2010/2011 % Change
Here for RWC	-	387	3,400	-	-
Other	-	5,376	2,400	-	-
Total	5,595	5,763	2,400	167	3%

How many international visitors came to New Zealand for the Rugby World Cup and how long did they stay for?

Out of the total 785,600 visitors who arrived in NZ during the period July to October 2012, 133,200 (17%) of them came for the RWC⁹. Twelve per cent of RWC visitors made two or more trips to New Zealand for the RWC¹⁰. Actual RWC visitor numbers significantly exceeded predicted forecasts of 85,000 visitors¹¹. Most of the RWC tourists were from RWC

⁶ International Visitors Survey, Ministry of Economic Development, September – December 2011.

⁷ See technical notes for more details. Reported at 95% confidence interval.

⁸ International Visitors Survey, Ministry of Economic Development.

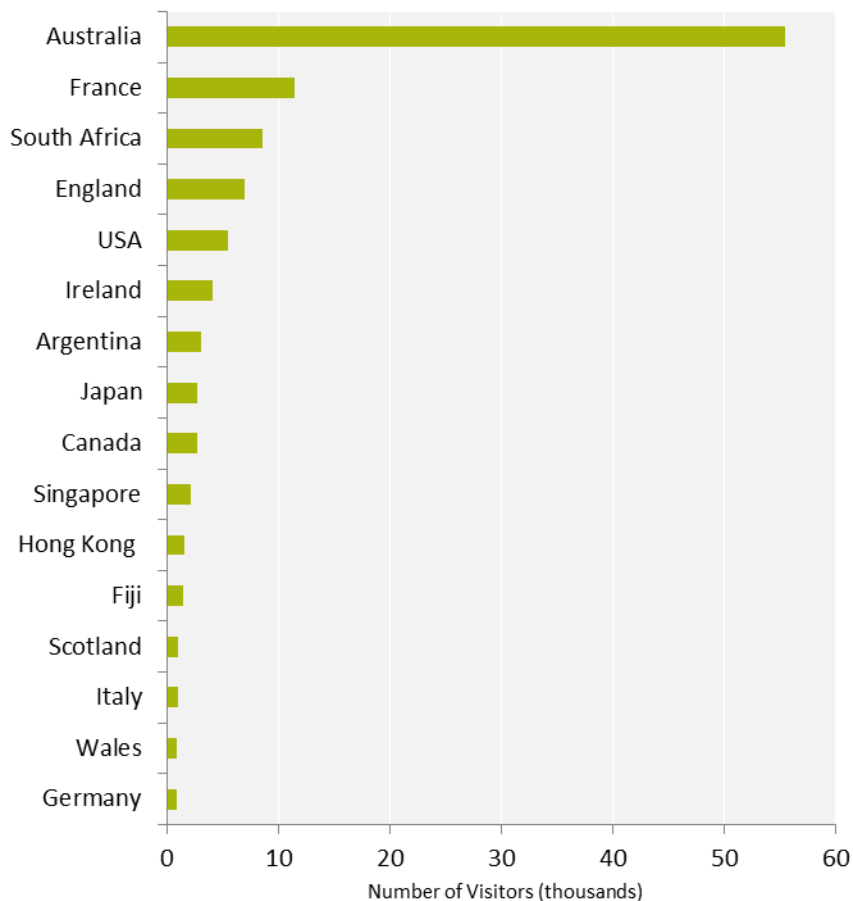
⁹ International Visitor Arrivals, Statistics New Zealand.

¹⁰ International Ticket Purchasers Survey, Ministry of Economic Development, 2011.

¹¹ Preliminary Forecasts of International Visitor Activity in New Zealand during Rugby World Cup 2011, Ministry of Economic Development, March 2010. See www.med.govt.nz for the report.

participant countries such as Australia (55,500), France (11,500), South Africa (8,600), England (7,000), the USA (5,400), Ireland (4,100), Argentina (3,000) and Japan (2,800). There were also large numbers of RWC visitors from non-participating countries, for example, from Singapore (2,200) and Hong Kong (1,600).

Figure 3: Number of Rugby World Cup visitors to New Zealand by country of origin¹²



The average length of stay for RWC 2011 visitors from participating countries was 13.2 days, compared to 19 days for all non-RWC visitors arriving during the same period¹³. The average length of stay for all RWC 2011 visitors was 13.5 days. Of the RWC participant countries, visitors from Scotland and Tonga spent the most time in New Zealand, averaging 27 and 26 days respectively, while visitors from Australia and Japan averaged eight days. Overall, German RWC visitors had the longest length of stay, averaging 31 days, followed by people from the Netherlands with 22 days, and visitors from Switzerland with 21 days.

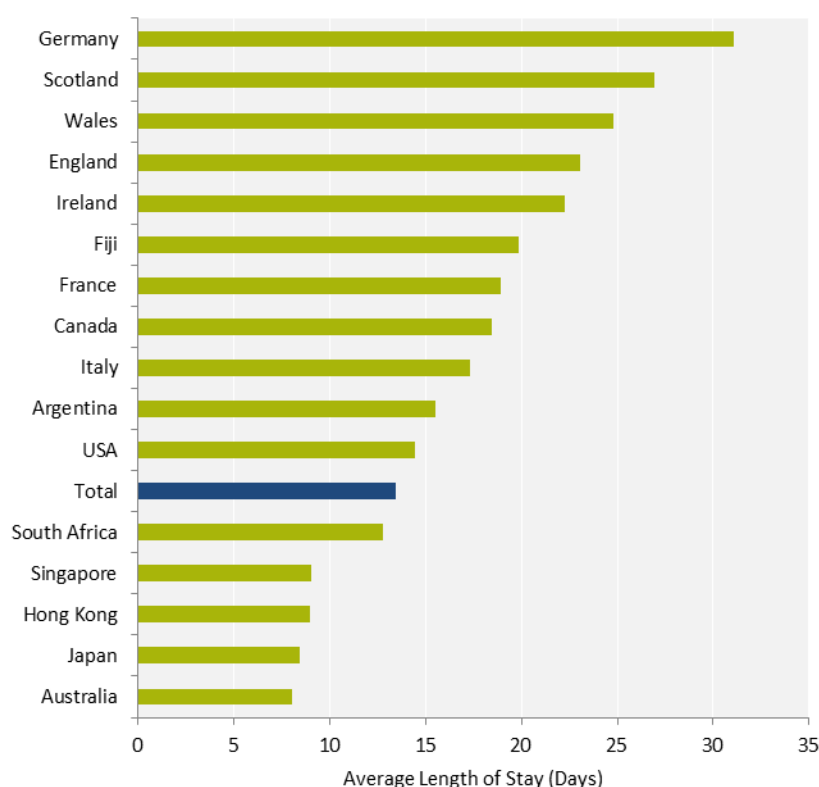
¹² International Visitor Arrivals Survey, Statistics New Zealand, July-October 2011.

¹³ International Visitor Departures Survey, Statistics New Zealand, 2011. Data collected from international departure cards.

Of the 16 countries with the highest number of visitors coming to New Zealand for the RWC, as shown by the graph on the previous page, visitors from Germany stayed the longest (on average 31 days) followed by visitors from Scotland (27 days), Wales (25 days), England (23 days) and Ireland (22 days)¹⁴.

Total visitor numbers were more than three times higher in September and October 2011 compared to a historic time series from 2000 onwards for the RWC participant nations of Argentina, South Africa, France and Ireland¹⁵. In particular, numbers from Argentina were up 450% compared to historic trends.

Figure 4: Length of stay of international RWC visitors in New Zealand¹⁶



What was the impact of the Rugby World Cup on international visitor arrival trends?

RWC numbers had a positive impact on the seasonality of New Zealand tourism in 2011. New Zealand tourism traditionally has a strong peak in the summer months (December to February) and a smaller peak in the winter months (June to August). Lower visitor numbers in the shoulder seasons (March to May and September to November) negatively impacts tourism firms. Major events such as the RWC can counteract this trend and a strategy in New Zealand is being deliberately pursued to hold major events outside the peak season.

¹⁴ International Visitor Departures Survey, Statistics New Zealand, 2011. Data collected from international departure cards.

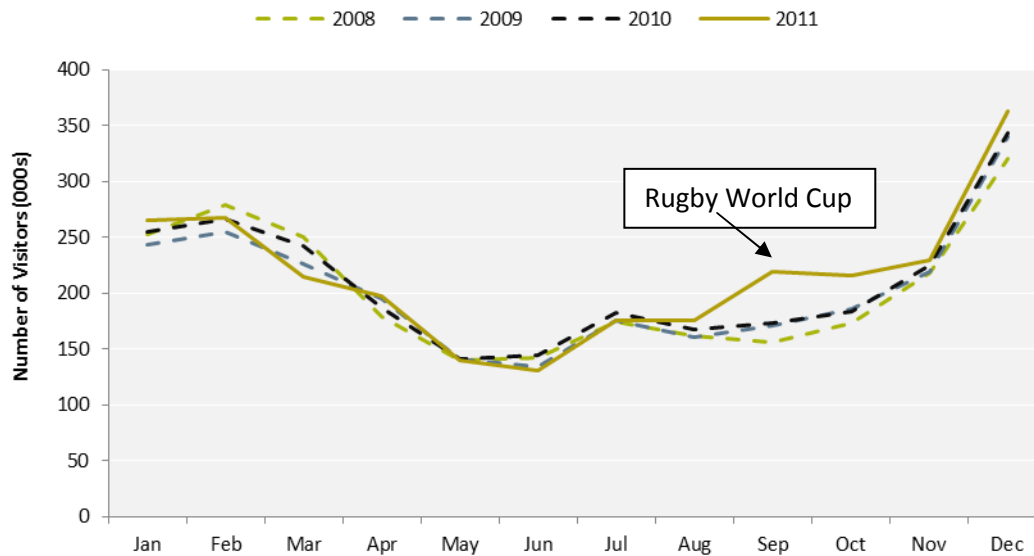
¹⁵ See the technical notes for more details.

¹⁶ International Travel and Migration Survey, Statistics New Zealand, 2011.

As part of this project we investigated the data to see if more New Zealanders remained at home during the RWC. There was no clear evidence to support this claim.

RWC visitor number peaks were still below the ordinary peaks of New Zealand summer months. However, September's peak of 219,000 visitors was 24% higher (52,000) compared with average visitor numbers for the previous three years¹⁷. October's peak in visitor numbers (215,000) was 16% (34,000) higher compared with visitor numbers in October for the previous three years.

Figure 5: Seasonality of international visitors to New Zealand, 2008-2011¹⁸

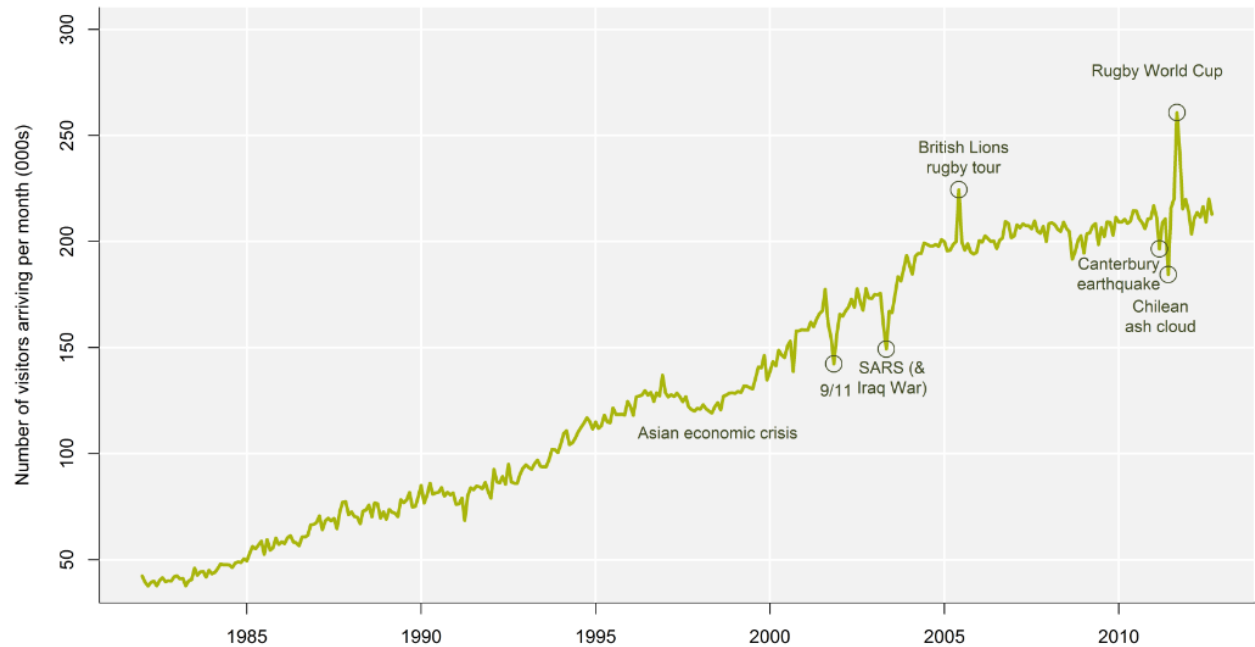


¹⁷ International Visitor Arrivals, Statistics New Zealand.

¹⁸ International Visitor Arrivals, Statistics New Zealand.

The following graph shows the impact of the RWC compared to a historic time series. As can be seen, there was an unprecedented increase in seasonally adjusted visitor numbers over the RWC time period, with the nearest comparison being the 2005 British Lions Tour to New Zealand.

Figure 6: Seasonally adjusted monthly visitor numbers to New Zealand, 1982-2012¹⁹



¹⁹ International Visitor Arrivals, Statistics New Zealand.

How did the Rugby World Cup influence visitor travel plans?

Of the visitors who reported that they were in New Zealand for the RWC, 68% specifically came for the RWC, 18% of travel plans coincided with the event and 13% altered previous travel plans²⁰.

Displacement

The RWC increased international visitor numbers to New Zealand; however some potential visitors would have chosen not to visit New Zealand to avoid the event and some actual visitors would have come even if the event had not taken place. To obtain a measure of displacement, actual arrivals for 2011 were compared to visitor forecasts had the RWC not occurred²¹. This comparison suggests that approximately 46,000 tourists chose not to travel to New Zealand during September and October, who might otherwise have visited. However, the 'loss' of approximately 46,000 potential visitors was more than offset by the additional visitors for the RWC. Compared to the previous three year average, there were an additional 52,000 visitors in September and 34,000 visitors in October (see the previous section).

Using statistical techniques, we have concluded that the net increase in arrivals that can be attributed to the RWC, given displacement, was between 79,000 and 99,000.

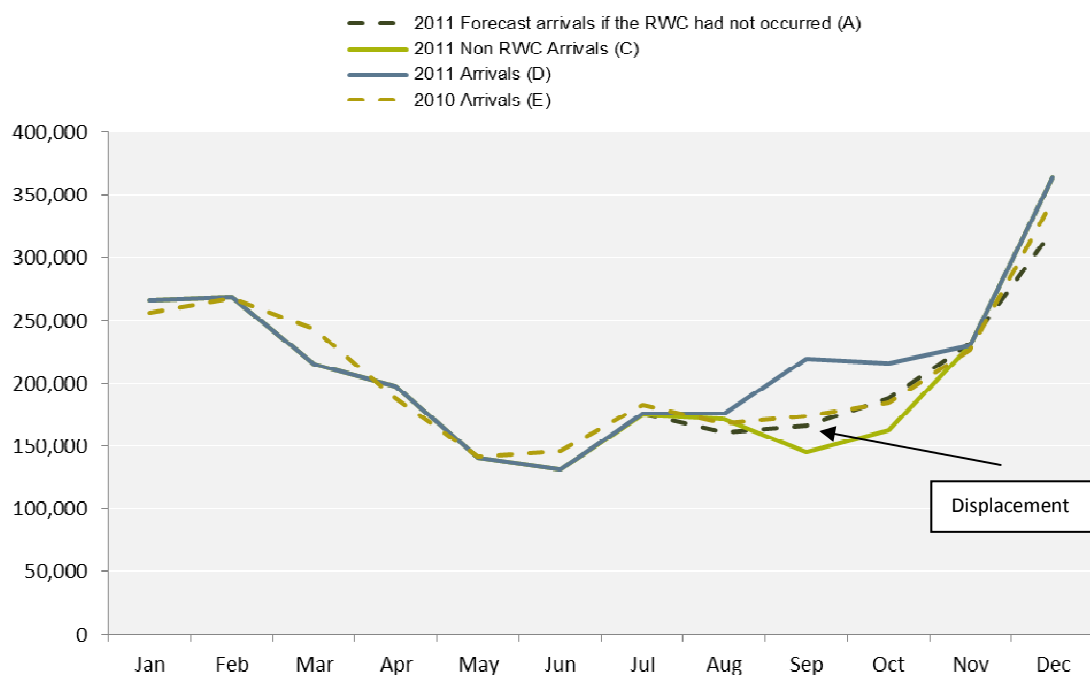
We also compared 2012 numbers against a forecast for 2012 had the RWC not happened. This was to see if visitors who avoided New Zealand due to the RWC came later. The forecasting showed no evidence of this. Visitor declines before the RWC, specifically in March 2011 and June 2011 were due to the Canterbury earthquake and the volcanic ash cloud from Chile²².

²⁰ International Visitors Survey, Ministry of Economic Development, 2011.

²¹ See technical notes for more details.

²² This evidence refutes the New Zealand Institute of Economic Research's press release, October 2012.

Figure 7: Displacement of international visitors by the RWC²³



Which regions did Rugby World Cup visitors travel to in New Zealand?

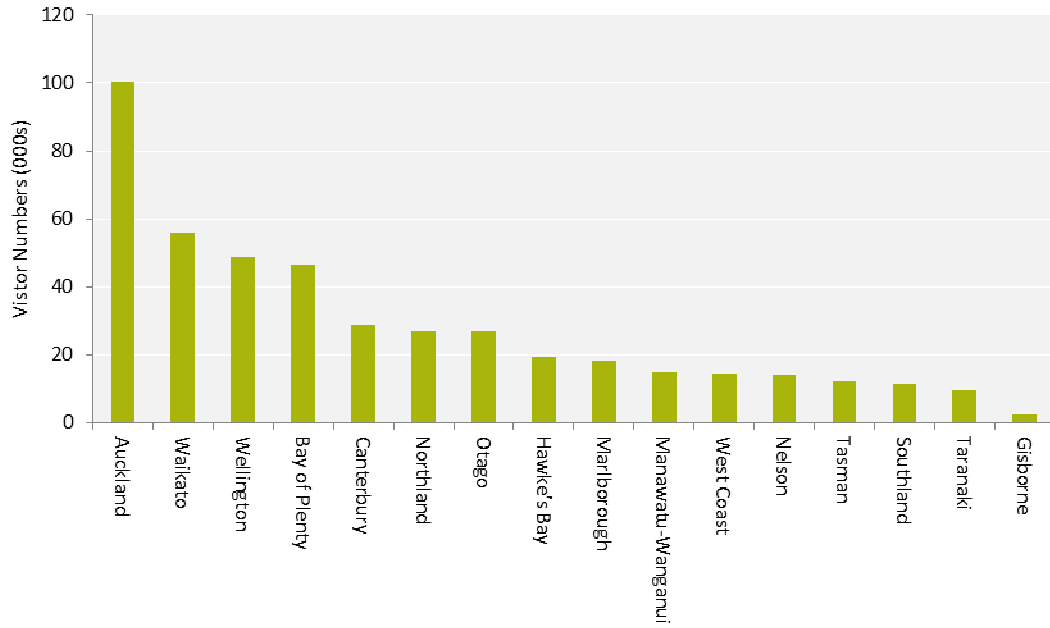
The highest percentage of international RWC visitors spent time in the Auckland region (100,000 or 89% of visitors) followed by time in the Waikato (56,000 or 49% of visitors), Wellington (49,000 or 43% of visitors) and the Bay of Plenty (46,000 or 41% of visitors)²⁴. The fewest number of RWC visitors spent time in Gisborne (2,000 or 2% of RWC visitors) and Taranaki (10,000 or 8%). RWC visitors were more likely than non-RWC visitors to spend time in the Waikato over the same time period (49% of RWC visitors compared to 27%), Wellington (43% compared to 22%), Northland (24% compared to 9%) and the Bay of Plenty (41% compared to 26%), showing the impact of the regional spread of the RWC games.

Figure 8: Regions that the Rugby World Cup visitors travelled to in New Zealand, 2011²⁵

²³ International Visitor Arrivals, Statistics New Zealand.

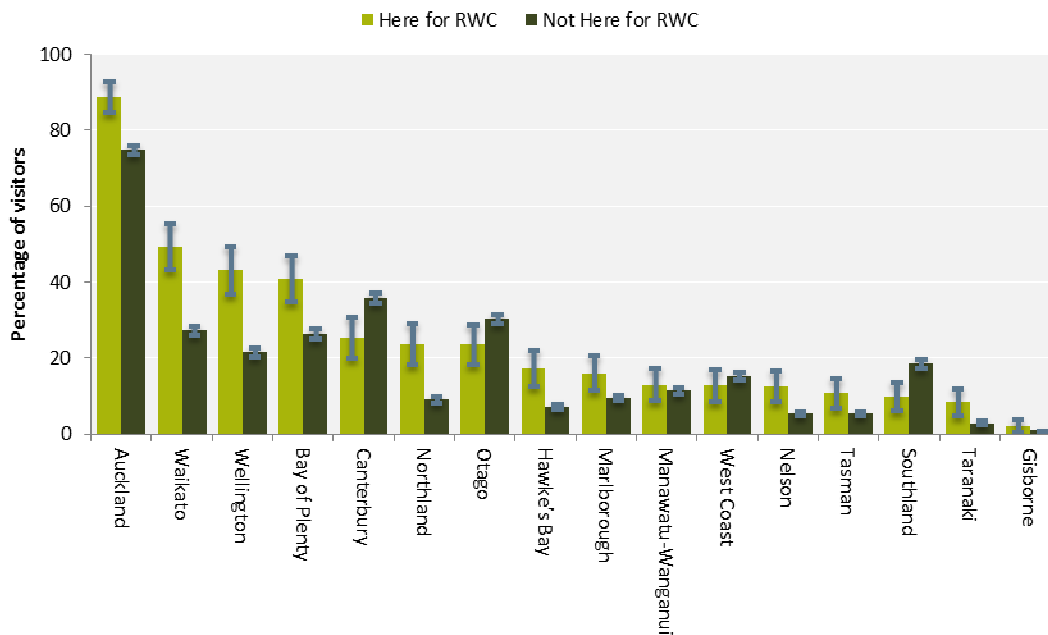
²⁴ International Visitors Survey, Ministry of Economic Development, 2011.

²⁵ International Visitors Survey, Ministry of Economic Development, 2011.



The graph below show the percentages of visitors travelling to the different regions in New Zealand. Note that the graph includes 95% confidence intervals, as indicated by the red bars. These account for sampling uncertainties. For example, 89% of RWC visitors spent time in Auckland on their trip. We are 95% confident that the true number of visitors who spent time in Auckland during their trip was between 85% and 93%.

Figure 9: Percentages of visitors travelling to the different regions in New Zealand, 2011²⁶



The percentage of international RWC visitors attending RWC matches at different stadiums provides another indication of the regional spread of visitor travel²⁷. Seventy per cent of international visitors who purchased a ticket for the RWC attended a match at Auckland's Eden Park, followed by 44% who attended a match at the Wellington Regional Stadium. Fewer visitors attended matches in Palmerston North (3%) and Whangarei (5%). These statistics reflect the number of matches in different regions, with 11 matches at Eden Park, eight matches in Wellington, and two matches each in Whangarei and Palmerston North.

²⁶ International Visitors Survey, Ministry of Economic Development, 2011.

²⁷ International Ticket Purchasers Survey, Ministry of Economic Development, 2011.

Table 2: Percentage of international visitors here for Rugby World Cup matches²⁸

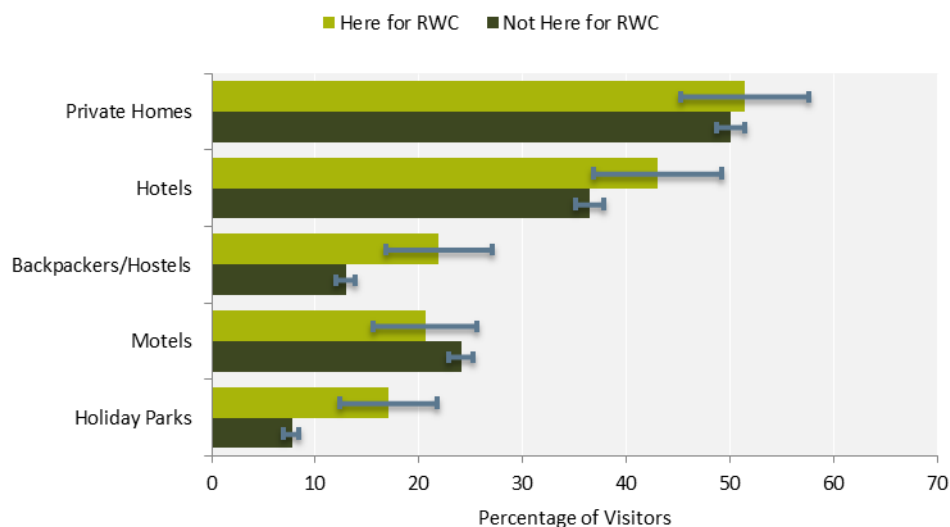
	Percentage	No. of Matches
Auckland, Eden Park	70	11
Wellington, Wellington Regional Stadium	44	8
Auckland, North Harbour Stadium	21	4
Dunedin, Otago Stadium	20	4
Hamilton, Waikato Stadium	18	2
New Plymouth, Stadium Taranaki	10	3
Rotorua, Rotorua International Stadium	10	3
Napier, McLean Park	7	2
Nelson, Trafalgar Park	7	3
Invercargill, Rugby Park Stadium	6	3
Whangarei, Northland Events Centre	5	2
Palmerston North, Arena Manawatu	3	2

²⁸ International Ticket Purchasers Survey, Ministry of Economic Development, 2011.

What accommodation types did Rugby World Cup visitors stay in on their New Zealand trip?

Private homes (51% of visitors), hotels (43%), backpackers/hostels (22%), motels (21%) and holiday parks (17%) were the main forms of accommodation that RWC visitors stayed in during their trip around New Zealand²⁹. RWC visitors were much more likely than non-RWC visitors to stay in backpackers/hostels (22% compared to 13%) and holiday parks (17% compared to 8%).

Figure 10: Accommodation types used by international Rugby World Cup visitors, 2011³⁰



What transport types did Rugby World Cup visitors use in New Zealand?

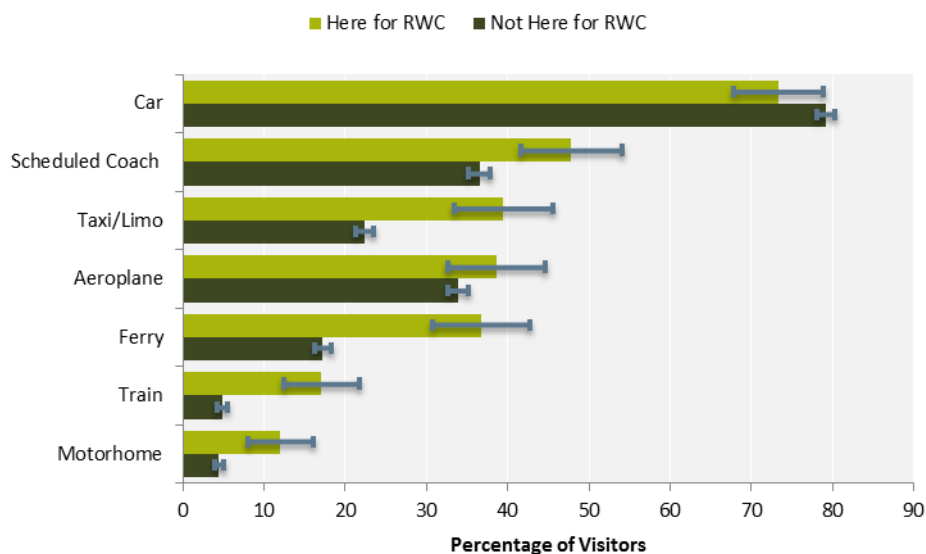
Travel by car was the main form of transport used by international RWC visitors around New Zealand (73%) followed by travel by scheduled coach (48%), taxi or limousine (39%) and aeroplane (39%)³¹. A much greater proportion of RWC visitors travelled by taxi or limousine than non- RWC visitors (39% compared to 22%), ferry (37% compared to 17%), train (17% compared to 5%) and campervan/motorhome (12% compared to 4%).

²⁹ International Visitors Survey, Ministry of Economic Development, 2011.

³⁰ International Visitors Survey, Ministry of Economic Development, 2011.

³¹ International Visitors Survey, Ministry of Economic Development, 2011.

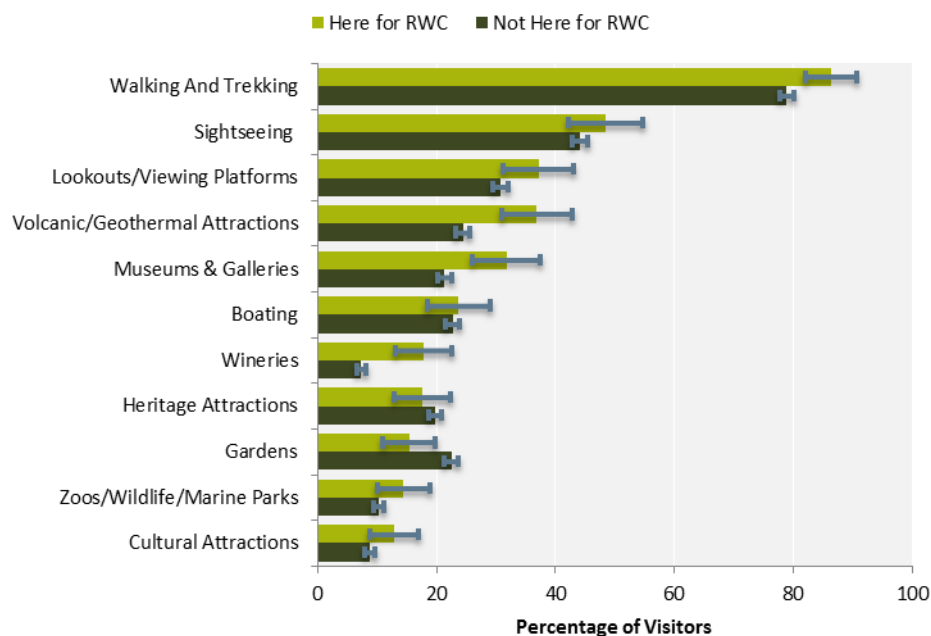
Figure 11: Transport types used by international Rugby World Cup visitors, 2011³²



What activities did Rugby World Cup visitors undertake in New Zealand?³³

The main activities that RWC visitors undertook in New Zealand (other than major sporting events) were walking and trekking (86%), sightseeing (48%), lookouts and viewing platforms (37%), volcanic/geothermal attractions (37%) and museums and galleries (32%)³⁴. RWC visitors were significantly more likely to go to volcanic and/or geothermal attractions (37% compared to 24%) and to wineries (18% compared to 7%) than non-RWC visitors.

Figure 12: Key activities by international Rugby World Cup visitors, 2011³⁵



³² International Visitors Survey, Ministry of Economic Development, 2011.

³³ International Visitors Survey, Ministry of Economic Development, 2011.

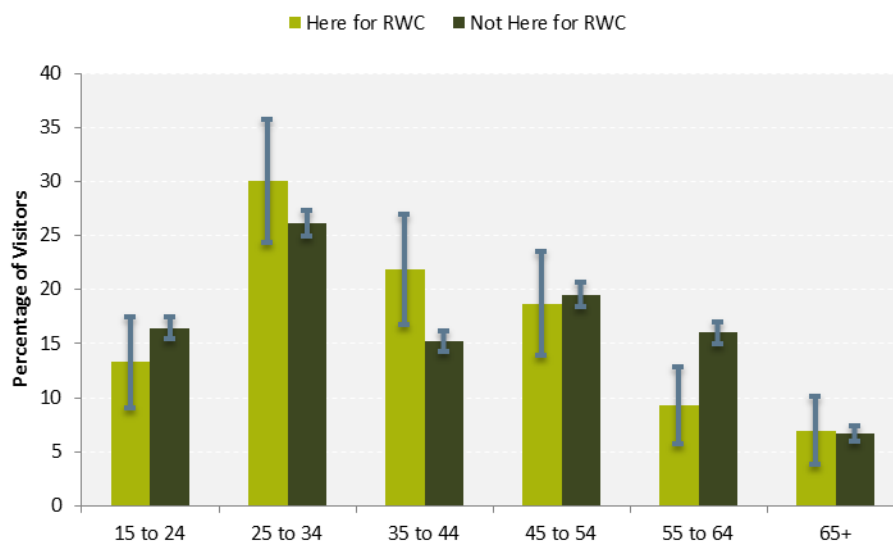
³⁴ International Visitors Survey, Ministry of Economic Development, 2011.

³⁵ International Visitors Survey, Ministry of Economic Development, 2011.

What are the characteristics of international Rugby World Cup visitors?

Seventy one per cent of RWC visitors were aged 25-54 years in comparison to 61% of non-RWC visitors. There were slightly less RWC visitors aged 15-24 years compared to non-RWC tourists (13% compared to 16%) and aged 55- 64 years (9% compared to 16%)³⁶.

Figure 13: International Rugby World Cup visitors by age, 2011³⁷



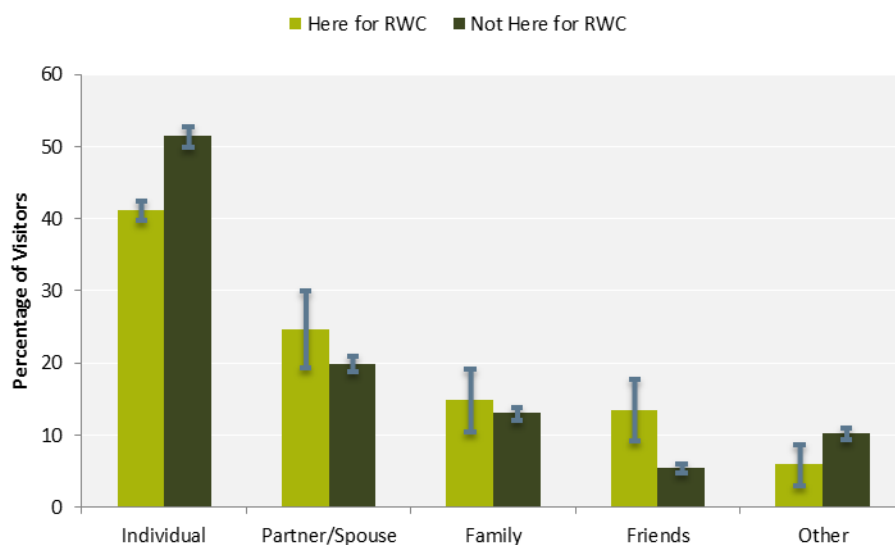
More males came to New Zealand for the Rugby World Cup than females (69% compared to 31%). In comparison, there was an even gender balance for non-RWC visitors (51% male and 49% female).

A greater proportion of RWC visitors travelled to New Zealand with their partner or spouse (25% compared to 20%) and with friends (13% compared to 5%) than visitors who were not here for the RWC. Fewer RWC visitors travelled to New Zealand alone (41% compared to 51%).

³⁶ International Visitors Survey, Ministry of Economic Development, 2011.

³⁷ International Visitors Survey, Ministry of Economic Development, 2011.

Figure 14: International Rugby World Cup visitors by type of travel party, 2011³⁸



Nine per cent of Rugby World Cup tourists were package travellers and 91% were independent travellers. This is very similar to tourists who were not here for the RWC (8% package travellers and 92% independent travellers).

Similar proportions of RWC visitors and non-RWC visitors had previously visited New Zealand (60% compared to 59%).

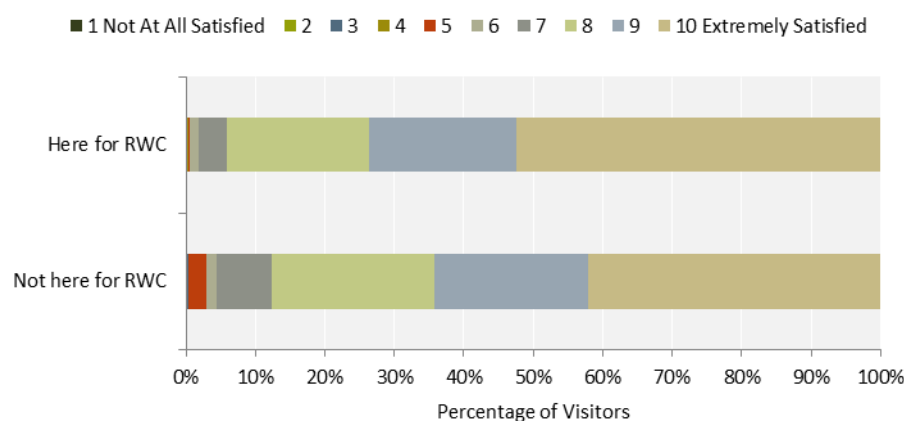
How satisfied were Rugby World Cup visitors?

RWC visitors were very satisfied with their New Zealand trip. On a one to ten scale, with 1 being not at all satisfied, and 10 being extremely satisfied, the average satisfaction score for RWC visitors was 9.2. This compared to 8.9 for non-RWC visitors.

Ninety five per cent of RWC tourists said that they will revisit New Zealand, and 98% said that they were either quite likely or very likely to recommend New Zealand to others. This compares to 95% of non-RWC visitors likely to revisit New Zealand and 96% quite likely or very likely to recommend New Zealand to others.

³⁸ International Visitors Survey, Ministry of Economic Development, 2011.

Figure 15: Rugby World Cup visitors satisfaction with their trip to New Zealand, 2011³⁹



RWC visitors were asked about their satisfaction with specific aspects of their New Zealand trip⁴⁰. Visitors were asked about their satisfaction on a one to ten scale, with 1 being not at all satisfied, and 10 being extremely satisfied. The following table shows the average satisfaction scores. International visitors were most satisfied with the atmosphere in New Zealand during the RWC (an average of 8.7 out of 10) and least satisfied with the overall value for money while in New Zealand (an average of 7.1 out of 10).

Table 3: Satisfaction scores for RWC-linked International visitors' trip to New Zealand⁴¹

	Average Satisfaction Score (out of 10)
Overall customer service experience in New Zealand	8.7
Information on travel in New Zealand	8.6
Ease of doing business in New Zealand	8.1
Maori cultural experiences	7.8
Queens Wharf fanzone and the cloud	7.7
Overall value for money while in New Zealand	7.1

³⁹ International Visitors Survey, Ministry of Economic Development, 2011.

⁴⁰ International Ticket Purchasers Survey, Ministry of Economic Development, 2011.

⁴¹ International Ticket Purchasers Survey, Ministry of Economic Development, 2011.

Technical Notes:

International Visitors Arrivals data, Statistics New Zealand:

Background

International Visitor Arrivals (IVA) provides monthly statistics on inbound travel by international visitors to New Zealand, including visitors by country, purpose, length of stay, age, sex, port of arrival and mode of transport (air/sea).

IVA statistics are obtained from the monthly International Travel and Migration survey undertaken by Statistics New Zealand, using international passenger arrival and departure cards collected by Customs at various international airports and seaports in New Zealand.

The International Travel and Migration survey is both a census and a sample survey. It is a census because it is compulsory for all international travellers to fill out the arrival and departure cards from which the data is derived. Some variables are processed from all the cards (e.g. age, sex, travel mode) but for some variables only a sample of the data is used for generating statistical information (e.g. purpose, length of stay, overseas port of embarkation). This depends on the traveller type/class.

The same survey also provides outbound travel statistics of New Zealand residents on short-term overseas trips for a period less than 12 months.

See www.stats.govt.nz for more details.

Using the Survey for Rugby World Cup Data

From July-October 2011, the question 'Are you here for the Rugby World Cup' was added to the arrival cards, allowing the IVA data to be analysed for RWC visitors. The resulting survey sample size was 6,281 and was weighted by normal Statistics New Zealand processes. Given the sample is taken from the population of all incoming visitors into New Zealand, this is the best source of data for RWC visitor numbers and their country of origin. The margin of error for total RWC visitor numbers is negligible.

Length of stay data was taken from matching RWC arrival cards with their subsequent departure cards to obtain a measure of actual length of stay rather than predicted length of stay.

Testing the significance of International Visitor Arrivals numbers

The IVA was used to look at the number of visitors coming to New Zealand in September-October from 2000 to 2011 for select countries. An analysis was conducted in R⁴², to see if the increase in visitor numbers in 2011 was significant compared to visitor numbers from

⁴² R Development Core Team (2011), *R: A Language and Environment for Statistical Computing*, R Foundation for Statistical Computing, Vienna Austria, <http://www.R-project.org>

previous years. The following graphs show this analysis, resulting in the conclusion that visitor numbers from Argentina, South Africa, France and Ireland are particularly larger than in historic terms (more than 300 times larger than normal visitor arrival numbers).

Figure 16: Percentage changes in Sep-Oct 2011 visitor arrivals compared to the distribution of changes from 2000-2010⁴³

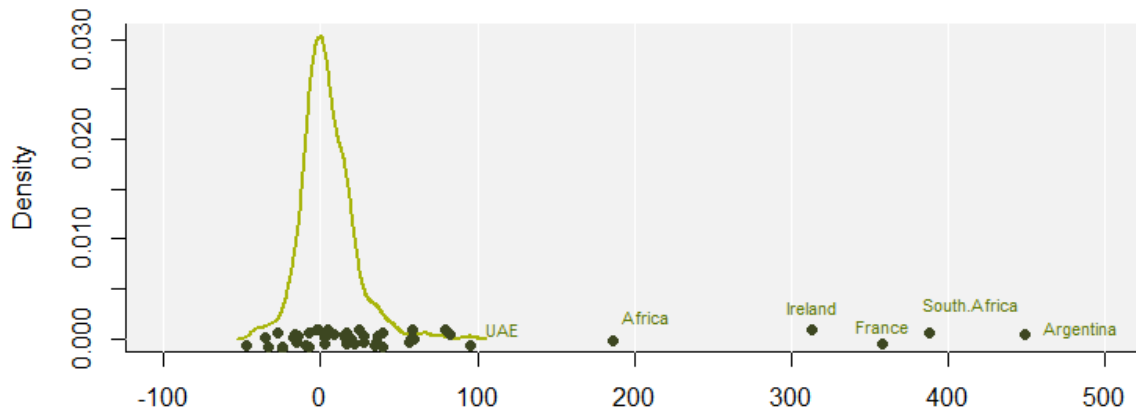
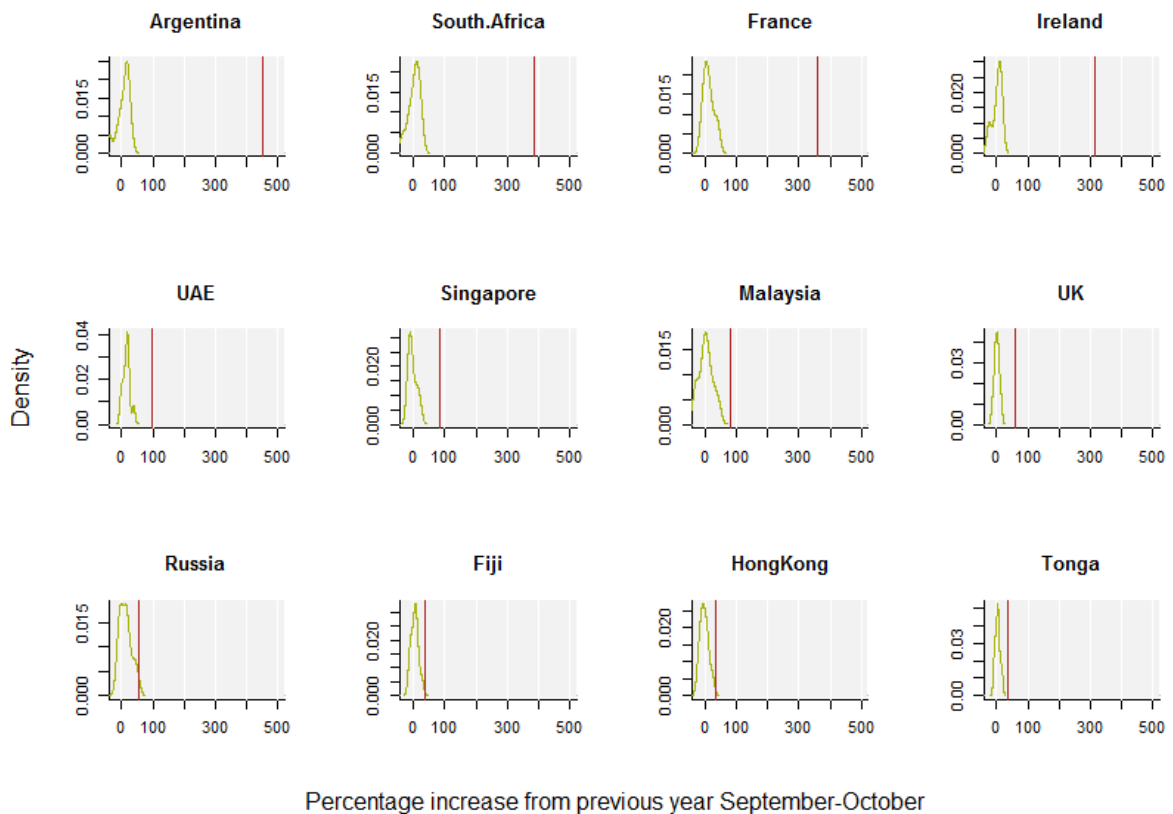


Figure 17: Density of increase in visitor numbers 2000-2010, showing 2011 percentage increase as a red line⁴⁴



⁴³ International Visitor Arrivals, Statistics New Zealand

⁴⁴ International Visitor Arrivals, Statistics New Zealand

International Visitors Survey, Ministry of Economic Development:

Background

The purpose of the International Visitor Survey (IVS) is to provide accurate, quarterly national information on the characteristics, behaviour and expenditure of international visitors.

In particular:

- To measure the amount of expenditure of international visitors.
- To determine the activities international visitors participated in, the transport and accommodation types used and places visited.
- To provide data for determining the travel credits component in the Balance of Payments, and tourism expenditure in the Tourism Satellite Account.
- To provide demographic information about international visitors, their motivation for visiting New Zealand, and their satisfaction with their visit to New Zealand.

The IVS is a sample survey of approximately 5,200 departing international visitors to New Zealand aged 15 years or older per year.

See www.med.govt.nz for more information.

Using the survey for Rugby World Cup data

Several RWC questions were added to the IVS between September and December 2011, including the question 'Were you here for the Rugby World Cup?' The other RWC questions were included for the Host Nation's Report, a requirement of the International Rugby Board. Over the time period, a total of 250 survey participants reported they were here for the RWC.

The IVS uses rigorous methods for collecting international expenditure data and is therefore considered the best source of data for international visitor expenditure; the definitive source for comparisons to estimates of expenditure by "normal" tourists. Estimating expenditure has many statistical difficulties. For total RWC visitor expenditure the margin of error (radius of a 95 percent confidence interval) is 20%; comparable to the margin of error for other sub-samples of tourists (eg Japanese)

The IVS contains multiple variables looking at the personal characteristics of international visitors and of their trip. This means that the IVS can be used to look at several characteristics of RWC visitors and their trip, such as their sex, age, accommodation types used and activities undertaken. For total RWC visitor numbers the margin of error is 13%.

As a check, IVS numbers have been compared to numbers from the IVA, which contains the most accurate number estimates. IVS data shows 250 respondents reported to have been here for the Rugby World Cup, representing 113,122 international visitors 15 years and older. This is short 7,214 or 6% compared to international visitors 15 years and older who came for the RWC as indicated in the IVA data; this is considered an acceptable difference.

International Ticket Purchasers Survey, Ministry of Economic Development, 2011:

Background

A database of overseas resident RWC ticket purchasers was provided to the Ministry of Economic Development. A 'Rugby World Cup 2011 Visitor Experience Survey' was sent to the 37,156 unique ticket purchasers following database cleaning. Of these, valid responses were received from 12,259 respondents, resulting in a response rate of 33%. Data was then weighted by country using the database population and subsequently cleaned.

In theory, because an invitation to participate in the survey was sent to the entire population of 37,344 (valid and identifiable) overseas resident ticket purchasers, there is technically no sampling error associated with the survey, as it is essentially a census – only non-response (non-sampling) error. However, for practical purposes, if the 12,259 (33%, the “sampling fraction”) who responded can be reasonably considered representative of the total population of ticket purchasers, an approximate maximum sampling error for percentage estimates is $\pm 0.7\%$, at the 95% confidence level.

Using the survey for Rugby World Cup data

The International Ticket Purchasers survey included questions on travel information, satisfaction, Auckland RWC venues and expenditure. Questions were specifically included for the purposes of the Host Nation's Report. For the purposes of this analysis, the survey was used to look at the number of trips to New Zealand, matches attended, and satisfaction. The IVS data was used for expenditure, due to its on-going, thoroughly tested expenditure collection methods.

Displacement Analysis Methodology:

The RWC increased international visitor numbers to New Zealand; however some potential visitors would have chosen not to visit New Zealand to avoid the event. This is called displacement. The IVA data was used to calculate displacement measurements. This information was then applied to the IVS to calculate a measure of the true increase in expenditure as a result of the RWC.

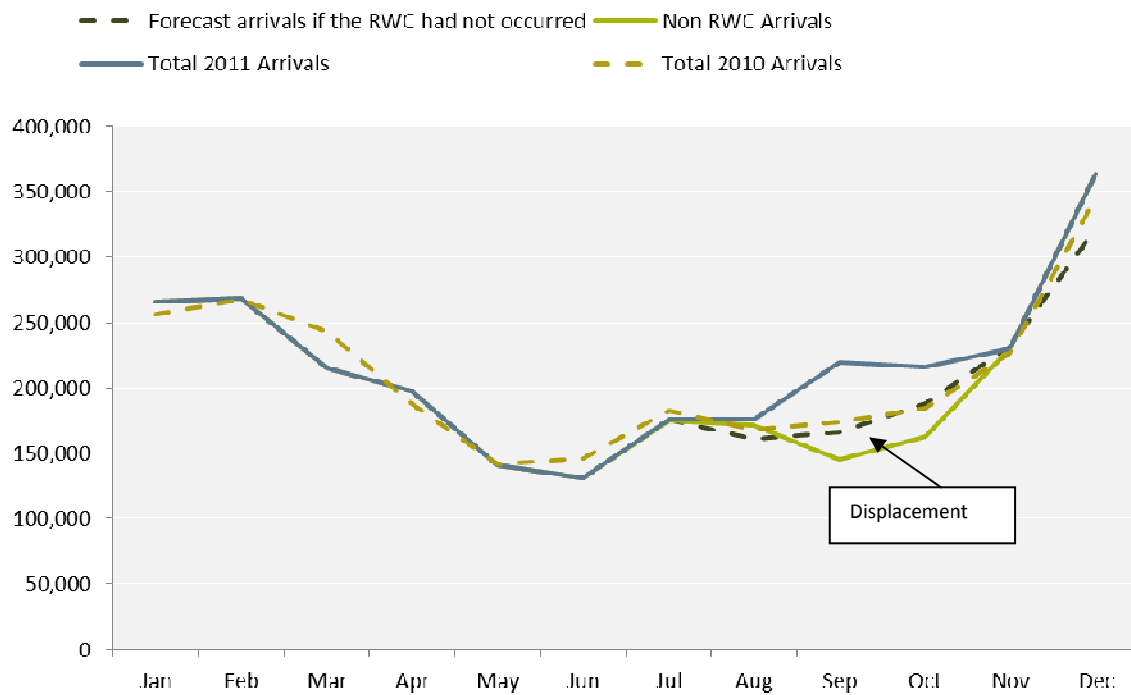
The following graph and table outline displacement of international visitors due to RWC. Forecast visitors to New Zealand had the RWC not occurred have been calculated for 2011 from July onwards. The actual number of visitors who came to New Zealand during the RWC period who specified that they were not here for the RWC has been subtracted from forecasted arrivals, providing us with a measure of displacement.

The 2011 forecast was based on each month's percentage of annual arrivals over the previous 16 years. Proportions of monthly arrivals vary little over 16, 10 and 5 year time periods. May was then used as a base forecast month to extrapolate 2011 visitor arrivals. In 2011, January and May were considered to be the most normal months, however January

did not account for significant external events occurring between February and June.⁴⁵ Using this model, data was forecasted from July to December.

This approach suggests that that 73% of RWC visitors (97,000 of the 133,200) are additional to normal visitor arrival patterns. International visitor displacement only occurs in September and October 2011.

Figure 18: Displacement of International Visitors to New Zealand by the Rugby World Cup⁴⁶



⁴⁵ Significant external events include the Queensland Floods and Christchurch Earthquake in February; the Japan Earthquake in March; later than normal and longer than normal Easter/Anzac holidays in April; and the ash cloud disruptions in June.

⁴⁶ International Visitor Arrivals Survey, Statistics New Zealand

Table 4: Displacement of International Visitors to New Zealand by the Rugby World Cup, 2011⁴⁷

	2011 Forecast arrivals if the RWC had not occurred (A)	RWC Arrivals (B)	2011 Non RWC Arrivals (C)	2011 Arrivals (D)	2010 Arrivals (E)	Displacement of visitors by the RWC (=C-A)
Jan		-	265,553	265,553	256,652	-
Feb		-	268,259	268,259	267,855	-
Mar		-	215,553	215,553	243,263	-
Apr		-	197,777	197,777	187,962	-
May		-	140,741	140,741	141,336	-
Jun		-	131,269	131,269	145,825	-
Jul	175,743	1,204	174,880	176,084	182,904	-863
Aug	161,098	4,395	171,514	175,909	168,081	10,416
Sep	165,980	74,355	145,585	219,940	174,157	-20,395
Oct	187,948	53,233	162,669	215,902	184,898	-25,279
Nov	231,883	-	230,292	230,292	226,455	-
Dec	322,196	-	364,165	364,165	345,656	-
Total	2,464,000	133,187	2,468,257	2,601,444	2,525,044	-

Alternative Method and Confidence Interval

An alternative approach to the above method is to compare arrivals from the last days of August to the end of October 2011 with the same period in 2010. Using an alternative method provides a check for the original displacement method. This suggests the net increase, given displacement, was closer to 81,000 (61 % of RWC visitors). The first method's advantage is that it accounts for 2011's significant external events.

Any method has some uncertainty. A reasonable and conservative distribution model is a net increase in visitors as a result of the RWC with a mean of 89,000 visitors and a standard deviation of 5,000. The 95% confidence interval for this model comfortably includes the estimates from both methods and suggests the real net increase is between 79,000 and 99,000.

Applying the displacement model to expenditure estimates

The arrivals net increase confidence interval (mean of 89,000 visitors, standard deviation of 5,000) was combined with IVS expenditure data in a simulation study. The confidence interval was adjusted to exclude visitors under 15 years of age to ensure the IVA population was as similar as possible to the IVS population. This yields a 95% confidence interval for total net RWC additional tourist expenditure (expenditure for additional RWC visitors while accounting for displacement) of \$220m to \$340m, with a "best" estimate of \$280m.

⁴⁷ International Visitor Arrivals Survey, Statistics New Zealand

Figure 19: Additional expenditure to New Zealand as a result of the Rugby World Cup

