



**MINISTRY OF BUSINESS,  
INNOVATION & EMPLOYMENT**  
HIKINA WHAKATUTUKI

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# International Visitor Survey Revision 2013

## Information Paper

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## Introduction

The Ministry of Business, Innovation and Employment (MBIE) initiated the redevelopment of the International Visitor Survey (IVS) in late 2011 as part of the Tourism Data Improvement Programme implementing the Tourism Domain Plan.

Although the previous IVS provided good quality estimates of total tourism spend, redevelopment was required to solve a number of problems, including:

1. A lack of precision within expenditure estimates from tourism markets smaller than Australia
2. Significant gaps in the sampling frame. Business lounge users, Queenstown airport departees, and anyone not available in the departure lounge with 20+ minutes to spare could not be sampled
3. Excessive collection costs and a high respondent burden. The average IVS respondent interview time exceeded 20 minutes.

The Ministry's 14 November 2013 IVS data release will be the first IVS publication to include data from the revised IVS. The survey's redesign has impacted a number of tourism time series, in particular expenditure. This paper outlines the methodological changes to the IVS survey and methodology for backcasting the historical data in preparation for the 14 November publication results.

The major changes to the redeveloped IVS are:

- *Survey data is now collected online, compared to previous face-to-face respondent interviews.*  
IVS airport field agents now collect visitor email addresses and a minimal amount of respondent screening information. All departees, including business lounge and Queenstown airport travellers, meeting the survey's target population definition are included within the IVS visitor sample.
- *Significant questionnaire redesign.*  
Significant improvements have been made to the expenditure, reason for travel, accommodation, transport and activities questionnaire components.
- *Increased sample size*  
The sample size has been increased from 5,200 to 9,900 per year.

A back-mapped historical series between IVS versions has been generated. Both the historical and the redesigned versions of the IVS questionnaire and methodology were run simultaneously over the six month period, ending on the 30 June 2013. The simultaneous collection of visitor expenditure estimates from each survey enabled a comparison between surveys to be derived, and used to "backcast" the historical expenditure estimates to the new survey's measures.



## Population and sample changes

### Target population

Compared to previously, the redesigned IVS target population now *excludes*:

- Individuals whose purpose of visit to New Zealand was to attend a recognised educational institute, and are foreign-fee paying students.

Foreign-fee paying student expenditure is now estimated via an education series developed by Statistics New Zealand and Education New Zealand. This exclusion has resulted in the redesigned survey's target population being marginally fewer than the population of short term visitors to New Zealand who are 15 years of age or older.

### Sample structure

The redesigned survey exploits historical international visitor departure patterns and travel times as a basis for drawing its survey sample.

The IVS has been re-designed to achieve a 5 per cent relative margin of error (at the 95 per cent confidence level) for total visitor expenditure, and less than 10 per cent relative margin of error for expenditure from the top six tourism market countries (Australia, United Kingdom, United States, China, Japan and Germany). Previously, the relative margin of error was 6 per cent for total expenditure with no accuracy requirements for the top six countries.

The redesigned IVS draws its visitor sample based on measures of the actual number of target population visitors who departed New Zealand from our international airports over the survey time period in the previous year. Using actual historical visitor departure information, time periods are randomly selected with the probability of being selected based on the number of flights during that period – periods with no flights will have no probability of being selected while those with a high number of flights have a high probability. For Auckland, Wellington and Queenstown airports two hour time periods are used<sup>1</sup>, while for Christchurch airport it is a four hour time period<sup>2</sup>.

Previously, the sampling of the IVS was 'flight based' – a stratified cluster sample of departing international flights with quota sampling of individual respondents. The move to day bi-hour and tetra-hour sampling, based on most likely target visitor departure times, improves the collection of sample information of target population visitors.

### Redesigned sample collection process

The survey population has moved to a two part sample collection process that has increased both the range of persons surveyed and the number of completed survey responses.

IVS responses are collected via:

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<sup>1</sup> Described in the IVS Technical Description as a "day bi-hour" period

<sup>2</sup> Described in the IVS Technical Description as a "day bi-hour" period

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1. Departing international visitors who have passed through customs and security at an international airport are screened for survey eligibility and their email addresses collected.
  2. An online survey questionnaire, used to collect the bulk of the visitor information, is sent to the visitor's email address to be completed by the respondent in their own time and leisure. This new approach replaces the face to face interviews previously conducted only at selected airport departure gates.

Previously, only visitors arriving at their departure gate and with more than 20 minutes to spare could be interviewed. Now *all* departing visitors, including those using business and first class lounges, can be surveyed.

The changed collection method and improved questionnaire (see below) have resulted in a *mode effect*: survey participants have responded differently to the survey questions depending on the collection method each survey has used. The mode effect has caused a break in the IVS series. MBIE has tried to minimise the impact on analysts of the mode effect through backcasting and re-mapping variables between the surveys as outlined below.

The number of international airports used for collecting sample data from has also expanded. Previously, survey data was collected from Auckland, Wellington and Christchurch international airports. With the growing number of overseas visitors flying internationally from Queenstown, Queenstown airport has been included within the sample collection process.

## Survey population weighting

Each respondent within the sample is weighted to represent their fraction of the total number of all international visitors departing New Zealand within the survey's target population.<sup>3</sup> IVS survey response weights are adjusted to reflect the unequal probabilities of respondent selection from the composition of the target population, and known discrepancies between the sample and the population definitions.

The survey response weights are adjusted to preserve population totals from Statistics New Zealand external migration statistics for the following six key variables which define the target population:

- 1) Country of permanent residence
- 2) Purpose of visit
- 3) Age
- 4) Departure airport
- 5) Length of stay
- 6) Gender

Reconciling the survey population weights to known total external migration departure numbers, and adjusting for respondent composition changes ensures estimates of total visitor

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<sup>3</sup> See Target population above.



expenditure reflect all available information on visitor travel and composition patterns and their changes over time.

The weighting method has changed from the previous IVS in a number of technical ways.

## Questionnaire changes

The questionnaire has been significantly simplified to shorten respondent completion times and overall respondent burden. MBIE estimates the time taken to complete the questionnaire has fallen from over 20 minutes to approximately 10 minutes with the changes made. This section summarises the key questionnaire changes. Both questionnaires are available and can be compared online.<sup>4</sup>

### Treatment of airfares

International visitor airfares to New Zealand purchased outside of New Zealand are excluded from estimates of New Zealand visitor spending. Respondents are asked to exclude these costs from their reported expenditure to ensure estimates of New Zealand-based visitor spend are not distorted by non-New Zealand transactions.

Where visitors arrive on holiday tours or holidays packages, their New Zealand expenditure may include an international airfare component within their total tour or package price. Where this is true, the tour or package airfare component is separately estimated from an airport intelligence database maintained by the airline intelligence company, Sabre, and used to remove airfares from the tour or package price to estimate total New Zealand-based expenditure as the residual.<sup>5</sup>

Previously, respondents were asked for the cost of the international airfare and this was removed from the total expenditure calculation. Where an airfare cost to be removed from a respondents total expenditure was unknown or could not be isolated, an imputed value was used based on costs provided by other respondents.

### Expenditure

The collection of expenditure information has changed and been simplified.

With the survey questionnaire emailed to respondents, most respondents are assumed to complete the survey at their usual place of residence. Respondents are likely to have access to their financial records, bank and credit card statements when they complete the questionnaire. Consequently, expenditure questions now collected New Zealand expenditure totals by payment method type; for example, credit card spend, travellers cheques spend, etc. Previously, New Zealand expenditure estimates were collected by broad expenditure group; for example, “accommodation” spend, and “food and beverage” spend.

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<sup>4</sup> <http://www.med.govt.nz/sectors-industries/tourism/tourism-research-data/international-visitor-survey>.

<sup>5</sup> Further information on this process is provided in the IVS the Technical Description.



Changes to the expenditure classification are illustrated below<sup>6</sup>:

<b>New spend categories</b>	
Package/tour cost (where applicable)	
<b>AND</b>	
Total cost of trip (excluding Package/tour cost)	<b>OR</b> Non tour/package prepaid costs Costs paid for while in NZ: <ul style="list-style-type: none"> <li>• amount paid by credit card</li> <li>• amount paid with Travel Card, Cash Card</li> <li>• amount paid by debit card</li> <li>• amount paid by travellers cheques</li> <li>• amount paid in cash</li> <li>• amount paid another way</li> </ul>



<b>Previous spend categories</b>	
Package Spend <ul style="list-style-type: none"> <li>• International airfares</li> <li>• International airfares using air miles etc.</li> <li>• International airfares using airline discount</li> <li>• Domestic airfares in NZ</li> <li>• Transport including fuel</li> <li>• Accommodation</li> <li>• Food and beverage</li> <li>• Activities, attractions, entertainment</li> <li>• Events and conferences</li> <li>• Educational fees</li> <li>• Other expenditures (specify)</li> </ul>	Spend in NZ <ul style="list-style-type: none"> <li>• Domestic airfares in NZ</li> <li>• Transport including fuel</li> <li>• Accommodation</li> <li>• Food and beverage</li> <li>• Activities, attractions, entertainment</li> <li>• Events and conferences</li> <li>• Educational fees</li> <li>• Gambling / Casino</li> <li>• Gifts / Souvenirs</li> <li>• Other expenditures (specify)</li> </ul>
Prepaid spend <ul style="list-style-type: none"> <li>• Domestic airfares in NZ</li> <li>• Transport including fuel</li> <li>• Accommodation</li> <li>• Food and beverage</li> </ul>	<ul style="list-style-type: none"> <li>• Activities, attractions, entertainment</li> <li>• Events and conferences</li> <li>• Educational fees</li> <li>• Other expenditures</li> </ul>

The move away from collecting New Zealand expenditure by broad expenditure group towards collecting high level expenditure totals is believed to have improved the overall expenditure information. A total spend measure is easier for respondents to provide, compared to decomposing changes in expenditure into discrete spending groups; and easier to compare to documentation such as bank statements.

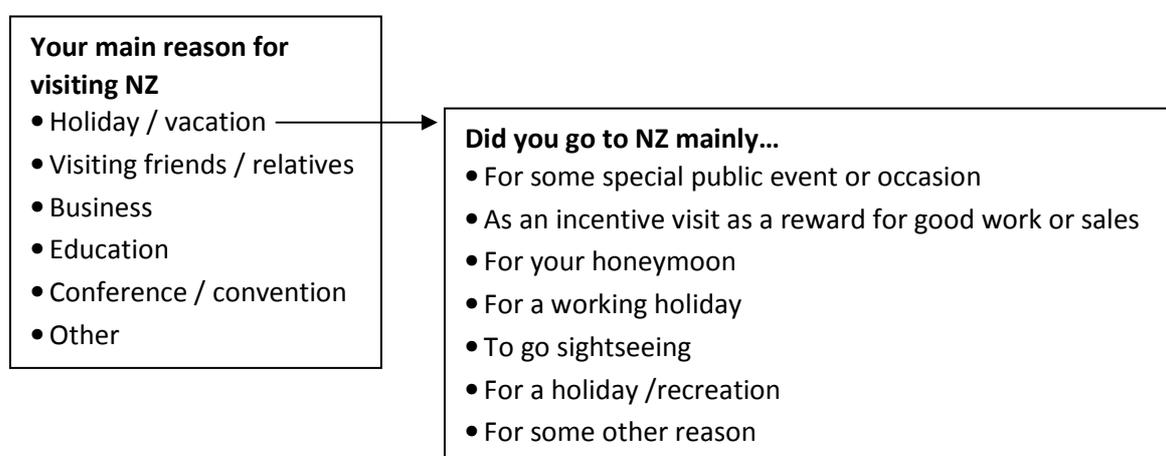
<sup>6</sup> Respondents are asked to exclude expenditure related to international airfares, buying a house, flat or timeshare, and any maintenance on a house, flat or timeshare.

Where a tour or package cost includes nights outside of New Zealand, the proportion of nights in New Zealand to total nights included in the tour or package is used to estimate the amount of New Zealand expenditure.

When a respondent is reporting expenditure for themselves and others, the number of additional adults and/or children that it relates to is requested so that a per person expenditure total can be calculated.

## Purpose of Visit

The purpose of visit section now asks a broad 'main reason for visiting' question aligned to New Zealand's arrival card classifications, with follow-up questions based on the initial response. 'Purpose of visit' information, aligned to New Zealand arrival card classifications, is needed to weight the survey to the population. The question structure is illustrated below.



This question structure replaces two questions: the first asked their main reason for travelling to New Zealand and presented 24 options (many of which are captured in the new structure); the second asked what reason they marked on the arrival card.

Responses to the previous 'Main reason for travelling to New Zealand' question will be mapped to the new main purpose of visit question and to the follow up questions. For example 'Honeymoon' is mapped to 'Holiday / vacation' and then to 'For your honeymoon' in the follow-up question.

Only two of the previous classifications for reasons for travelling are no longer used, they are: 'now living in New Zealand' and 'skiing'. People who are now living in New Zealand are not considered visitors and are screened out during the email collection stage. Those who are here to ski are considered to be on a holiday / vacation and skiing is recorded in the activities section.

Previously respondents were asked how many times they had visited New Zealand and when they last visited. This information is no longer captured.

## Itinerary – places stayed

Information on locations where the respondents stayed at least one night continues to be captured; however, the number of locations has been limited to 483 compared to the 2,547

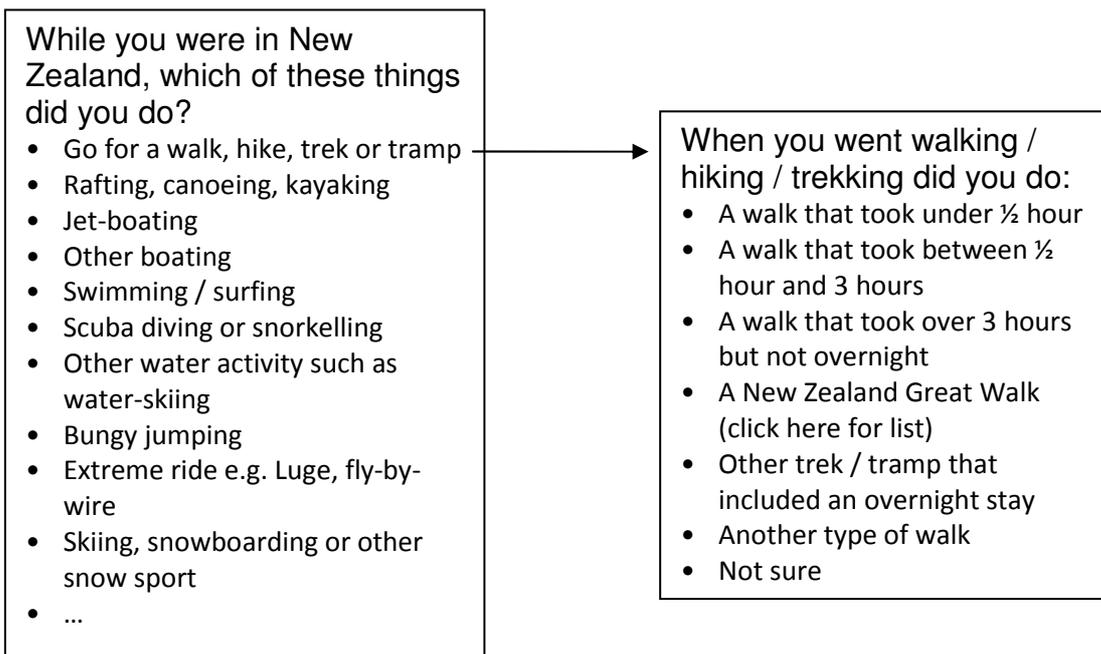
previously. The order of places stayed is no longer captured. If a location is not available for selection, respondents are asked to identify the closest town or city.

The series of questions that built up a detailed itinerary in the previous survey was the main contributor to the unsustainable length of the questionnaire and has been removed. For each location, these questions collected information on transport used, accommodation, activities, day trips from each location, and places visited for more than an hour on the way to or from the location. Information about activities, transport and accommodation is now collected separately and no longer associated with locations stayed. Locations visited but not stayed at are no longer captured.

Historical information on locations stayed at least one night will be mapped to the new location list. Where a previously stayed location is not listed, it will be mapped to the next closest location.

## Activities

Information on activities is now captured through six multiple choice questions with some responses having further follow-up questions. Previously information was captured through an open ended question related to a specific place. An example of the new question structure is provided below.



Responses given in the old questionnaire were coded to a list of 141 activities for analysis. These responses have been mapped to the 110 activities now used, where an appropriate match can be found.



## Transport and Accommodation

Information on transport used is collected through a single question where the respondent is asked to select all the types of transport used while in New Zealand (20 options are provided, down from 27 previously). Similarly they are asked to select all the different types of accommodation they stayed at in New Zealand (19 options are provided, down from 33 previously). Three additional accommodation questions are asked:

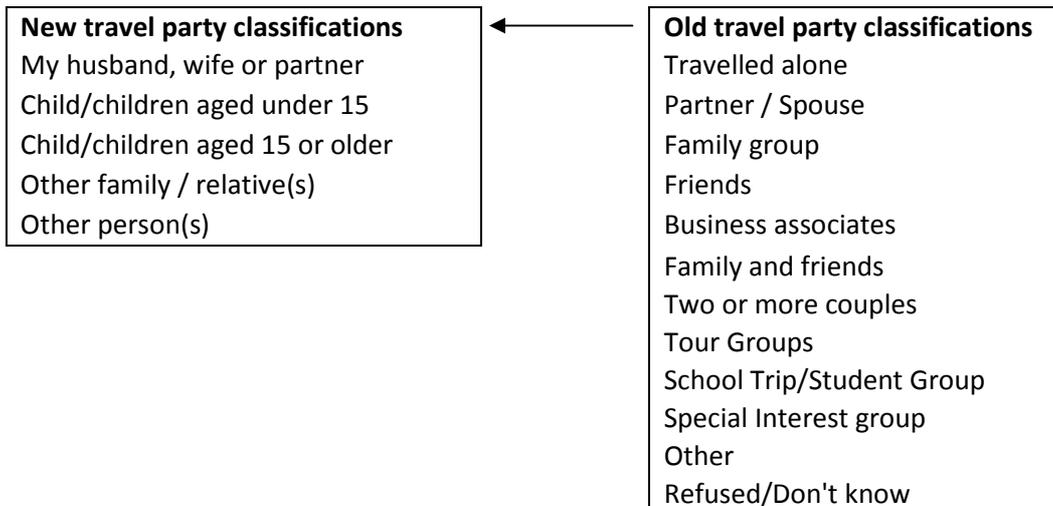
- Which type of accommodation did you use for the greatest number of nights?
- Do you own a house/flat or have a time-share in New Zealand?
- Did you stay in your own house, flat or time-share?

Information on nights stayed at each accommodation type is no longer captured.

Responses given in the old questionnaire have been mapped to their corresponding answers, where an appropriate match can be found.

## Travel party and style

Respondents are asked if they travelled alone, with others or sometimes alone and sometimes with others. If they did not travel alone they are asked a subsequent question on the make-up of the travel party. The number of travel party classifications has been reduced in the redeveloped IVS. A comparison of the travel party classifications is provided in below.



Travel party size is no longer collected. When a respondent is reporting expenditure for themselves and others, the number of additional adults and/or children that it relates to is requested.

Travel style classifications have changed in to reflect the changes in the expenditure section of the questionnaire, the new and old classifications are provided below.



New travel style classifications	Old travel style classifications
<p>Tour</p> <p>Went to NZ on a group tour that included international travel to NZ AND that was organised by a travel business or other organisation.</p>	<p>Tour group</p> <p>A tour group traveller is someone who booked their travel with a tour group and is not a fully independent traveller or a semi-independent traveller.</p>
<p>Package</p> <p>Part (or all) of the visit to NZ was a package deal that included international travel to NZ as well as something else such as accommodation AND that was offered by an airline or other travel organisation.</p>	<p>Package traveller</p> <p>A package traveller is one who has paid for numerous items before travel and as part of a package. These items include international airfares and accommodation and domestic airfares or other transport and meals or sight seeing/activities/attractions. Package travellers are also not part of a tour group.</p>
<p>Fully Independent Traveller (FIT)</p> <p>Reported no costs paid before coming to NZ AND reported costs paid by type of expenditure while in NZ (e.g. credit card, cash, debit card) AND is not recorded as Tour or Package.</p>	<p>Fully independent traveller (FIT)</p> <p>To be classed as a FIT one must not have purchased their domestic airfares, accommodation, meals, other transport, some sightseeing/activities/attractions /other entertainment, event or conference, or educational fees before arriving in New Zealand.</p>
<p>Semi Independent Traveller (SIT)</p> <p>Reported some costs paid before coming to NZ AND is not recorded as Tour or Package.</p>	<p>Semi-independent travellers (SITs)</p> <p>To be classed as a SIT one must have paid for their international airfares before arriving in New Zealand as well as at least one of the following items:</p> <ul style="list-style-type: none"> <li>- Domestic airfares</li> <li>- Accommodation</li> <li>- Meals</li> <li>- Other transport</li> <li>- Sightseeing/activities/attractions/ other entertainment</li> <li>- Events/conferences</li> <li>- Educational fees</li> </ul> <p>To qualify as a SIT one must also not be a tour group or packaged traveller.</p>
<p>Unknown Independent Travellers (UIT)</p> <p>Reported total cost of the trip to NZ AND is not recorded as Tour or Package.</p>	



## Other countries visited

Information on other countries that the respondent visited for at least one night as part of their visit to New Zealand has been limited to nights stayed in Australia. Previously respondents were asked which countries they had stayed in for at least one night prior to arriving in New Zealand and intended to stay in on leaving New Zealand, along with the number of nights in each.

## Other variables no longer collected

The following information is no longer being collected:

- Employment by a New Zealand business and the amount received before tax
- Use of business lounge.

## Backcasting of international visitor expenditure

A six month dual-run of the IVS was completed on the 30 June 2013. Over this period, both the old method and the new method surveys were run simultaneously, collecting six months of data from both surveys for the same time period. Capturing the same time period data enabled differences between the surveys to be identified and used to express historical international visitor expenditure from the previous method relative to estimates obtained from the new IVS method. Dual-running two versions of a survey for the same period of time, and using the differences between the obtained results to re-express one survey in the other's measures is known as *backcasting*.

An adjustment factor expressing the relative difference between the average expenditure per visit for each purpose of visit classification between both surveys over the dual-run time period was derived. The adjustment factor was applied to historic estimates of average expenditure per visitor to express total visitor expenditure from the previous IVS method in the measures reflecting the new IVS methodology.

Total expenditure estimates were also adjusted to reflect differences in the target population between the two surveys. The redesigned IVS excludes education-related visitor expenditure. The previous IVS methodology included education-related expenditure. Consequently, education-related spend estimates were excluded from the historical measures to ensure the population definitions of the two surveys were comparable.

An indication of the size of the revision to total visitor expenditure from the backcasting adjustment was published in the Statistics New Zealand publication *Revisions to New Zealand's macroeconomic accounts to December 2013*. Statistics New Zealand estimated backcast revisions to the IVS and improvements in measuring international student expenditure increased New Zealand's Balance of Payment's exports by up to \$2.3 billion annually from 2003 onwards.