

# Tourism Victoria Research

## Guide to Sources, Methodologies & Definitions

Tourism Victoria's research unit analyses and collates a range of research and statistics relating to tourism in Victoria. Our publications include a range of information, including domestic and international visitation and expenditure, the economic contribution of tourism, tourism forecasts and segment and market profiles.

### Introduction

Tourism Victoria's research unit analyses and collates a range of research and statistics relating to tourism in Victoria. This document outlines the key data sources used, their methodology and definitions, as well as limitations and caveats. Links are included where further information can be found.

Key data sources include:

- National Visitor Survey (NVS) – Tourism Research Australia (TRA)
- International Visitor Survey (IVS) – TRA
- Tourism Forecasts - TRA
- Overseas Arrivals and Departures (OAD) - Australian Bureau of Statistics (ABS)
- Tourism Satellite Accounts (TSA) –ABS, TRA and Deloitte Access Economics

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### Definitions

**A tourist** (in accordance with the United Nations World Tourism Organization) is defined as someone who is away from home for less than one year continuously, for the purposes of leisure (including holiday and visiting friends and/or relatives), business, education, employment or other personal reason, other than to be employed by a resident entity in the country or place visited.

**International Overnight Visitors** have stayed in Australia for less than one year and are departing through one of the eight major international airports. Passengers who depart via another gateway, or via other transport methods such as cruise ships are not captured within the survey however are included in the benchmarked results (*please refer to International Visitor Survey methodology*).

**Domestic Day Trip visitors** are those who have travelled for a round trip distance of at least 50km, are away from home for at least 4 hours and do not spend a night away from home as part of their travel. Same day travel as part of overnight travel is excluded, as is routine travel such as commuting between work or school and home.

**Domestic Overnight Visitors** are those who have taken a trip away from home for at least one night (and less than one year), at a place at least 40km from home. A person is a visitor to a location if they stay one or more nights in the location while travelling.

Net visitor numbers are reported within each geographic region: for example, if a visitor has a stopover of one night in Benalla and one night in Wangaratta, they are counted as a single visitor to the total High Country region.

**Visitor nights** is a measure of the total number of nights spent by overnight visitors on overnight trips (e.g. one visitor can spend several nights away).

*Example* – An interstate overnight visitor to Melbourne and the Goldfields who stayed 4 nights on their trip (2 in each destination) is counted as:

- 1 interstate overnight visitor to Melbourne spending 2 nights
- 1 interstate overnight visitor to Goldfields staying 2 nights
- 1 interstate overnight visitor to Victoria spending 4 nights

Note that you can sum the nights as they are mutually exclusive but you cannot sum visitors within the one geographic destination as you may double count and overestimate visitor numbers.

Tourism Victoria primarily reports on eleven **tourism regions**, including Melbourne. Some larger tourism regions also contain sub-regions. **A map of Victoria's regions** is available from:

<http://www.tourism.vic.gov.au/research/domestic-and-regional-research/regional-map.html>

Each region/ sub-region is defined using smaller geographical building blocks called Statistical Areas Level 2 (SA2s) developed by the Australian Bureau of Statistics (ABS). SA2s do not precisely align with the boundaries of Local Government Areas (LGAs). This means that International and National Visitor Survey results cannot be precisely mapped on to Local Government Areas.

**Average annual growth (AAG)** is a calculation of the average annual increase or decrease over a specified number of years.

## International Visitor Survey (IVS):

### Metrics

- Usual place of residence
- Repeat visitation
- Group tours
- Travel party
- Sources for obtaining information about Australia
- Purpose of visit and places visited
- Transportation and accommodation
- Activities
- Expenditure
- Demographics

### Survey Methodology

The IVS is conducted with short-term visitors (less than one year) aged 15 years or more who depart Australia through one of the eight major international airports. The survey is conducted with 40,000 international visitors per annum, using Computer-Assisted Personal Interviewing, with interviews conducted in English, Japanese, Korean and Mandarin. The data is weighted using passenger arrivals and departures data collected by Department of Immigration and Border Protection (DIBP). The data is weighted to be representative of country of residence, state of arrival, main purpose of journey, departure airport, age and sex. Results of the survey are produced quarterly.

### Expenditure

The IVS captures all expenditure by the respondent relating to the trip, including elements such as airfares, package expenditure, accommodation, food and beverages, etc. Some elements of this expenditure will only partially flow through to the Australian economy (e.g. airfares and package expenditure) with much of this expenditure attributable to the respondent's home country. As part of the expenditure modelling process, a portion of this expenditure is allocated to Australia.

Regional Expenditure modelling (referred to as REX) - Expenditure in the IVS is collected for whole trips and for a randomly selected stopover; it is not collected for each overnight stopover a visitor makes. The remaining visitor expenditure (apart from the randomly selected stopover, which is a known quantity) is allocated to particular regions as part of a modelling process.

Note that the IVS expenditure is allocated to regions based on overnight stopovers. If a visitor takes a daytrip to a region, but does not stay overnight there, their expenditure is not allocated to that region.

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More detailed information about the IVS is available from:  
<http://www.tra.gov.au/aboutus/international-visitor-survey.html>

## Limitations and caveats

IVS expenditure is allocated to regions through the regional expenditure model (REX) based on overnight stopovers. If a visitor takes a daytrip to a region, but does not stay overnight there, their expenditure is not allocated to that region.

The IVS is a sample-based survey rather than a census; as such, the results are subject to sampling variability.

Tourism Victoria currently publishes IVS estimates based on the following thresholds:

- International Overnight Visitors: 5,000 or more
- International Visitor Nights: 250,000 or more

Results below this are suppressed due to sampling variability that is too high for practical purposes. Estimates that fall below these thresholds are indicated in Tourism Victoria publications by "-" or "np" (for "not publishable").

A confidence interval can be used to indicate the extent to which an estimate from a sample survey may vary from the true value if the entire population was measured. The 95% confidence intervals are presented below for select estimates (approximately 19 chances in 20 that the true value lies in between the lower and upper bounds).

For example, for an estimated 50,000 international overnight visitors, there is a 95% chance that the true value falls within a range of 50,000  $\pm$ 13.8% (i.e. between 43,100 and 56,900).

Estimates with a confidence interval greater than  $\pm$ 50.0% are typically considered too unreliable for practical purposes, which is why the publishable thresholds have been established.

### **Overnight Visitors** $\geq$ 5000 publishable threshold

Estimate	5,000	10,000	20,000	50,000	100,000	200,000	500,000	1,000,000	2,000,000
Interval	$\pm$ 41.5%	$\pm$ 29.8%	$\pm$ 21.4%	$\pm$ 13.8%	$\pm$ 9.9%	$\pm$ 7.1%	$\pm$ 4.6%	$\pm$ 3.3%	$\pm$ 2.4%

### **Nights** $\geq$ 250,000 publishable threshold

Estimate	200,000	500,000	1,000,000	5,000,000	10,000,000	20,000,000	50,000,000	100,000,000
Interval	$\pm$ 55.4%	$\pm$ 36.7%	$\pm$ 26.9%	$\pm$ 13.1%	$\pm$ 9.6%	$\pm$ 7.0%	$\pm$ 4.6%	$\pm$ 3.4%

### **Expenditure (\$)** $\geq$ \$25 million publishable threshold

Estimate	20 million	50 million	100 million	200 million	500 million	1 billion	2 billion	5 billion	10 billion
Interval	$\pm$ 54.3%	$\pm$ 36.8%	$\pm$ 27.4%	$\pm$ 20.5%	$\pm$ 13.9%	$\pm$ 10.3%	$\pm$ 7.7%	$\pm$ 5.2%	$\pm$ 3.9%

## National Visitor Survey (NVS):

### Metrics

- Destination
- Purpose
- Transportation
- Travel package
- Information sources
- Activities
- Expenditure
- Accommodation
- Travel party
- Demographics

## Survey Methodology

The NVS is conducted with Australians aged 15 years or more by Computer-Assisted Telephone Interviewing. Prior to 2014, respondents were contacted on landlines; from 2014 onwards, respondents may be contacted either by landline or mobile phone. A total of 120,000 respondents are surveyed, including both travellers and non-travellers. The relevant recall periods for travellers are: within the last 7 days for daytrips; within the last 28 days for domestic overnight trips; and within the last 3 months for outbound trips.

Results of the survey are produced quarterly.

## Overnight Expenditure

Overnight expenditure in the NVS is collected for the respondent's entire journey rather than individual stops. Total trip expenditure includes expenditure by the respondent during the trip, before or after the trip (e.g. taxi fare) and expenditure paid by an employer or other person who is not travelling.

Note that expenditure on capital goods (e.g. motor vehicles, property and office equipment) is not regarded as tourism expenditure and is therefore not included in published estimates.

Pre/post-trip expenditure is allocated to the respondent's home region, as is part of any long-distance travel fares (e.g. airfares).

Regional Expenditure modelling (referred to as REX) - As expenditure is not collected for each individual stopover, a modelling process is undertaken to allocate destination expenditure to stopover regions.

Note that expenditure is allocated through the regional expenditure model (REX) based on overnight stopovers. If a daytrip to another region is undertaken as part of an overnight trip, expenditure will not be allocated to the daytrip destination.

## Daytrip Expenditure

Daytrip expenditure is allocated using a much simpler process, as each trip has one destination. Expenditure is divided between the home region and the destination region, based on predetermined ratios.

More detailed information about the National Visitor Survey is available from:

<http://www.tra.gov.au/aboutus/national-visitor-survey.html>

## Limitations and caveats

Prior to 2014, mobile phone-only households were not captured in the NVS as the survey was conducted on landlines only. As of 2013, approximately 20% of the population aged 18 years or more did not have a landline, with younger people being more likely to be mobile-only. The possibility that these respondents exhibit different patterns of travel to the surveyed population is a potential source of bias in more recent results.

Estimates produced as part of the NVS are based on a sample, rather than a census. As such, the results are subject to sampling variability.

Tourism Victoria currently publishes NVS estimates based on the following thresholds:

- Domestic Overnight Visitors: 50,000 or more
- Domestic Visitor Nights: 500,000 or more
- Domestic Daytrip Visitors: 100,000 or more

Results below this are suppressed due to sampling variability that is too high for practical purposes. Estimates that fall below these thresholds are indicated in Tourism Victoria publications by "-" or "np" (for "not publishable").

A confidence interval can be used to indicate the extent to which an estimate from a sample survey may vary from the true value if the entire population was measured. The 95% confidence intervals are presented below for select estimates (approximately 19 chances in 20 that the true value lies in between the lower and upper bounds).

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For example, for an estimated 5,000,000 domestic overnight visitors, there is a 95% chance that the true value falls within a range of 5,000,000  $\pm$ 4.9% (i.e. between 4,755,000 and 5,024,500).

Estimates with a confidence interval greater than  $\pm$ 50.0% are typically considered too unreliable for practical purposes, which is why the publishable thresholds have been established.

## **Domestic Overnight Visitors** $\geq$ 50,000 publishable threshold

<b>Estimate</b>	50,000	100,000	200,000	500,000	1,000,000	5,000,000	10,000,000	20,000,000
<b>Interval</b>	$\pm$ 47.5%	$\pm$ 33.8%	$\pm$ 24.0%	$\pm$ 15.3%	$\pm$ 10.8%	$\pm$ 4.9%	$\pm$ 3.5%	$\pm$ 2.5%

## **Domestic Visitor Nights** $\geq$ 500,000 publishable threshold

<b>Estimate</b>	500,000	1,000,000	5,000,000	10,000,000	20,000,000	50,000,000	100,000,000	200,000,000
<b>Interval</b>	$\pm$ 45.7%	$\pm$ 32.4%	$\pm$ 14.6%	$\pm$ 10.3%	$\pm$ 7.3%	$\pm$ 4.6%	$\pm$ 3.3%	$\pm$ 2.3%

## **Domestic Overnight Visitor Expenditure (\$)** $\geq$ \$50 million publishable threshold

<b>Estimate</b>	70 million	140 million	200 million	500 million	1 billion	2 billion	5 billion	10 billion	20 billion
<b>Interval</b>	$\pm$ 49.5%	$\pm$ 35.7%	$\pm$ 30.1%	$\pm$ 19.5%	$\pm$ 14.1%	$\pm$ 10.1%	$\pm$ 6.6%	$\pm$ 4.7%	$\pm$ 3.4%

## **Domestic Daytrip Visitors** $\geq$ 100,000 publishable threshold

<b>Estimate</b>	200,000	500,000	1,000,000	3,000,000	5,000,000	10,000,000	20,000,000	50,000,000
<b>Interval</b>	$\pm$ 42.2%	$\pm$ 26.9%	$\pm$ 19.1%	$\pm$ 11.1%	$\pm$ 8.6%	$\pm$ 6.1%	$\pm$ 4.3%	$\pm$ 2.8%

## **Domestic Daytrip Expenditure (\$)** $\geq$ \$30 million publishable threshold

<b>Estimate</b>	50 million	100 million	200 million	500 million	1 billion	2 billion	5 billion	10 billion	20 billion
<b>Interval</b>	$\pm$ 45.8%	$\pm$ 34.2%	$\pm$ 25.5%	$\pm$ 17.3%	$\pm$ 12.9%	$\pm$ 9.6%	$\pm$ 6.5%	$\pm$ 4.9%	$\pm$ 3.6%

## Survey of Tourist Accommodation (STA):

The STA is conducted by the Australian Bureau of Statistics (ABS), with results published annually in December, for the September, December, March and June quarters (for the previous fiscal year). Prior to July 2013, the survey was conducted and published quarterly.

### Metrics

- Number of establishments
- Available rooms
- Room nights occupied
- Occupancy rates
- Takings

### Who is in scope?

The STA is conducted with short-term non-residential accommodation businesses (i.e. typical stay duration of less than two months). Establishments in scope are:

- Hotels and resorts with 15 or more rooms
- Motels, private hotels and guest houses with 15 or more rooms
- Serviced apartments with 15 or more units

## Limitations and Caveats

The STA does provide a comprehensive picture of tourist accommodation. It does not capture small accommodation providers with less than 15 rooms, which may constitute a significant amount of the supply in some areas, and does not capture other categories of tourist accommodation such as caravan parks.

The STA is a census-style study, with all in-scope establishments surveyed. The response rates for each data period typically exceed 80%. As such, there is no sampling error associated with the survey. Non-sampling error may arise due to inaccurate data provided by respondents, data processing errors, missing data, definitional issues, and incomplete responses.

The ABS is required to ensure that individual respondent data remains confidential. As such, results for some sub-regions may be suppressed to ensure that individual providers cannot be identified. When Tourism Victoria reports results for the aggregated campaign region, if one of the sub-regions has been suppressed, results for the whole region will be suppressed. For example, if Murray East is suppressed, the total Murray region results will also be suppressed.

More detailed information about the STA is available from:

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/8635.0Explanatory%20Notes1Jun%202013?OpenDocument>

## Tourism Forecasts

The Tourism Research Australia tourism forecast provides ten-year forecasts for Australia's inbound, domestic and outbound sectors. The forecasts are issued twice annually, usually in April and October.

### Metrics

- Expenditure: Inbound, domestic overnight, domestic daytrip
- Inbound arrivals by market and purpose
- Inbound nights by market
- Domestic overnight trips, domestic daytrips
- Domestic visitor nights by purpose
- Outbound resident departures by destination and purpose

### Methodology

The Tourism Forecasts are developed through an iterative process:

- In the first iteration, the TRA Forecasting Unit estimates tourist activity and expenditure using a combination of econometric and time series models.
- The second iteration of the process involves an industry sentiment survey and consultation with key industry stakeholders to gain insight into the influential factors for the year ahead.
- In the final iteration, the forecasts are reviewed by the Tourism Forecasting Reference Panel, comprising experts from industry and government.

The Forecasts consider macroeconomic variables such as the consumer price index, exchange rates, current and forecast economic growth in Australia and internationally, as well as supply-side issues such as aviation capacity changes.

### Caveats and Limitations

Historically, the Tourism Forecasts have typically overestimated visitors and visitor nights and underestimated outbound departures. As such, all estimates should be used with caution.

The Tourism Forecasts only provides forecasts of nights at a state and metro/regional level. For estimates of international visitors and expenditure below the national level, Tourism Victoria uses a sum of components approach to derive a headline growth rate for the State:

- For total growth in international visitors and expenditure, the national growth rate for each source market (e.g. China) is applied to Victoria's existing visitor numbers/expenditure. The forecast result for each market is then added to produce the total visitor/expenditure result. From this, a headline growth rate is calculated.

For growth in domestic visitors/expenditure, the national growth rate is applied to Victoria's current results. As such, the Victoria-level forecasts should be treated with additional caution, as Victoria's performance may differ from national growth.

More detailed information about Tourism Forecasts is available from:

<http://www.tra.gov.au/publications/forecasts.html>

## Overseas Arrivals and Departures (OAD)

The OAD is produced monthly by the Australian Bureau of Statistics. Results are produced using data collected from incoming and outgoing passenger cards. The OAD collects data on international movements through Australian airports and sea ports (with the exception of air/ship crews). Results are produced for all travellers (as compared to travellers aged 15 years or more in the IVS and NVS).

### Metrics

Tourism Victoria reports on:

- Arrivals by source market and purpose
- Departures by destination
- Main state of stay

### Limitations and caveats

The OAD collects data at a national level. Travellers do not nominate each and every state that they visit. As such, detailed results are not available for individual states, with the exception of main state of stay.

The OAD includes a combination of comprehensive data and sampled data. The total number of short-term movements is fully enumerated. However, within that set of movements, the characteristics are derived based on a sample of passenger cards. As such, the results broken down by market, purpose and destination are subject to sampling variability.

More detailed information about the OAD is available from:

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3401.0Explanatory%20Notes1Dec%202013?OpenDocument>

## Tourism Satellite Account (TSA)

Economic impacts for tourism are estimated using a standardised statistical framework that is applied at the national, state and regional level using a Tourism Satellite Account (TSA) methodology. This is done because tourism is not a 'traditional' industry and is therefore not included explicitly in the Australia Bureau of Statistics (ABS) system of National Accounts (where industries are defined on the basis of the goods and services they produce).

Rather, tourism is implicitly included in the National Accounts on the basis of products purchased by visitors and produced by suppliers. In this way, the tourism industry is an aggregate of 'conventional industries' and is defined by the status of the consumer of these products (i.e. as a visitor). Tourism is not restricted to leisure activity and also includes travel for business, education or other reasons, provided that the destination is outside of the visitor's usual environment and is for the duration of less than a year.

### Methodology

TSA use financial and economic data to generate important measures of economic activity like Gross Regional Product (the equivalent to Gross State Product (GSP) or Gross Domestic Product (GDP)), Gross Value Added (GVA) and employment. There are a number of steps required to calculate the tourism industry's contribution to the economy. To start, a tourism consumption bundle is derived from TRA visitor survey data and adjusted to remove any price effects that are not directly attributed to the seller of the good or service (e.g. taxes, transport margins, pre-manufactured inputs etc.).

The direct and indirect contributions of tourism are estimated by using regional input-output multiplier tables, derived from Australian Bureau of Statistics data.

Importantly, TSA reporting generates measures that are comparable to economic statistics from other industries produced in the National Accounts.

## Important terms/concepts

TSA can capture both the direct and indirect impacts of tourism. These are two important concepts to distinguish:

- The **direct** contribution of tourism measures the contribution of direct transactions between a visitor and producer of a good or service. Put simply, this would include the direct impact of a visitor staying at hotel or participating in a tour.
- The **indirect** contribution of tourism captures the flow-on or 'second round' impacts created by the tourism industry. These result from the need for inputs to be supplied to the industries that directly provide goods and services to visitors. For example, this might include the fresh produce supplied to a hotel to deliver meals to guests.

The most widely recognised metrics in the TSA are:

- **Gross Regional Product or GRP:** this is the equivalent measure to Gross Domestic Product (GDP) or Gross State Product (GSP). This is one of the primary indicators used to measure the value of tourism to the economy and measures the total value of tourism goods and services produced over a specific time period. GRP estimates have been derived for both *direct* and *indirect* tourism activity.
- **Gross Value Added:** Generally considered the most accurate measure of the contribution of the industry to the economy. It includes the total labour income and capital revenue received by the industry and the net taxes that government received from the production. The direct estimates of GVA are directly comparable with the GVA of 'conventional' industries such as mining and manufacturing.
- **Employment:** this is the number of jobs that are generated as a result of tourism activity.
  - Employed person: Is a person aged 15 years and over who worked for one hour or more per week for pay, profit, commission or payment in kind in a job or business, or on a farm; or worked for one hour or more without pay in a family business or on a farm.
  - *Direct employment* includes employees of a tourism business i.e. an employee of a hotel, tour operator etc. *Indirect employment* relates to the workforce of the suppliers to the tourism industry i.e. someone working for a laundry company that services a hotel.

There are three levels of TSA produced in Australia:

### 1. National Tourism Satellite Accounts are produced by the Australia Bureau of Statistics (ABS)

The National TSA captures *direct* economic value of tourism for Australia. This allows tourism to be compared 'traditional' national industries.

More detailed information about the National TSA is available from:

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/5249.0Explanatory%20Notes12012-13?OpenDocument>

### 2. State Tourism Satellite Accounts are produced by Tourism Research Australia

Tourism Research Australia (TRA) supplements the national Tourism Satellite Account (TSA) published by the Australian Bureau of Statistics (ABS) with a similar set of TSA data expanded for all states and territories. The state TSAs go beyond the scope of the national TSA by providing state measures for both the *direct and indirect* contribution of tourism, and the resulting total contribution of tourism to the state and national economies. This provides a more complete picture of the contribution of the tourism sector to the Australian economy.

More detailed information about the State Tourism Satellite Accounts is available from:

<http://www.tra.gov.au/publications/publications-list-State-Tourism-Satellite-Accounts-2011-12.html>

### 3. Victorian Regional Tourism Satellite Accounts are produced by Deloitte Access Economics for Tourism Victoria

Extended TSA modelling to further estimate the value of tourism to Tourism Victoria's regions and sub-regions. This includes both direct and indirect estimates. All regional numbers has been calibrated so they align to the State TSA numbers produced by TRA and are comparable.

More detailed information about Victoria's Regional Tourism Satellite Accounts is available from:

<http://www.tourism.vic.gov.au/research/economic-significance.html>

## **Limitations and caveats**

TSA includes best estimates based on the internationally recognised and accepted methodology for 'measuring tourism'. It is important to note that the estimates of economic contribution are derived from estimates and assumptions of complex interactions amongst all components of the economy which change over time (and are benchmarked every third year).

While as much care as possible has been taken to ensure the quality of the estimates in the satellite accounts, users should exercise some caution in the use and interpretation of the results. In order to produce estimates at a finer level of detail than is normally provided in the national accounts, some of the data used to produce the satellite accounts have been extended to the limits of their original design capabilities. Assumptions underlying the estimates also have an effect on the estimates' quality.